



REQUEST FOR QUALIFICATIONS

CITY OF HOPEWELL

**Third-Party Auditor
With Expertise in Environmental
Auditing and with the Federal
Clean Air Act and 40 CFR Part 63
Subpart S (Pulp and Paper MACT)**

BID: #07-17

DATE: October 28, 2016

Sealed Bids, subject to the general conditions and specifications hereby attached, will be received at the Office of the City Clerk, Second Floor, Municipal Building, 300 North Main Street, Hopewell, Virginia 23860 until, but not later than 11:00 a.m. **THURSDAY, December 8, 2016** and then publicly opened in the Council Chambers, Municipal Building, 300 North Main Street, Hopewell, Virginia on the aforementioned date and time for furnishing the solicited supplies or services.

1. All bids must be submitted in a sealed envelope.
2. Regardless of delivery method of bid, the **outside** of each envelope must clearly indicate the following: *(if bid is delivered by Federal Express, UPS, USPS Priority, etc. or any other means, the outside of **each** envelope **must also** clearly indicate):*

**Office of the City Clerk
Second Floor
Municipal Building
300 North Main Street
Hopewell, Virginia 23860**

Closing Date of Bid: December 8, 2016

Commodity Name: Third-Party Auditor

Bid #: 07-17

FOR YOUR BID TO BE CONSIDERED, IT MUST BE SUBMITTED ON THIS INVITATION FOR BID IN THE PLACES PROVIDED. BIDDERS SHALL SIGN THIS FORM (PAGE 3) WITHOUT DETACHING FROM REST OF BID AND MUST RETURN BID IN ITS ENTIRETY.

ANY BID RECEIVED AFTER THE ANNOUNCED TIME AND DATE OF OPENING, WHETHER BY MAIL OR OTHERWISE, WILL NOT BE CONSIDERED AND WILL BE RETURNED UNOPENED.

The right is reserved to reject any or all Bids submitted and also to place the order where it appears it will be to the best interest of the city. All quoted prices shall be FOB locations.

If you desire not to bid on this invitation, please forward your acknowledgement of NO BID.

All bid quotations are subject to general terms and conditions hereby attached and will be rejected if not properly executed.

Individual contractors must provide their social security numbers and other types of firms must provide their federal employer identification numbers in the payment clauses to be included in contracts.

Quantities indicated herein are estimates of anticipated usage. It is understood and agreed to between the parties of a resulting contract that the City may increase or decrease quantities at the quoted price. Furthermore, it is agreed to between the parties of a resulting contract that the City shall not be obligated to purchase or pay for materials by such contract unless and until they are ordered and delivered.

The City reserves the right to be sole judge and to make the award in accordance with its own judgement as to what will best meet its requirements and be in the best interest of the City. The City reserves the right to reject any or all bids, to waive all informalities, and to reject any or all items of any bid.

AVAILABILITY OF FUNDS: It is understood and agreed between the Bidder and the City that the City shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this quotation or agreement.

WITHDRAWAL OF BID: No bid may be withdrawn for a period of ninety (90) days from the date of bid opening unless the bidder has made a clerical error. The bidder shall give notice in writing of his claim of right to withdraw his bid within two (2) business days after the conclusion of the bid opening procedure and shall submit original work papers substantiating the error with such notice.

Bidding and contracting procedures shall conform to all applicable regulations and provisions of the *City of Hopewell Procurement Ordinance* effective July 1, 2005, as amended; a copy of which is available on the City Attorney's website (www.hopewellva.net) under the tab CODE, Hopewell city code. Click Chapter 2A-Procurement to view the Procurement Ordinance.



Shayna Jones Johnson
Business Manager

Please return the bids to the Office of the City Clerk, Second Floor, Municipal Building, 300 North Main Street, Hopewell, Virginia 23860. Regardless of delivery method of bid, the **outside** of each envelope must clearly indicate the following: *(if bid is delivered by Federal Express, UPS, USPS Priority, etc. or any other means, the outside of **each** envelope **must also** clearly indicate):*

Office of the City Clerk
Second Floor
Municipal Building
300 North Main Street
Hopewell, Virginia 23860
Closing Date of Bid: December 8, 2016
Commodity Name: Third-Party Auditor
Bid #: 07-17

In compliance with Invitation for Bid # 07-17 and subject to all conditions thereof and attached thereto, the undersigned offers and agrees if the Bid price and conditions will be accepted within ninety (90) calendar days from the date of opening to evaluate, to furnish any and all of the items upon which the prices are quoted, at the price set opposite each item, delivered at the points as specified and as scheduled.

NAME OF ORGANIZATION	TELEPHONE NUMBER
STREET ADDRESS	FAX NUMBER
CITY, STATE, ZIP CODE	EMAIL ADDRESS
NAME (TYPE OR PRINT)	OFFICIAL TITLE
SIGNATURE	DATE
STATE CORPORATION COMMISSION ID#	IRS I.D. #

VIRGINIA STATE CORPORATION COMMISSION FORM:

The bidder shall submit the State Corporation Commission Form (located on page 5) with their bid. If bid submission does not include this form, the bid will be considered non-responsive.

State Corporation Commission Form

Virginia State Corporation Commission ("SCC") registration information:

The undersigned Offeror:

is a corporation or other business entity with the following SCC identification number:

_____ **-OR-**

is not a corporation, limited liability company, limited partnership, registered limited liability partnership, or business trust **-OR-**

is an out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the Offeror in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from bidder's out-of-state location) **-OR-**

is an out-of-state business entity that is including with this bid an opinion of legal counsel which accurately and completely discloses the undersigned Offeror's current contacts with Virginia and describes why those contacts do not constitute the transaction of business in Virginia within the meaning of § 13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia.

****NOTE**** >> Check the following box if you have not completed any of the foregoing options but currently have pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wish to be considered for a waiver to allow you to submit the SCC identification number after the due date for proposals (the City reserves the right to determine in its sole discretion whether to allow such waiver):

Signature: _____

Date: _____

Name: _____
Print

Title: _____

Name of Firm: _____

GENERAL TERMS AND CONDITIONS

- A. **APPLICABLE LAWS AND COURTS**: This solicitation and any resulting contract shall be governed in all respects by the laws of the Commonwealth of Virginia and the City of Hopewell, Virginia; any litigation with respect thereto shall be brought in the courts of the City. The contractor shall comply with all applicable federal, state and local laws, rules and regulations. This compliance includes obtaining a City business license, if required, before work is performed.
- B. **EMPLOYMENT DISCRIMINATION/DRUG-FREE WORKPLACE BY CONTRACTOR**: By submitting the bids/proposals, the bidders/offerors certify to the City that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and §2.2-4311 of the *Virginia Public Procurement Act*. If the award is made to a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with the City to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the City. (Code of Virginia, § 2.2-4343.1E).

Every contract over Ten Thousand Dollars (\$10,000) shall include the provisions below. During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability or other basis prohibited by state law relating to discrimination employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.
2. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
3. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements of this section.
4. To provide a drug-free workplace for the contractor's employees.
5. To post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale,

distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition.

6. To state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace.

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

The contractor will include the provisions of the foregoing paragraphs 1, 2, 3, 4, 5 and 6 in every subcontract or purchase order over Ten Thousand Dollars (\$10,000) so that the provisions will be binding upon each subcontractor or vendor.

- C. **DIRECT TAXES:** All bids/proposals shall be submitted exclusive of direct federal, state, and local taxes. However, if the bidder/offeror believes that certain taxes are properly payable by the City, he may list such taxes separately in each case directly below the respective item bid/proposal price. Tax exemption certification will be furnished on request.
- D. **INDEMNITY:** All contractors agree to defend, indemnify and hold harmless, the City and its council, officers, employees, agents, and other representatives from and against any and all claims, damages, demands, losses, costs and expenses, including attorney's fees, and any other losses of any kind or nature whatsoever including claims for bodily injuries, illness, disease, or death and physical property loss or damage in favor of contractor, its sub-contractors, their employees, agents, and third parties arising during the performance of services and resulting from tort, strict liability, or negligent acts or omissions of contractor, its sub-contractors and their employees or agents under the agreement, or resulting from breaches of contract, whatever by statute or otherwise.
Each contractor shall assume the responsibility for damage to or loss of its material, equipment or facilities located at any site and, in order to affect this limitation of liability, each contractor will agree to insure or self-insure such property against any such risk.
- E. **SALES TAXES:** The City is exempt from payment of state sales and use tax on all tangible personal property purchased or leased for the City's use or consumption and a certificate of exemption will be furnished upon request.
- F. **QUOTATION FORM:** The bidder/offeror must sign and properly fill out all forms in this invitation for bid/proposal or be subject to being declared unresponsive. If unable to submit a bid/proposal, please sign and return this solicitation form, advising reason for no bid/proposal.

- G. **CONTRACTOR'S DEFAULT:** In case of default of a contractor, the City may procure the articles or service from other sources and hold the contractor responsible for any excess cost incurred.
- H. **COMPUTATION OF TIME FOR DISCOUNTS:** Time in connection with discount offered will be computed from date of delivery of the supplies or materials to carrier when final inspection and acceptance are at those points or from date correct invoice is received if latter is later than the date of delivery.
- I. **ETHICS IN PUBLIC CONTRACTING:** By submitting bids/proposals, the bidders/offerors certify that the bids/proposals are made without collusion or fraud and that the bidders/offerors have not offered or received any kickbacks or inducements from any other bidder/offeror, supplier, manufacturer or subcontractor in connection with the bid/proposal, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.
- J. **GOVERNMENTAL RESTRICTIONS:** In the event any governmental restrictions may be imposed which would necessitate alteration of the materials, quality, workmanship, or performance of the items offered in this bid/proposal prior to their delivery, it shall be the responsibility of the successful bidder/offeror to notify the City at once, indicating in writing the specific regulation which requires such alterations. The City reserves the right to accept any such alterations, including any price adjustments occasioned thereby, or to cancel the contract.
- K. **IMMIGRATION REFORM AND CONTROL ACT OF 1986:** By entering into a written contract with the City, the contractor will certify that the contractor does not, and shall not during the performance of the contract for goods and services in or for the City, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.
- L. **DEBARMENT STATUS:** By submitting bids/proposals, the bidders/offerors certify that they are not currently debarred by the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.
- M. **ANTITRUST:** By entering into a contract, the contractor will convey, sell, assign, and transfer to the City all rights, title and interest in and to all causes of action they may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the City under said contract.
- N. **PAYMENT:** Payment by the City is due thirty days (30) after delivery is made to the City and inspected unless otherwise specifically provided: subject to any discounts allowed.

To Prime Contractor:

Invoices for items ordered, delivered and accepted shall be submitted by the contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the contract number and/or purchase order number, social security number (for individual contractors) or the federal employer identification number (for proprietorships, partnerships, and corporations).

All goods or services provided under this contract or purchase order, that are to be paid for with public funds, shall be billed by the contractor at the contract price, regardless of which public agency is being billed.

The following shall be deemed to be the date of payment: the date of postmark in all cases where payment is made by mail, or the date of offset when offset proceedings have been instituted as authorized.

Unreasonable Charges: Under certain emergency procurements and for most time and material purchases, final job costs cannot be accurately determined at the time orders are placed. In such cases, contractors should be put on notice that final payment in full is contingent on a determination of reasonableness with respect to all invoiced charges. Charges, which appear to be unreasonable, will be researched and challenged, and that portion of the invoice held in abeyance until a settlement can be reached. Upon determining that invoiced charges are not reasonable, the City shall promptly notify the contractor, in writing, as to those charges, which it considers unreasonable, and the basis for the determination. A contractor may not institute legal action unless a settlement cannot be reached within thirty (30) days of notification.

To Subcontractors:

A contractor awarded a contract under this solicitation is hereby obligated:

1. To pay the subcontractor(s) within seven (7) days of the contractor's receipt of payment from the City for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or
2. To notify the City and the subcontractor(s), in writing, of the contractor's intention to withhold payment and the reason.
3. The contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed by the contractor that remain unpaid seven (7) days following receipt of payment from the City, except for amounts withheld as stated in (2) above. The date of mailing of any payment by U. S. Mail is deemed to be payment to the addressee. These provisions apply to each sub-tier contractor performing under the primary contract. A contractor's obligation to pay an interest charge to a

subcontractor may not be construed to be an obligation of the City.

- O. **PRECEDENCE OF TERMS**: Paragraphs A-N of these General Terms and Conditions shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions in this solicitation, the Special Terms and Conditions shall apply.
- P. **TESTING AND INSPECTION**: The City reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.
- Q. **ASSIGNMENT OF CONTRACT**: A contract shall not be assignable by the contractor in whole or in part without the written consent of the City.
- R. **CHANGES TO THE CONTRACT**: Changes can be made to the contract in any of the following ways:
1. The parties may agree in writing to modify the scope of the contract. An increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.
 2. The Purchasing Department may order changes within the general scope of the contract at any time by written notice to the contractor. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The contractor shall comply with the notice upon receipt. The contractor shall be compensated for any additional costs incurred as the result of such order and shall give the Purchasing Department a credit for any savings. Said compensation shall be determined by one of the following methods:
 - a. By mutual agreement between the parties in writing; or
 - b. By agreeing upon a unit price or using a unit price set forth in the contract, if the work to be done can be expressed in units, and the contractor accounts for the number of units of work performed, subject to the Purchasing Department's right to audit the contractor's records and/or to determine the correct number of units independently; or
 - c. By ordering the contractor to proceed with the work and keep a record of all costs incurred and savings realized. A markup for overhead and profit may be allowed if provided by the contract. The same markup shall be used for determining a decrease in price as the result of savings realized. The contractor shall present the Purchasing Department with all vouchers and records of expenses incurred and savings realized. The Purchasing Department shall have the right to audit the records of the contractor, as it deems necessary to determine costs or savings. Any

claim for an adjustment in price under this provision must be asserted by written notice to the Purchasing Department within thirty (30) days from the date of receipt of the written order from the Purchasing Department. If the parties fail to agree on an amount of adjustment, the question of an increase or decrease in the contract price or time for performance shall be resolved in accordance with the procedures for resolving disputes provided by the Disputes Clause of this contract or, if there is none, in accordance with the disputes provisions of the Virginia Public Procurement Act. Neither the existence of a claim nor a dispute resolution process, litigation or any other provision of this contract shall excuse the contractor from promptly complying with the changes ordered by the Purchasing Department or with the performance of the contract generally.

- S. **DEFAULT:** In case of failure to deliver goods or services in accordance with the contract, the City, after due oral or written notice, may procure them from other sources and hold the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies that the City may have.
- T. **AUTHORIZATION TO TRANSACT BUSINESS IN THE COMMONWEALTH:** A contractor organized as a stock or non-stock corporation, limited liability company, business trust, limited partnership, or other entity, or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia or as otherwise required by law. Any business entity described above that enters into a contract with the City pursuant to the Virginia Public Procurement Act shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the contract. The City may void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section.
- U. **INSURANCE:** All contractors shall secure and maintain in force, at their own expense all required forms of insurance and payment bonds to insure the completion for the work under contract to the satisfaction of the City and without damage to, or claims against, the City. The contractor shall provide satisfactory evidence of bonds and insurance on behalf of the sub-contractors, before entering into an agreement to sublet any part of the work to be done under the contract.

The following performance and payment bonds and forms of insurance shall be secured by the contractor to cover all work under contract and to protect the contractor, the City, and general public against any damage or claims in connection with the performance of the contract. The bonds and insurance shall be by companies duly authorized to do business in the Virginia. Certificates of insurance, naming the City as an additional insured for each type of coverage shall be required.

At the discretion of the City's purchasing agent, bidders/offerors may be required to

submit with their bid/proposal a bid/proposal bond, or a certified check, in an amount to be determined by the purchasing agent, which shall be forfeited to the City as liquidated damages upon the bidder's/offeror's failure to execute a contract awarded or upon the bidder's/offeror's failure to furnish any required performance or payment bonds in connection with a contract awarded.

At the discretion of the purchasing agent, the winning contractor(s) may be required to submit a performance and payment bond to the City which shall be evoked upon contractor's failure to execute a contract awarded or the failure to satisfactorily complete work for which a contract or purchase order was awarded. Performance bond and payment bond in the amount of one hundred (100) percent of contract price will be required as security of contract, or security for payment of all persons performing labor and furnishing materials in connection with the contract, and protecting the City from all damages or claims resulting from, or in connection with the performance of the contract or purchase order.

The performance bond and payment bond shall bind the surety company to protect the City from damages, claims or costs by failure of the contractor to make corrective action due to financial solvency or for any other cause whatever.

INSURANCE COVERAGES AND LIMITS REQUIRED:

1. Worker's Compensation - Statutory requirements and benefits; require that the City of Hopewell, Virginia be added as an additional named insured on contractor's policy.
2. Employers Liability - \$500,000.
3. Comprehensive general liability for bodily injury liability and property damage liability shall be provided as to limits specified.
4. Contractor's protective liability shall be provided for bodily injury liability and property damage liability.
5. Fire and extended coverage shall be provided on the completed builder risk form if specified in bid specifications.
6. The contractor shall require each subcontractor to carry Workers' Compensation Insurance and public liability and property damages liability.
7. Commercial General Liability - \$1,000,000 combined single limit. The City of Hopewell, Virginia is to be named as an additional named insured with respect to the services being procured. This coverage is to include Products and Completed Operations Coverage.

8. Automobile Liability – bodily injury and property damage shall be provided as to limits set forth in the contract specifications.

The contractor shall execute and deliver to the City copies of all insurance certificates.

Executed copies of the performance bond shall become a part of all copies of the contract.

SPECIAL TERMS AND CONDITIONS

- A. **ADVERTISING**: In the event a contract is awarded for supplies, equipment, or services resulting from a bid/proposal, no indication of such sales or services to the City will be used in product literature or advertising. The contractor shall not state in any of its advertising or product literature that the City or any department or institution of the City has purchased or used the products or services.
- B. **AUDIT**: The contractor shall retain all books, records, and other documents relative to this contract for five (5) years after final payment, or until audited by the City, whichever is sooner. The City, its authorized agents, and/or state auditors shall have full access to and the right to examine any of said materials during said period.
- C. **AWARD OF CONTRACT**: Any award will be made to the lowest responsive and responsible bidder/offeror. Evaluation will be based on net prices. Unit prices, extensions and grand total must be shown. In case of arithmetic errors, the unit price will govern. If cash discount for prompt payment is offered, it must be clearly shown in the space provided. Discounts for prompt payment will not be considered in making awards. The City reserves the right to reject any and all bids/proposals in whole or in part, to waive any informality, and to delete items prior to making an award.
- D. **BID/PROPOSAL ACCEPTANCE PERIOD**: Any bid/proposal in response to this solicitation shall be valid for 90 days. At the end of the 90 days the bid/proposal may be withdrawn at the written request of the bidder/offeror. If the bid/proposal is not withdrawn at that time it remains in effect until an award is made or the solicitation is canceled.
- E. **CANCELLATION OF CONTRACT**: The City reserves the right to cancel and terminate any resulting contract, in part or in whole, without penalty, upon 30 days written notice to the contractor. In the event the initial contract period is for more than 12 months, the contract may be terminated by either party, without penalty, after the initial 12 months of the contract period upon 30 days written notice to the other party. Any contract cancellation notice shall not relieve the contractor of the obligation to deliver and/or perform on all outstanding orders issued prior to the effective date of cancellation.
- F. **EXTRA CHARGES NOT ALLOWED**: The bid/proposal price shall be for complete

installation ready for the City's use, and shall include all applicable freight and installation charges; extra charges will not be allowed.

G. MINORITY/WOMEN-OWNED BUSINESSES SUBCONTRACTING AND REPORTING:

Where it is practicable for any portion of an awarded contract to be subcontracted to other suppliers, the contractor is encouraged to offer such business to minority and/or women-owned businesses. Names of firms may be available from the City. When such business has been subcontracted to minority or women-owned businesses, upon completion of the contract the contractor agrees to furnish the City the following information: name of business, address, phone number, total dollar amount subcontracted and type of product/service provided.

H. PREPARATION AND SUBMISSION OF BIDS/PROPOSALS:

Bids/proposals must give the full business address of the bidder/offeror and be signed by the bidder's/offeror's authorized signature. Bids/proposals by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or any authorized representative, followed by the designation of the person signing. Bids/proposals by corporations must be signed with the legal name of the corporation followed by the name of the state in which it is incorporated and by the signature and designation of the president, secretary, or other person authorized to bind the corporation. The name of each person signing shall also be typed or printed below the signature. A bid/proposal by a person, who affixes to the signature the word "President," "Secretary," "Agent" or other designation without disclosing the principal, may be held to be the bid/proposal of the individual signing. When requested by the City or other entity, satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.

I. WITHDRAWAL OR MODIFICATION OF BIDS/PROPOSALS:

Bids/proposals may be withdrawn or modified by written notice received from bidders/offerors prior to the deadline fixed for bid/proposal receipt. The withdrawal or modification may be made by the person signing the bid/proposal or by an individual who is authorized on the face of the bid. Written modifications may be made on the bid/proposal form itself, on the envelope in which the bid/proposal is enclosed, or on a separate document. Written modifications, whether the original is delivered, or transmitted by facsimile, email, or otherwise, must be signed by the person making the modification or withdrawal.

J. RECEIPT AND OPENING OF BIDS/PROPOSALS:

It is the responsibility of the bidder/offeror to assure that the bid/proposal is delivered to the place designated for receipt of bids/proposals and prior to the time set for receipt of bids/proposals. Bids/proposals received after the time designated for receipt of bids/proposals will not be considered. Bids/proposals will be opened at the time and place advertised, and their contents made public for the information of bidders/offerors and others interested who may be present either in person or by representative. The officer or agent of the City, whose duty it is to open bids/proposals, will decide when the specified time has arrived. No responsibility will be attached to any officer or agent for the premature

opening of a bid/proposal not properly addressed and identified.

K. NEGOTIATION WITH THE LOWEST BIDDER: Unless all bids are cancelled or rejected, the City reserves the right granted by §2.2-4318 of the *Code of Virginia* to negotiate with the lowest responsive, responsible bidder to obtain a contract price within the funds available to the agency whenever such low bid exceeds the City's available funds. For the purpose of determining when such negotiations may take place, the term "available funds" shall mean those funds which were budgeted to and by the agency for the contract prior to the issuance of the written solicitation. Negotiations with the low bidder/offeror may include both modifications of the bid price and the scope of work/specifications to be performed. The City shall initiate such negotiations by written notice to the lowest responsive, responsible bidder/offeror that its bid exceeds the available funds and that the City wishes to negotiate a lower contract price. The times, places, and manner of negotiating shall be agreed to by the City and the lowest responsive, responsible bidder/offeror.

**Request for Qualifications for a Third-Party Auditor
With Expertise in Environmental Auditing and with the Federal
Clean Air Act and 40 CFR Part 63 Subpart S (Pulp and Paper MACT)**

Hopewell Water Renewal (H2O Renewal)

Scope of Work

Overview

This is a request for qualifications (RFQ) from experienced professional engineering firms with expertise in environmental auditing and with the Federal Clean Air Act (CAA) and 40 CFR Part 63 Subpart S (Pulp and Paper Maximum Achievable Control Technology). Under Subpart S, H2O Renewal is required to treat hazardous air pollutants (HAP) from the WestRock pulp and paper mill in its high purity oxygen aeration basin (UNOX) to meet a 92% methanol reduction standard.

Due to 2010 violations of the 92% methanol reduction standard, H2O Renewal signed the Administrative Compliance Order on Consent (consent agreement) with U.S. EPA on September 30, 2016 (copy attached for reference). The consent agreement requires the Facility to retain a third-party audit contractor that will conduct an audit in accordance with the procedures outlined in the scope of work if the Facility is out of compliance with the 92% HAP reduction standard during more than three events in eight months. An "event" is defined as a single occurrence, omission or act (or related group of such occurrences, omissions or acts) that gives rise to one or more days of violation of the 92% HAP reduction standard.

The Audit Firm must have expertise in environmental auditing and with the federal CAA and its implementing regulations promulgated in 40 C.F.R Part 63 Subpart S ("Pulp and Paper MACT"). During the course of the audit, the Audit Firm shall become familiar with the H2O Renewal's Title V permit, and with the Facility's industrial wastewater treatment system, including but not limited to, the UNOX treatment system, as shown in the schematic attached to this solicitation.

Neither the Audit Firm, nor any person presently employed by the firm, shall have been employed by the Facility to conduct an environmental audit or any other environmental compliance-related activities at the Facility with respect to CAA compliance within the past five years. In addition, the Audit Firm, nor any person presently employed by the firm, shall have been employed by the Facility to conduct an environmental audit or any other environmental compliance-related activities at the Facility with respect to compliance with any other environmental law at any time during the past two years. The Audit Firm must sign a certification to this effect.

Facility Description

H2O Renewal is a 50 MGD POTW receiving 80% industrial wastewaters from five significant industrial users (a pulp and paper mill, three organic chemical manufacturing facilities, and a water treatment plant). Domestic waste from the City of Hopewell, Fort Lee and parts of Prince George County is discharged to the City's domestic preliminary treatment train for disinfection prior to mixing with the industrial waste. The plant discharges to Gravelly Run in Hopewell, which is a tributary to the tidal fresh water portion of the James River.

Project Scope

1. General Provisions. If H2O Renewal is out of compliance with the 92% HAP reduction standard set forth in 40 C.F.R. § 63.446(e) (2-3) for three (3) events in eight months, the Facility must conduct a third-party audit of the Facility. One event is a single or multiple day violation of the 92% HAP reduction standard due to the same contributing cause(s) identified by the root cause analysis conducted by the Facility in accordance with the consent agreement.

2. Each audit shall include an evaluation of the Facility's UNOX system, any other affected units at the Facility, and other compliance requirements, including, but not limited to, an evaluation of the Facility's: (a) operating procedures and practices; (b) maintenance procedures and practices; (c) monitoring, recordkeeping and reporting procedures and practices, in order to evaluate the Facility's current compliance with its Title V permit for the Facility, the Hopewell Water Renewal Prevention, Maintenance, Operation and Notification ("PMON") Plan approved by EPA, and the consent agreement.

3. Each audit shall be conducted by an independent environmental auditing firm ("Audit Firm") retained by the Facility. Upon completion of the third-party audit, the Audit Firm shall submit a written final report of its findings and recommendations to the Facility and EPA, in accordance with the consent agreement.

4. The requirements of this Scope of Work relating to the Audit Firm's qualifications, authority to conduct the audits, and production of the final audit report shall be incorporated into any contracts relating to the audits entered into by the Facility and the Audit Firm(s).

5. Because these audits are required by the consent agreement, any violations discovered pursuant to the audits are not "voluntarily discovered" within the terms of EPA's revised "Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations Policy" ("Audit Policy"), and are not voluntarily disclosed to EPA under EPA penalty policies. Accordingly, any such violations are ineligible for penalty mitigation or other favorable treatment under the Audit Policy or any EPA penalty policies on that basis. The Facility has agreed not to attempt to use any audit

and/or privilege laws under the Commonwealth of Virginia to restrict EPA's ability to obtain, review, or use the audit report(s) in any federal compliance or enforcement action.

6. Work Plan. Within 10 days, of an event triggering the requirement to complete an Audit, the Audit Firm shall submit to EPA a proposed audit work plan ("Work Plan") written by the Audit Firm for EPA review and approval. The proposed Work Plan shall include auditing protocols, procedures, and specific tasks for the audit, but not restrict the Audit Firm from conducting such additional inquiries as may be necessary to accomplish the purpose of the audit. The proposed Work Plan shall also include the schedule for performing the audit, and the names and resumes of the Audit Firm employees who will perform it.

7. EPA shall have 10 days from the date of receipt of the Work Plan, or any revised Work Plan, to approve or comment on it. If EPA does not provide written comments to the Facility regarding the original or any revised Work Plan within this 10-day period, the Work Plan shall be deemed approved by EPA. If EPA comments on the Work Plan or any revised work plan, the Facility shall incorporate the comments and submit a revised Work Plan to EPA within seven days after receiving the comments.

8. Audit Performance. Within seven days of EPA's approval of the Work Plan, the Audit Firm shall commence the audit, which shall be performed in accordance with the approved Work Plan.

9. The Audit Firm shall have full access to, and unrestricted review of, any of the Facility's records, documents and information that will assist the Audit Firm in determining the Facility's current compliance with the listed statutes and regulations and the environmental permits. If necessary, the Audit Firm shall also review publicly available state or federal records to determine the Facility's compliance status.

10. The Audit Firm shall perform at least one on-site inspection at the Facility, and shall have access to all units, areas, equipment, and structures at the Facility during the inspection, and at all other times during normal operating hours. In its discretion, EPA may accompany the Audit Firm during the firm's inspection. At least seven days prior to any inspection conducted by the Audit Firm, the Facility must provide notice to EPA of the inspection.

11. The Audit Firm shall observe and review the Facility's operations, including the actual UNOX control operation, parametric operating and monitoring records and maintenance procedures at the Facility, and may request that testing, sampling or other procedures be performed as needed to determine the Facility's present compliance with the CAA and 40 C.F.R Part 63 Subpart S and its Title V permit. The Facility and the Audit Firm shall arrange for the requested testing, sampling or other procedures to be conducted. If the Facility itself performs any of the requested procedures, EPA shall be given the opportunity to observe and review them. The

Facility must provide notice at least seven days prior to EPA of any requested procedures conducted by the Facility.

12. If in the course of performing the audit or hazard assessment, the Audit Firm discovers a condition at the Facility that, in the Audit Firm's independent judgment, constitutes an imminent and substantial endangerment to human health or the environment, the Audit Firm shall immediately notify the Facility and EPA of the condition. The Facility shall immediately address and ameliorate the condition and immediately consult with EPA as to how best to eliminate it.

13. Audit Report. Within 45 days after EPA's approval of the Work Plan, the Audit Firm shall complete the audit and deliver a written final audit report ("Final Report") to the Facility and EPA.

14. The Final Report shall describe in details the results of the audit, including, but not limited to, the following:

- a. The procedures followed and the information consulted and evaluated during the audit;
- b. The Facility's current compliance obligations at the Facility with regards to the CAA and 40 C.F.R Part 63 Subpart S and the Facility's Title V permit;
- c. The Facility's current compliance status at the Facility with regard to the CAA and 40 C.F.R Part 63 Subpart S and the Facility's Title V permit;
- d. Any potential noncompliance identified by the Audit Firm or the Facility during the course of the audit that was corrected prior to the issuance of the Final Report, including the date(s) on which the noncompliance commenced and was corrected;
- e. Recommendations for potential improvements or modifications to the Facility's UNOX system or operating practices and procedures at the Facility to ensure compliance with the CAA and 40 C.F.R Part 63 Subpart S and the Facility's Title V permit; and
- f. Any other information relating to the Facility's compliance with the CAA and 40 C.F.R Part 63 Subpart S and the Facility's Title V permit that in the judgment of the Audit Firm merits review by EPA or the Facility.

15. The Facility shall address and fully correct as soon as possible any potential noncompliance identified in the Final Report. Within 30 days after receiving the Final Report, the Facility shall provide written notice to EPA describing what actions the Facility has taken and/or will take to fully correct the noncompliance. If these actions will extend further than 30 days from the receipt of the Final Report, the Facility shall include in the written notice a detailed schedule for fully correcting the noncompliance.

16. If the Facility believes that any identified potential noncompliance in the Final Report does not constitute actual noncompliance, the Facility shall, as part of the

written notice required in the consent agreement, provide to EPA a detailed explanation of the Facility's views.

17. Effect of Final Reports and Audits. Nothing in this Scope of Work or elsewhere in the consent agreement shall be construed as an adoption of or an approval by the United States, EPA of any opinions, findings, conclusions, or other asserted facts or statements contained in the Final Reports, or of any actions taken by the Facility in response to the Final Report. The United States fully reserves its rights, in accordance with the terms of the consent agreement, to address any noncompliance discovered through the audits. The completion and submission of the Final Reports shall not be construed as an admission, adoption, or approval by the Facility of any opinions, findings, conclusions, or other statements contained in the Final Reports.

Evaluation and Selection

Submittal Due Date

To be considered, three sealed copies of your statement of qualifications must be received at the Office of the City Clerk, Second Floor, Municipal Building, 300 North Main Street, Hopewell, Virginia 23860 by Thursday, December 8, 2016 at 11:00 a.m. Submittals received after 11:00 a.m. local time will be accepted only if it can be documented that the delay was due to a third-party delivery problem.

Selection Process

Each submittal will be reviewed by an H2O Renewal selection committee to insure compliance with the services and expertise required by the RFQ. Based on the criteria set forth below, each submittal will be scored and ranked accordingly. The top ranking responders will be selected for an interview by the selection committee. Following the interview process, a determination will be made as to the suitability of the responder to provide the necessary service. With the recommendation of the selection committee, the Director will select the top firm for negotiation. The project scope, schedule and cost will be presented by the selected responder. If the Director and the selected responder fail to reach an agreement on the project scope, schedule and cost, then negotiations will be opened with the second ranking responder.

Each submitter is encouraged to provide for the participation of small, women-owned, minority-owned, and service disabled veteran-owned business through partnership, joint ventures, subcontracts and other contractual opportunities.

Selection Criteria

Criteria	Maximum Points
1. Experience of firm and subconsultants on similar projects.	25
2. Organization of firm and subconsultants including location of personnel.	5
3. Program understanding and approach.	15
4. Demonstrated ability to meet schedules.	15
5. Demonstrated ability to stay within budget	15
6. Experience with and knowledge of CAA and 40 CFR Part 63 Subpart S	25
Total Points	100

Statement of Qualifications

The statement of qualifications must contain detailed information to address the project scope of this RFQ. Firms will be evaluated on the responsiveness to the RFQ in clearly stating an understanding of the type of work involved. The submittal should include the following information and should be presented in the order outlined below:

1. Qualifications:
 - a. General description of the firm and subconsultants
 - b. Experience of firm and subconsultants on similar projects (Limit to five projects).
 - c. Proposed organization of firm and subconsultants. Indicated proposed team member involvement and provide an Owner reference.
 - d. Identification, location, qualifications, and experience of project manager and principal project team members including subconsultants. Provide short form resumes and a maximum of five reference project descriptions in Appendices. Indicate involvement of proposed team members in each reference project.
 - e. Demonstrated ability to meet schedules. List a maximum of three projects providing such information that describe how these timeframes were met.
 - f. Demonstrated ability to stay within budget. List a maximum of three projects providing such information as original total project budget, Firm's estimate and reason for any change orders or all other issues affecting the overall project cost.
2. Program understanding, technical approach, and project management process to be used.
3. Appendices:
 - a. References (point of contact and information should be current)
 - b. Company literature providing general information on responder to include company name, office location(s), officers and personnel by discipline and office location.

Questions During Selection Process

All questions should be sent electronically as follows:

1. Administrative questions shall be addressed to Shayna Johnson, Business Manager, at sjohnson@hopewellva.gov.
2. Technical questions shall be addressed to Jeanie Grandstaff, Director, at jgrandstaff@hopewellva.gov.

All questions pertaining to this Request for Qualifications must be received in writing at the aforementioned email addresses by 5:00 PM on Tuesday, November 15, 2016 and will be answered via addendum after Friday, November 18, 2016.

APPENDIX A

**Final Signed Consent Agreement &
Federal Operating Permit #PRO50735**

In the Matter of:

*Administrative Compliance Order
on Consent*

*City of Hopewell, Virginia
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“POTW NESHAP”); promulgated pursuant to Section 112(d) of the CAA, 42 U.S.C. § 7412(d); Title V of the CAA, 42 U.S.C. §§ 7661-7661(f); Title V’s federal implementing regulations, 40 C.F.R. Part 70; Virginia’s federally enforceable Title V program, entitled “Federal Operating Permits for Stationary Sources,” 9 VAC 5 Chapter 80, Part II, Article 1; and permits issued thereunder.

Respondent signs this Consent Order.

II. FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. Respondent is the owner and operator of Hopewell Water Renewal (formerly Hopewell Regional Wastewater Treatment Facility), a wastewater treatment facility, located at 231 Hummel Ross Road, Hopewell Virginia 23860 (“Facility”).
2. Respondent is the owner and operator of the Facility.
3. Hopewell is an independent, chartered city, incorporated under the laws of the Commonwealth of Virginia.
4. Respondent is a “municipality” within the meaning of Section 302(f) of the CAA, 42 U.S.C. § 7602(f).
5. Respondent is a “person” within the meaning of Section 302(e) of the CAA, 42 U.S.C. § 7602.
6. The Facility operates pursuant to a Title V operating permit, Permit No. 50735, issued January 9, 2002 and renewed October 2, 2014 (the “Title V Permit”).

Failure to Conduct Daily Monitoring of Approved Parameter Values

7. Pursuant to 40 C.F.R. § 63.1580(a), a publically owned treatment works (“POTW”) is subject to the POTW NESHAP if, inter alia: (1) the POTW includes an “affected source,” as defined by 40 C.F.R. § 63.1595; (2) the affected source is located at a POTW that is a major source of hazardous air pollutant (“HAP”) emissions or is located at any industrial POTW, regardless of whether or not it is a major source of HAP emissions; and (3) the POTW is required to develop and implement a pretreatment program, as defined by 40 C.F.R. § 403.8.
8. The Facility treats domestic and industrial wastewater. The Facility has a design flow rate of 50 million gallons per day.
9. The Facility was, at all times relevant, a “stationary source,” as defined at 40 C.F.R. § 63.2.

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10. Respondent, at all times relevant to this Consent Order, was an "owner or operator" of a stationary source, as defined by 40 C.F.R. § 63.2.
11. The Facility is a POTW, within the meaning of 40 C.F.R. § 63.1595.
12. The Facility includes an affected source, within the meaning of 40 C.F.R. § 63.1595.
13. As defined by Section 112(a)(1) of the CAA, 42 U.S.C. § 7412(a), "major source" means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAPs.
14. At all times relevant to Consent Order, the Facility has had the potential to emit at least 10 tons per year of methanol, a listed HAP in Section 112 of the CAA.
15. The Facility is a "major source" as defined by Section 112(a)(1) of the CAA, 42 U.S.C. § 7412(a).
16. As defined by 40 C.F.R. § 63.1595, an industrial POTW means a POTW that accepts a waste stream regulated by an industrial NESHAP and provides treatment and controls as an agent for the industrial discharger.
17. The Facility treats wastewater from industrial users, including wastewater from the pulp and paper mill located at 910 Industrial Street, Hopewell, Virginia, 23860 (VADEQ Reg. No. 50370), owned and operated by WestRock CP, LLC (formerly RockTenn CP, LLC) (the "WestRock Facility").
18. The Facility is an industrial POTW, within the meaning of 40 C.F.R. § 63.1595.
19. The Facility is required to develop and implement a pretreatment program, as defined by 40 C.F.R. § 403.8.
20. The Facility is subject to the POTW NESHAP (40 C.F.R. Part 63, Subpart VVV, §§ 63.1580-1595).
21. On July 7, 2009, EPA issued a Notice of Violation ("NOV") to Hopewell and the Hopewell Water Renewal Commission (formerly, Hopewell Regional Wastewater Treatment Commission) (the "Commission"), through the Hopewell City Attorney, for violations of the CAA Title V Permit for the Facility, and for violations of the Virginia State Implementation Plan ("SIP") at the Facility, pursuant to Section 113(a)(1) and (a)(3) of the CAA, 42 U.S.C. § 7413(a)(1) and (a)(3).

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22. On July 7, 2009, EPA issued a Finding of Violation ("FOV") to Hopewell and the Commission, through the Hopewell City Attorney, for violations of the POTW NESHAP, promulgated under Section 112 of the CAA, 42 U.S.C. § 7412, pursuant to section 113(a)(3) of the CAA, 42 U.S.C. § 7413(a).
23. On December 17, 2010, EPA issued another NOV to Hopewell and the Commission, through the Hopewell City Attorney, for violations of the Title V Permit for the Facility, and for violations of the Virginia SIP at the Facility, pursuant to Section 113(a)(1) and (a)(3) of the CAA, 42 U.S.C. § 7413(a)(1) and (a)(3).
24. More than 30 days have elapsed since the issuance of the NOVs and FOV referred to in the preceding paragraphs.
25. Pursuant to 40 C.F.R. § 63.1582(c), the Facility is subject to all the requirements of the Pulp and Paper NESHAP (40 C.F.R. Part 63, Subpart S, §§ 63.440-63.459) for the WestRock Facility's waste stream.
26. Pursuant to 40 C.F.R. § 63.446(e), pulping process condensates from digester systems, turpentine recovery systems, high volume low concentration ("HVLC") collection systems, and low volume high concentration ("LVHC") collection systems must be treated in accordance with one of five listed options.
27. The Facility treats pulping process condensate from the WestRock Facility's turpentine recovery system.
28. To comply with 40 C.F.R. § 63.446(e), the Facility is required to discharge the pulping process condensate below the liquid surface of a biological treatment system and treat the condensate to reduce or destroy the total HAPs by 92% or more by weight, and total HAPs shall be measured as specified in 40 C.F.R. § 63.457(g). 40 C.F.R. § 63.446(e)(2)&(3). *See also* Title V Permit, Conditions in Paragraphs 34 and 35.
29. Owners and operators using a biological treatment system to comply with 40 C.F.R. § 63.446(e)(2) may perform daily monitoring of site-specific parameters, established according to the procedures specified in 40 C.F.R. § 63.453(m) - (n), in order to comply with the monitoring requirements of 40 C.F.R. § 63.453.
30. When alternative site-specific parameters are used, owners and operators must install a continuous monitoring system and establish appropriate operating parameters to be monitored that demonstrate, to the Administrator's satisfaction, continuous compliance with the applicable control requirements. 40 C.F.R. § 63.453(m). *See also* Title V Permit, Condition in Paragraph 39.

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31. Pursuant to 40 C.F.R. §63.453(n), to establish appropriate parameters for 40 C.F.R. § 63.453(j)(2) and (m), and to establish the value for each operating parameter required to be monitored under 40 C.F.R. § 63.453(j) and (m), each owner and operator must use the following procedures:

- a) During the initial performance test required in 40 C.F.R. § 63.457(a) or any subsequent performance test, continuously record the operating parameter;
- b) Determinations shall be based on the control performance and parameter data monitored during the performance test, supplemented if necessary by engineering assessments and the manufacturer's recommendations;
- c) The owner or operator shall provide for the Administrator's approval the rationale for selecting the monitoring parameters necessary to comply with paragraph ... (m) of this section; and
- d) Provide for the Administrator's approval the rationale for the selected operating parameter value, and monitoring frequency, and averaging time. Include all data and calculations used to develop the value and a description of why the value, monitoring frequency, and averaging time demonstrate continuous compliance with the applicable emission standard.

32. On February 5, 2001, July 25, 2001, and September 25, 2001, Respondent submitted to EPA an Alternative MACT Compliance Monitoring Proposal and supplementary information, which requested approval for the use of alternative monitoring parameters to meet the requirements of 40 C.F.R. § 63.453(m).

33. On February 23, 2003, EPA approved the following alternative monitoring parameters: UNOX System oxygen supply flow rate; horsepower of UNOX System aerators; regulated wastewater inlet flow to UNOX System; total inlet liquid flow to UNOX system. Additionally oxygen vent purity in the UNOX system must be maintained at less than or equal to 96%, which is consistent with normal operations. *See also* Title V Permit, Conditions in Paragraphs 39 and 40.

34. EPA's approval further stated that: "The operating range of each of the above [parameters] will be based on the results of the initial performance test. These compliance monitoring parameters will be measured and limits will be established based on the results of the initial performance test. These compliance monitoring parameter limits will be used to indicate on-going compliance."

35. In October 2001, the Facility conducted an initial performance test and established the following as the operating parameter values that demonstrate continuing compliance: UNOX

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System oxygen supply flow rate: the minimum value indicating compliance is 81.48 tons per day; horsepower of UNOX System aerators: the minimum value indicating compliance is 1200 horsepower; regulated wastewater inlet flow to UNOX System: the maximum value indicating compliance is 0.59 million gallons per day; and total inlet liquid flow to UNOX system: the maximum value indicating compliance is 27.45 million gallons per day.

36. In its December 2001 Notice of Compliance Status, Respondent stated that additional values also indicate compliance with the applicable emission standard of 92% HAP reduction, based on historic data, engineering assessments, and Facility design capacity. The operating parameter values that Respondent claimed to demonstrate continuing compliance are as follows: UNOX System oxygen supply flow rate: the minimum value indicating compliance is 74.5 tons per day; horsepower of UNOX System aerators: the minimum value indicating compliance is 525 horsepower; regulated wastewater inlet flow to UNOX System: the maximum value indicating compliance is 1 million gallons per day; and total inlet liquid flow to UNOX system: the maximum value indicating compliance is 50 million gallons per day.

37. The Facility MACT Compliance Plan for the UNOX Closed Biological Treatment System, submitted to the Virginia Department of Environmental Quality ("VADEQ") on December 12, 2001, lists the values from the December 2001 Notice of Compliance Status – not the approved values from the October 2001 initial performance test – as the monitoring parameter values that indicate continuous compliance with the applicable emission standard of 92% HAP reduction, set forth in 40 C.F.R. § 63.446(e)(2) and (3). The Facility considers the December 2001 parameter values, not the October 2001 parameter values, as the values to indicate compliance with 40 C.F.R. § 63.446(e)(2).

38. Respondent did not seek the Administrator's approval of the December 2001 operating parameter values, the data and calculations used to develop those values, or a description of why those values demonstrate continuous compliance with the applicable emission standard of 92% HAP reduction, set forth in 40 C.F.R. § 63.446(e)(2) and (3).

39. Accordingly, Respondent has not obtained the necessary approval from EPA for the site-specific parameter values continuously utilized by Respondent since December 2001 in monitoring the Facility's compliance, and therefore has not monitored compliance in accordance with the approved parameters as required by 40 C.F.R. § 63.453(n) at any point in time since December 2001 to the present.

40. Thus, Respondent has failed to conduct daily monitoring of site-specific parameters established according to the procedures specified in 40 C.F.R. § 63.453(n), in violation of 40 C.F.R. § 63.453(j)(2).

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Failure to Comply with Condensate Treatment Standards

41. Pursuant to 40 C.F.R. § 63.446(e), pulping process condensates from digester systems, turpentine recovery systems, HVLC collection systems, and LVHC collection systems must be treated in accordance with one of five listed options.
42. The Facility treats pulping process condensate from WestRock Facility's turpentine recovery system.
43. To comply with 40 C.F.R. §63.446(e), the Facility is required to discharge the pulping process condensate below the liquid surface of a biological treatment system and treat the condensate to reduce or destroy the total HAPs by 92% or more by weight, and total HAPs shall be measured as specified in 40 C.F.R. § 63.457(g). 40 C.F.R. § 63.446(e)(2)&(3). *See also* Title V Permit, Conditions in Paragraphs 34 and 35.
44. The Facility's July 16, 2010 Title V Semi-Annual Monitoring Report, covering the period January 1 – June 30, 2010, reported 32 days of excess emissions, in which the Facility failed to reduce or destroy total HAPs by 92% or more by weight, in violation of 40 C.F.R. § 63.446(e)(3) and Title V Permit, Condition in Paragraph 35.
45. Each of the violations of the Pulp and Paper NESHAP and the Facility's Title V Permit constitutes a violation of Section 113 of the Act, 42 U.S.C. § 7413.

III. ORDER TO COMPLY

46. Based upon the Findings of Fact and Conclusions of Law recited above, Respondent has violated the Pulp and Paper NESHAP and the Facility's Title V Permit, and is therefore in violation of the Act.
47. In order to bring Respondent into compliance with the POTW NESHAP, the Pulp and Paper NESHAP, and the Facility's Title V Permit with respect to the violations identified in Section II, Findings of Fact and Conclusions of Law above, Respondent is ordered to conduct the following:

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A. UNOX SYSTEM COMPLIANCE MEASURES

48. Through a November 2011 UNOX Performance Test and through ongoing discussion between EPA and Respondent, EPA has determined the following site specific operating parameters, monitoring parameters and corresponding values, as required by 40 CFR 63.453(j)(1):

- a. *UNOX System I Operating Parameters:* Respondent must operate the UNOX in compliance with the following parameter values for the Facility in Table 1 below:

TABLE 1 – UNOX System Operating Parameters

Parameter	Value
Oxygen Supply Flow Rate (tons per day)	≥ 65 TPD
Aerator Horsepower	≥ 900 total aerator horsepower; Minimum 225 aerator horsepower per train in service.
Condensate Influent Flow Rate (million gallons per day)	≤ 1.0 MGD
Total Wastewater Influent Flow Rate (million gallons per day)	≤ 50 MGD

- b. If the Facility is operating outside any of the UNOX System Operating Parameter values listed in Table 1 of Paragraph 48.a above, Respondent must record the date of such occurrence and comply with the procedures set forth in Paragraph 41 of the Facility's Title V Permit (Appendix A). If the performance test conducted pursuant to Paragraph 41 of the Facility's Title V Permit indicates a violation of the percent HAP reduction standard required by 40 C.F.R. § 63.446(e)(2-3) and

1 "UNOX System and related equipment" shall mean a high purity oxygen covered aeration basin that provides biological treatment to the Facility's wastewater. The UNOX system is comprised of an oxygen supply system and multiple aerators. Related process equipment includes secondary clarifiers to remove waste biomass and to provide return activated sludge to the aeration basin. Related monitoring equipment includes lower explosive limit (LEL) meters and vent gas purity (VGP) monitors.

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Paragraph 35 of the Facility's Title V Permit (Appendix A), Respondent shall conduct a Root Cause Analysis at the Facility in accordance with Paragraph 53 of this Consent Order. Within thirty (30) Days of receiving analytical results from samples taken during the UNOX System Operating Parameter(s) exceedance event, Respondent must provide EPA with copies of all notifications, reports, and sampling required under Paragraph 41 of the Facility's Title V Permit (Appendix A).

- c. *UNOX System Monitoring Parameters:* Respondent must monitor the following UNOX parameter values for the Facility as set forth in Table 2 below:

TABLE 2 – UNOX System Monitoring Parameters

Parameter	Value	Monitoring Method and Location
Soluble Chemical Oxygen Demand (sCOD) (mg/l)	≤ 180	Daily 24 hour composite sample of the liquid effluent from the secondary clarifier.
Lower Explosive Limit (LEL) (%)	≤ 25	Continuous instantaneous reading by explosivity meter installed in the UNOX basin.
UNOX System Vent Gas Purity (VGP) (% O ₂)	≤ 45	Daily average of continuous readings of the UNOX System.

- d. If the Facility exceeds (a) the LEL value in Table 2 in multiple in-service trains or (b) both the Vent Gas Purity and sCOD values in Table 2 or (c) the Vent Gas Purity is greater than 96%, then the Respondent must record the date of occurrence and comply with the procedures set forth in Paragraph 41 of the Facility's Title V Permit (Appendix A). If the performance test conducted pursuant to Paragraph 41 of the Facility's Title V Permit (Appendix A) indicates a violation of the percent HAP reduction standard required by 40 C.F.R. § 63.446(e)(2-3) and Paragraph 35 of the Facility's Title V Permit (Appendix A), Respondent shall conduct a Root Cause Analysis at the Facility in accordance with Paragraph 53 of this Consent Order. Within thirty (30) Days of receiving analytical results from samples taken during the UNOX System Monitoring Parameter(s) exceedance event, Respondent must provide EPA with copies of all

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notifications, reports, and sampling required under Paragraph 41 of the Facility's Title V Permit (Appendix A).

B. PERMIT REQUIREMENTS

49. Within sixty (60) Days of the Effective Date of this Consent Order, Respondent shall apply to VADEQ to incorporate the following language into the Facility's current Title V Permit:

- a. "Any Group 1 waste water stream that is introduced to the treatment plant at a point prior (upstream) to the UNOX system, shall be handled in accordance with 40 C.F.R. § 63.132, and/or any other applicable requirement as established pursuant to 40 C.F.R. § 63.1582(c), prior to its introduction to the UNOX system."
- b. "As stated in 40 C.F.R. § 63.1582(c), if your POTW treatment plant accepts one or more specific regulated industrial waste streams as part of compliance with one or more other NESHAP, then you are subject to all the requirements of each appropriate NESHAP for each waste stream as described in the following section. In the case of overlapping NESHAP requirements, the more stringent of the requirements will apply."

50. Within sixty (60) Days of Effective Date of this Consent Order, Respondent shall apply to VADEQ to incorporate the following language into the Facility's current Title V Permit: "The Permittee shall notify EPA and VADEQ at least one hundred and sixty-five (165) Days for new applications and seventy five (75) Days for amended applications prior to accepting any new wastewater stream subject to treatment requirements under the POTW MACT or other NESHAP."

51. Within sixty (60) Days of the Effective Date of this Consent Order, Respondent shall apply to VADEQ to incorporate the following provisions into a new or existing federally enforceable state construction or operating permit (other than CAA Title V permit), as applicable.

- a. the UNOX System Compliance Measures, as set forth herein in Section III.A.; and
- b. the following language requiring Hopewell to maintain and implement a Prevention, Maintenance, Operation and Notification (PMON) Plan:
 - i. "Permittee will maintain, update as necessary, and implement a Prevention, Maintenance, Operation and Notification (PMON) Plan, setting forth the procedures, practices, and policies for the

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maintenance and operation of the UNOX system, including provisions for notifying permittee staff, industrial users and regulators of any upset, malfunction or other condition of the UNOX system that may interfere with its ability to meet the 92% HAP reduction standard. For purposes of this requirement, the initial PMON shall be the plan approved by the United States Environmental Protection Agency (EPA), as referenced in the Administrative Compliance Order on Consent (Docket No: CAA-03-2016-0230DA).”

In conjunction with any such permitting under this Paragraph, Respondent shall file any application necessary to incorporate the requirements of that permit, once final into the Facility’s Title V Permit, in accordance with the Commonwealth’s applicable Title V rules. Following submission of the permit applications by Respondent to VADEQ, Respondent shall cooperate with VADEQ by promptly submitting all information that VADEQ seeks following its receipt of the permit application.

C. PMON PLAN

52. Commencing with the Effective Date of this Consent Order, Respondent shall implement the EPA-approved Preventative Maintenance, Operation and Notification Plan (“PMON Plan”), attached hereto as Appendix C, at all times, including periods of startup, shutdown and malfunction of its process units, and control devices. Respondent shall maintain the original PMON Plan and all subsequent revisions at the Facility and have them available for review by EPA.

D. ROOT CAUSE ANALYSIS

53. Pursuant to Paragraphs 48.b and .d of this Consent Order, Respondent shall conduct a Root Cause Analysis when the Facility is not in compliance with the 92 percent HAP reduction standard set forth at 40 C.F.R. § 63.446(e)(2-3). Respondent will submit the Root Cause Analysis to EPA within sixty (60) Days of the commencement of such non-compliance. The Root Cause Analysis shall:

- a. set forth all significant contributing causes that led to the requirement to conduct a Root Cause Analysis as set forth in this Paragraph, including but not limited to, identification of any contributions from Industrial Users of the Facility;
- b. provide an analysis of the remedial measures available to reduce the likelihood of a recurrence, including but not limited to, corrective and

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preventative action(s), installation of pretreatment systems, revisions to any slug discharge control plans, or other design, operation, process, and maintenance changes by the Facility and/or industrial users; and

- c. include a recommendation of the remedial measure(s) to be implemented and a schedule for their implementation. Respondent shall implement the recommended remedial measure(s) applicable to the Facility.

54. If a Root Cause Analysis identifies alternative remedial measures the Root Cause Analysis shall discuss the probable effectiveness and actual or best estimated cost of the alternative remedial measures.

55. If a Root Cause Analysis identifies an Industrial User of the Facility as a cause of or contributing to the Facility's failure to meet the 92 percent HAP reduction standard, Respondent shall take the following actions:

- a. Upon completion of the Root Cause Analysis, Respondent shall notify the Industrial User of its determination that the Industrial User is a responsible party that caused or contributed to the Facility's failure to meet the 92 percent HAP reduction standard and require the Industrial User to complete its own Root Cause Analysis. If notification by the Respondent to the Industrial User is completed through the issuance of a Notice of Violation, it shall occur within ten (10) Days of completion of the Facility's Root Cause Analysis. If notification by the Respondent to the Industrial User is completed through the issuance of a Consent Order, it shall occur within sixty (60) Days of completion of the Facility's Root Cause Analysis;
- b. If, after consideration of the Industrial User's Root Cause Analysis, the Respondent maintains that the Industrial User caused or contributed to the parameter exceedance or the Facility's failure to meet the 92 percent HAP reduction standard and the measure(s) recommended in the Respondent's Root Cause Analysis are necessary to prevent recurrences, Respondent shall require the Industrial User to implement such measure(s);
- c. If the Industrial User fails to comply with the requirements of this Paragraph, the Respondent shall use all of its available authority, including, but not limited to, the imposition of fines to compel the Industrial User to correct or cease activities leading to excess emissions and/or unauthorized discharges.

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- d. An Industrial User's cause of or contribution to the Facility's failure to meet the 92 percent HAP reduction standard, as referenced in this Paragraph, includes, but is not limited to, unauthorized discharges and other violations of an Industrial User's pretreatment permit.

E. THIRD PARTY AUDIT

56. *Third Party Audit Contract:* Within thirty (30) days of the Effective Date of this Consent Order, Respondent shall commence, and thereafter diligently pursue, consistent with Hopewell's procurement requirements, the procurement process to obtain a third party auditor (the "Audit Firm"), which shall provide that, under the conditions described in paragraph 60 of this Consent Order, below, the third party auditor shall complete an audit in accordance with the procedures set forth in Appendix B to this Consent Order. Procurement of the Audit Firm shall be completed in accordance with the requirements under the Virginia Public Procurement Act.
57. *Audit Firm:* The Audit Firm retained by Respondent shall have the qualifications outlined below, and shall sign the certification required by Paragraph 59 below.
58. The Audit Firm shall have expertise in environmental auditing and with the federal CAA and its implementing regulations promulgated in 40 C.F.R Part 63 Subpart S ("Pulp and Paper MACT"). During the course of the audit, the Audit Firm shall become familiar with the Facility's Title V permit, and with the Facility's industrial wastewater treatment system, including but not limited to, the UNOX treatment system, as shown in the schematic in Attachment D to this Appendix.
59. Neither the Audit Firm, nor any person presently employed by the firm, shall have been employed by the Facility to conduct an environmental audit or any other environmental compliance-related activities at the Facility with respect to CAA compliance within the past five years; neither shall such Audit Firm, nor any person presently employed by the firm, have been employed by the Facility to conduct an environmental audit or any other environmental compliance-related activities at the Facility with respect to compliance with any other environmental law at any time during the past 2 years. The Facility shall require the Audit Firm to sign a certification to this effect.
60. *Requirement to Conduct Audit:* The third party audit contract required by this subsection E. of this Consent Order to Comply shall provide that, if the Facility is out of compliance with the 92 percent HAP reduction standard set forth at 40 C.F.R. § 63.446(e)(2-3) during more than three (3) events in the eight month period following the Effective Date of this Consent Order, then the third party auditor retained by Respondent shall conduct an audit in accordance with the procedures set forth in Appendix B. For purposes of this Consent Order, an "event" shall be a single occurrence, omission or act (or related group of such occurrences, omissions or acts) that

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gives rise to one or more days of violation of the 92% HAP reduction standard, as referenced herein.

F. RECORDS

61. From the Effective Date of this Consent Order, Respondent shall keep a written record of all periods of startup, shutdown, malfunction, non-operation, bypass of control devices, and repairs for each process unit, control device, and monitoring system at the Facility related to operation and monitoring of the UNOX/MACT treatment/compliance system. Such records shall include the following for each event: (1) the times and duration of the event; (2) a brief description of the event, the cause, or if not available likely cause, of the event; (3) a description of any actions taken to minimize excess emissions during the event; and (4) an explanation of whether the event and Respondent's actions were consistent with the PMON Plan required by paragraph 52, above. Respondent shall also keep records of all calibration checks and low- and high-level adjustments for each control device and monitoring system at the Facility related to operation and monitoring of the UNOX/MACT treatment/compliance system. Respondent shall maintain such records for at least twelve (12) months from the Effective Date of this Order, and shall produce any such record to EPA upon request.

IV. RESPONSES TO ORDER

62. Respondent must submit responses to the requirements of paragraph 47 of this Consent Order, and any other information required to be submitted to EPA under this Consent Order, to:

Kristen Hall
Environmental Scientist
U.S. Environmental Protection Agency, Region III
Air Protection Division (3AP20)
1650 Arch Street
Philadelphia, PA 19103-2029

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Copies shall be sent to:

Daniel E. Boehmcke
Senior Assistant Regional Counsel
Office of Regional Counsel (3RC10)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

V. GENERAL PROVISIONS AND OTHER TERMS AND CONDITIONS

63. Respondent admits the jurisdictional allegations contained in this Consent Order. Respondent neither admits nor denies the Findings of Fact in Section II of this Consent Order. Respondent has previously paid an administrative penalty to the EPA in settlement of the Clean Air Act violations alleged herein, among others.

64. Any violation of this Consent Order may result in a civil administrative or judicial action for an injunction or civil penalties of up to \$93,750 per day per violation, or both, as provided in Sections 113(b)(2) and 113(d)(1) of the Act, 42 U.S.C. §§ 7413(b)(2) and 7413(d)(1), as well as criminal sanctions as provided in Section 113(c) of the Act, 42 U.S.C. § 7413(c). The EPA may use any information submitted under this Consent Order in an administrative, civil judicial, or criminal action.

65. Nothing in this Consent Order shall relieve Respondent of the duty to comply with all applicable provisions of the Act or other federal, state or local laws or statutes, nor shall it restrict the EPA's authority to seek compliance with any applicable laws or regulations, nor shall it be construed to be a ruling on, or determination of, any issue related to any federal, state, or local permit.

66. Nothing herein shall be construed to limit the power of the EPA to undertake any action against Respondent or any person in response to conditions that may present an imminent and substantial endangerment to the public health, welfare, or the environment.

67. The provisions of this Consent Order shall apply to and be binding upon Respondent and its officers, directors, employees, agents, trustees, servants, authorized representatives, successors, and assigns. From the Effective Date of this Consent Order until the Termination Date as set out in paragraph 79, below, Respondent must give written notice and a copy of this Consent Order to any successors in interest prior to any transfer of ownership or control of any portion of or interest in the Facility. Simultaneously with such notice, Respondent shall provide written notice of such transfer, assignment, or delegation to the EPA. In the event of any such

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transfer, assignment, or delegation, Respondent shall not be released from the obligations or liabilities of this Consent Order unless the EPA has provided written approval of the release of said obligations or liabilities.

68. Each undersigned representative of the Respondent certifies that he or she is authorized to enter into the terms and conditions of this Consent Order to execute and bind legally the Respondent to this document.

69. Respondent shall provide a copy of this Consent Order to all contractors, subcontractors, laboratories and consultants retained to conduct or monitor any portion of the Consent Order or to comply with any portion of this Consent Order, and shall condition all such contracts on compliance with the terms and conditions of this Consent Order.

70. Unless this Consent Order states otherwise, whenever, under the terms of this Consent Order, written notice or other document is required to be given, it shall be directed to the individuals specified at the addresses below unless those individuals or their successors give notice of a change of address to the other party in writing. All notices and submissions shall be considered effective upon receipt.

Notices for EPA shall be sent to the persons and addresses in paragraph 62.

Notices for Respondent shall be sent to:

Jeanie Grandstaff, Plant Director
Hopewell Water Renewal
P.O. Box 969
231 Hummel Ross Rd,
Hopewell, VA 23860

71. To the extent this Consent Order requires Respondent to submit any information to the EPA, Respondent may assert a business confidentiality claim covering part or all of that information, but only to the extent and only in the manner described in 40 C.F.R. Part 2, Subpart B. The EPA will disclose information submitted under a confidentiality claim only as provided in 40 C.F.R. Part 2, Subpart B. If Respondent does not assert a confidentiality claim, the EPA may make the submitted information available to the public without further notice to Respondent.

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72. Respondent waives any and all remedies, claims for relief and otherwise available rights to judicial or administrative review that Respondent may have with respect to any issue of fact or law set forth in this Consent Order, including any right of judicial review under Section 307(b)(1) of the Act, 42 U.S.C. § 7607(b)(1).

73. A copy of this Consent Order will be provided to Michael Dowd, Director of the Air Division, for VADEQ.

74. Any reports, plans, specifications, schedules, or other submissions required by this Consent Order are, upon acceptance by EPA, incorporated into this Consent Order. Any non-compliance with such EPA-accepted reports, plans, specifications, schedules, or other submissions shall be considered non-compliance with the requirements of this Consent Order. Determinations of non-compliance will be made by EPA.

75. No informal advice, guidance, suggestions or comments by EPA regarding reports, plans, specifications, schedules, or other submissions by the Respondent or the requirements of this Consent Order will be construed as relieving the Respondent of its obligation to obtain formal acceptance when required by this Consent Order, and to comply with the requirements of this Consent Order unless formally modified.

VI. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

76. Pursuant to Section 113(a)(4) of the Act, an order does not take effect until the person to whom it has been issued has had an opportunity to confer with the EPA concerning the alleged violations. By signing this Consent Order, Respondent acknowledges and agrees that it has been provided an opportunity to confer with the EPA prior to issuance of this Consent Order. Accordingly, this Consent Order will take effect immediately upon signature by the latter of Respondent or the EPA ("Effective Date of this Order").

77. This Consent Order may be modified or amended in writing by EPA and Respondent. Such modifications or amendments shall be effective on the date they are signed by the Regional Administrator (or delegate thereof) and representative of Respondent or such other date as set by the parties to the amendment. However, such modification or amendment may not extend compliance beyond one year from the Effective Date of this Consent Order. Section 113(a)(4) of the Act, 42 U.S.C. § 7413(a)(4).

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VII. CALCULATION OF TIME

78. Any reference to "days" in this Consent Order shall mean calendar days, unless otherwise specifically provided herein. Any reference to "business days" shall mean every day of the week except Saturdays, Sundays and Federal holidays.

VIII. TERMINATION

79. This Consent Order shall terminate on the earlier of the following (the "Termination Date") at which point Respondent shall operate in compliance with the Act:

- a. One year after the Effective Date of this Consent Order;
- b. The effective date of any determination by the EPA that Respondent has achieved compliance with all terms of this Consent Order; or
- c. Immediately upon receipt by Respondent of notice from the EPA finding that an imminent and substantial endangerment to public health, welfare, or the environment has occurred.

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FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

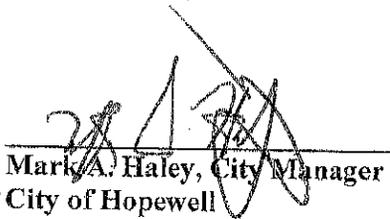


Cristina Fernandez, Director
Air Protection Division
U.S. Environmental Protection Agency
Region 3

09/30/16

Date

FOR RESPONDENT CITY OF HOPEWELL, VIRGINIA:



Mark A. Haley, City Manager
City of Hopewell

09-28-2016

Date

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CERTIFICATE OF SERVICE

I certify that the foregoing "Administrative Compliance Order on Consent" in the Matter of City of Hopewell, Virginia, Order [#], was filed and copies of the same were mailed to the parties as indicated below.

Via overnight delivery

Bernadette Rappold, Esq.
2101 L Street, N.W.
Suite 1000
Washington, DC 20037

Via US Mail:

Michael Dowd, Director
Air Division
Virginia Department of Environmental Quality
629 E Main St
Richmond, VA 23219

9/30/16
[Date]



Daniel E. Boehmcke
Senior Assistant Regional Counsel



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Michael P. Murphy
Regional Director

Federal Operating Permit Article 1

This permit is based upon the requirements of Title V of the Federal Clean Air Act and Chapter 80, Article 1, of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution. Until such time as this permit is reopened and revised, modified, revoked, terminated or expires, the permittee is authorized to operate in accordance with the terms and conditions contained herein. This permit is issued under the authority of Title 10.1, Chapter 13, §10.1-1322 of the Air Pollution Control Law of Virginia. This permit is issued consistent with the Administrative Process Act, and 9 VAC 5-80-50 through 9 VAC 5-80-300, of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution of the Commonwealth of Virginia.

Authorization to operate a Stationary Source of Air Pollution as described in this permit is hereby granted to:

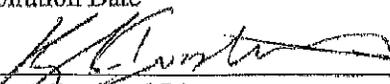
Permittee Name: City of Hopewell
Facility Name: Hopewell Regional Wastewater Treatment Facility
Facility Location: 231 Hummel Ross Road
Hopewell, Virginia
Registration Number: 50735
Permit Number: PRO50735

This permit includes the following programs:

Federally Enforceable Requirements - Clean Air Act (Pages 2 through 28)

October 2, 2014
Effective Date

October 1, 2019
Expiration Date


Deputy Regional Director

02 OCTOBER 2014
Signature Date

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Facility Information

Permittee
City of Hopewell
P.O. Box 969
Hopewell, VA 23860

Responsible Official
Jeannie Grandstaff
Director

Facility
Hopewell Regional Wastewater Treatment Facility
231 Hummel Ross Road
Hopewell, VA 23860

Contact Person
Matthew Ellinghaus, P.E.
Deputy Director
(804) 541-2214, ext. 208

County-Plant Identification Number: 51-670-0053

Facility Description: NAICS 221320 - The facility is a publicly owned treatment works (POTW) that treats domestic and industrial wastewater. The facility has a design flow rate capacity of 50 million gallons per day (MGD) and currently treats an average influent flow rate of 25-30 million gallons of wastewater per day. The treatment processes consist of wet stream treatment units and solids handling facilities. Raw wastewater is processed by preliminary* and primary* treatment units and then biologically treated by secondary treatment units. This treatment results in the generation of sludges which are thickened, mechanically dewatered, and thermally oxidized in a multiple hearth furnace. The multiple hearth furnace will have an alternative operating mode (or standby mode) of combusting only auxiliary fuel of natural gas and/or propane. The treated wastewater is discharged into Gravelly Run, which flows into the James River.

* The domestic influent and the industrial influent will have two separate influent screens, grit chambers, parshall flumes, and primary clarifiers.

Emission Units

Equipment to be operated consists of:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Biosolids/Sludge Incinerator							
13a	S5	Multiple Hearth Furnace (Mfg. 1974) – Main Operating Mode (Minimum Chamber Temp. (°F) : 100-1,200 (for hearths #1-#8)	Incinerator max. rated cap.: 6,500 lbs/hr (dry biosolids/sludge @ 30% solids) Burner rated capacity: 40.2 x 10 ⁶ (sludge & auxiliary fuel: natural gas) BTU/hr	Afterburner	S4-1	VOC/HAPs	12/2/74 (amended 12/10/74)
				Venturi Scrubber	S4-2	PM	
				Impingement Plate Scrubber	S4-3	PM	
13b	S6	Multiple Hearth Furnace (Mfg. 1974) – Standby Mode	Burner rated capacity: 40.2 x 10 ⁶ (auxiliary fuel: natural gas) BTU/hr	-	-	-	12/2/74 (amended 12/10/74)
Stationary Combustion Engines							
22		Diesel-fired Kohler 300 RE0ZV emergency generator (Mfg. date: March 2006)	300 kW	-	-	-	-
Wastewater							
2	S1	Grit Chambers (three units)	50 million gallons of wastewater per day plant	Aluminum cover and vent	-	VOC/HAPs	12/2/74 (amended 12/10/74) and 5/30/96 RACT

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date	
3	S1	Parshall Flume	50 million gallons of wastewater per day plant	Aluminum cover and vent	-	VOC/HAPs	12/2/74 (amended 12/10/74) and 5/30/96 RACT	
4	Fug.	Supernatant Return Discharge		-	-	-	-	12/2/74 (amended 12/10/74)
5	Fug.	Primary Clarifiers/ Denitrification (eight units)		-	-	-	-	12/2/74 (amended 12/10/74)
6	S2	UNOX System (four trains)		-	-	-	-	12/2/74 (amended 12/10/74)
7	Fug.	Secondary Clarifiers (eight units)		-	-	-	-	12/2/74 (amended 12/10/74)
11	S3	Sewage Sludge Holding Tanks (two units)		-	-	-	-	12/2/74 (amended 12/10/74)
12	S3/S4	Sharples Centrifuges (two units)		-	-	-	-	-
102	Fug.	Ash Handling System		1,800 lbs/hr	-	-	-	-

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

Multiple Hearth Furnace Equipment Requirements - (emission unit ID#s 13a (Main Operating Mode) and 13b (Standby Mode))

1. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) - Limitations** - Emissions from the operation Multiple Hearth Furnace shall not exceed the limit specified below:

Particulate Matter 0.65 grams/kilogram of dry sludge incinerated

(9 VAC 5-80-110 and 40 CFR 60.152(a)(1), NSPS Subpart O)

2. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) - Limitations** - Emissions from the operation Multiple Hearth Furnace shall not exceed the limit specified below:

Particulate Matter 0.14 grains/dscf, corrected to 12% CO₂*

* Without the contribution of auxiliary fuel.

(9 VAC 5-80-110 and 9 VAC 5-40-750)

3. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) - Limitations** - Emissions from the operation Multiple Hearth Furnace shall not exceed the limit specified below:

Mercury 3,200 grams/24-hour period

(9 VAC 5-80-110 and 40 CFR 61.50, Mercury NESHAP, Subpart E)

4. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) - Limitations** - Visible Emissions from either of the Multiple Hearth Furnace stacks (main operating mode/stack S-5 or standby mode/stack S-6) shall not exceed 20 percent opacity, except for one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity (standby mode/stack S-6 only).

(9 VAC 5-80-110, 9 VAC 5-50-80 and 40 CFR 60.152(a)(2), NSPS Subpart O)

5. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID#13) - Monitoring** – The permittee shall obtain representative samples of the sludge feed to the Multiple Hearth Furnace and analyze these samples for mercury content once each calendar year. The permittee shall use the data so obtained together with the sludge feed rate data acquired in accordance with Condition 6 to determine compliance with the mercury emission standard in Condition 3. Records of the sludge sampling results, compliance determinations, and the details of any corrective actions shall be available on site for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110)

6. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) -**

Monitoring – The permittee shall install, calibrate, maintain, and operate continuous monitors for the following Multiple Hearth Furnace operating parameters:

- the mass or volume of sludge charged;
- the oxygen content of the incinerator exhaust gas;
- the pressure drop of the gas flow through the scrubber system;
- the temperature at each hearth; and
- the total supplemental fuel flow.

The accuracy, location, and calibration frequency for each of the above devices shall be as specified in 40 CFR 60.153.

(9 VAC 5-80-110 and 40 CFR 60.153(a and b (1-4)))

7. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) -**

Monitoring – For each day in which the Multiple Hearth Furnace is fed sludge, the permittee shall collect and analyze a grab sample of the sludge fed to the Multiple Hearth Furnace once per day. The dry sludge content and the volatile solids content of each sample shall be determined in accordance with 40 CFR 60.153(b)(5). As an alternative to the test method required by 40 CFR 60.153(b)(5) which refers to a test method from an out of publication edition of Standard Methods (16th Edition), the permittee may use a valid test method based on a more current edition of Standard Methods.

(9 VAC 5-80-110 and 40 CFR 60.153(b)(5))

8. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) -**

Recordkeeping – The permittee shall retain records of the data recorded by the continuous monitors of Condition 6 and obtained from the grab samples of Condition 7 as well as the details of any corrective action taken in accordance with Condition 10.c.vii of this section for a minimum of five years.

(9 VAC 5-80-110 and 40 CFR 60.153(c))

9. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) -**

Monitoring – The Multiple Hearth Furnace stack shall be observed visually at least once each operating week in which sludge is fired in the furnace for at least a brief time period to determine if the Multiple Hearth Furnace stack has normal visible emissions, except during weeks in which a 40 CFR 60 Appendix A Method 9 visible emissions evaluation on the stack unless the visible emission condition is corrected as expeditiously as possible. The permittee shall maintain records of the results of the weekly visible emissions inspections and the details of any corrective actions taken as a result of these inspections.

(9 VAC 5-80-110)

10. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) - Reporting** - The permittee shall submit semi-annual reports containing the following information:
- a. A record of average scrubber pressure drop measurements for each period of 15 minutes duration or more during which the pressure drop of the scrubber was less than, by the percentage specified in 40 CFR 60.155(a)(1)(ii), the average scrubber pressure drop measured during the most recent performance test; and
 - b. A record of average oxygen content in the multiple hearth furnace exhaust gas for each period of 1-hour duration or more that the oxygen content of the incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test by more than 3 percent;
 - c. For each calendar day in which a decrease in scrubber pressure drop or increase in oxygen content of exhaust gas (as indicated in a. or b. of this condition) is reported:
 - i. The scrubber pressure drop averaged over each 1-hour incinerator operating period;
 - ii. The multiple hearth furnace exhaust oxygen content averaged over each 1-hour incinerator operating period;
 - iii. The temperature of every hearth averaged over each 1-hour incinerator operating period;
 - iv. The rate of sludge charged to the multiple hearth furnace averaged over each 1-hour incinerator operating period;
 - v. The multiple hearth furnace fuel use averaged over each 8-hour operating period;
 - vi. The moisture and volatile solids content of the daily grab sample of sludge charged to the multiple hearth furnace; and
 - vii. The details of any corrective action taken by the source to address any operating parameter deviation referenced in a. and b. of this condition.

The above reporting provisions shall apply only during periods of sludge incineration and do not apply during transitional periods of unit start-up/shutdown and sludge burnout.
(9 VAC 5-80-110 and 40 CFR 60.155(a-b))

11. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) - Reporting** - The permittee shall report the results of any 40 CFR Part 60 Method 9 opacity test performed as a result of Condition 9 if the test indicates the facility is out of compliance with the standard contained in Condition 4. The reports shall meet all the requirements of General Condition 62 of this permit.
(9 VAC 5-80-110)

Conditions 12 through 22 apply on and after March 21, 2016.

12. **Multiple Hearth Furnace Equipment and Ash Handling System Requirements - (emission unit ID#s 13 and 102) - Limitations** – The Multiple Hearth Furnace and associated ash handling system shall not cause or permit to be discharged into the atmosphere emissions in excess of that allowed under the provisions of 40 CFR 60.5165. (9 VAC 5-80-110 and 9 VAC 5-40-8220)
13. **Ash Handling System Requirements - (emission unit ID# 102) - Limitations** – The permittee shall cause or permit to be discharged into the atmosphere from any ash conveying system (including conveyor transfer points) **any** visible emissions for more than 5% of hourly observation period, measured at three, 1-hour observation periods. (9 VAC 5-80-110 and 9 VAC 5-40-8240 B)
14. **Multiple Hearth Furnace Equipment and Ash Handling System Requirements - (emission unit ID#s 13 and 102) – Operator Training and Certification Requirements** - The provisions of 40 CFR 60.5130, 40 CFR 60.5135, 40 CFR 60.5140, 40 CFR 60.5145, 40 CFR 60.5150, 40 CFR 60.5155, and 40 CFR 60.5160 apply. (9 VAC 5-80-110 and 9 VAC 5-40-8270)
15. **Multiple Hearth Furnace Equipment and Ash Handling System Requirements - (emission unit ID#s 13 and 102) – Compliance Schedule Requirements** – The Multiple Hearth Furnace and ash handling system shall achieve final compliance with “Emission Standards for Sewage Sludge Incineration Units (Rule 4-55)” or cease operation as expeditiously as practicable but not later than March 21, 2016. (9 VAC 5-80-110 and 9 VAC 5-40-8280)
16. **Multiple Hearth Furnace Equipment and Ash Handling System Requirements - (emission unit ID#s 13 and 102) – Compliance Schedule Requirements** – The provisions of 40 CFR 60.5085, 40 CFR 60.5090, 40 CFR 60.5095, 40 CFR 60.5100, 40 CFR 60.5105, 40 CFR 60.5110, 40 CFR 60.5115, 40 CFR 60.5120, and 40 CFR 60.5125 apply. (9 VAC 5-80-110 and 9 VAC 5-40-8280)
17. **Multiple Hearth Furnace Equipment and Ash Handling System Requirements - (emission unit ID#s 13 and 102) – Operating Requirements** - The Multiple Hearth Furnace and ash handling system shall not be operated in a manner that does not comply with the provisions of 40 CFR 60.5170 and 40 CFR 60.5175. (9 VAC 5-80-110 and 9 VAC 5-40-8290)
18. **Multiple Hearth Furnace Equipment and Ash Handling System Requirements - (emission unit ID#s 13 and 102) – Compliance Requirements** – With regard to the emission limits in 9 VAC 5-40-8220, 9 VAC 5-40-8240 B and 9 VAC 5-40-8290, the following provisions apply:

1. 9 VAC 5-40-20 B, C, D, and E;
2. To the extent specified in the federal regulations cited in condition 18. Subdivision 3, 40 CFR 60.7, 40 CFR 60.8, 40 CFR 60.11, and 40 CFR 60.13; and
3. 40 CFR 60.5185, 40 CFR 60.5190, 40 CFR 60.5195, 40 CFR 60.5200, 40 CFR 60.5205, 40 CFR 60.5210 and 40 CFR 60.5215.

(9 VAC 5-80-110 and 9 VAC 5-40-8300)

19. **Multiple Hearth Furnace Equipment and Ash Handling System Requirements - (emission unit ID#s 13 and 102) – Performance Testing, Monitoring, and Calibration Requirements** – With regard to the emission limits in 9 VAC 5-40-8220, 9 VAC 5-40-8240 B and 9 VAC 5-40-8290, the following provisions apply:

9 VAC 5-40-30 D and G;
9 VAC 5-40-40 A and F;
40 CFR 60.8(b) through (f), with the exception of paragraph (a);
40 CFR 60.13; and
40 CFR 60.5220 and 40 CFR 60.5225.

(9 VAC 5-80-110 and 9 VAC 5-40-8310)

20. **Ash Handling System Requirements - (emission unit ID# 102) - Monitoring** – The ash conveying system and any associated transfer points shall be observed as according to condition 13 at least once each week in which ash is being conveyed to determine if the ash conveying system and any associated transfer points have any visible emissions. The permittee shall maintain records of the results of the weekly visible emissions inspections and the details of any corrective actions taken as a result of these inspections.
(9 VAC 5-80-110 and 9 VAC 5-40-8240 B)

21. **Multiple Hearth Furnace Equipment and Ash Handling System Requirements - (emission unit ID# 13 and 102) – Recordkeeping and Reporting Requirements** – With regard to the emission limits in 9 VAC 5-40-8220, 9 VAC 5-40-8240 B and 9 VAC 5-40-8290, the following provisions apply:

9 VAC 5-40-50 F and H;
40 CFR 60.7; and
40 CFR 60.5230 and 40 CFR 60.5235.

(9 VAC 5-80-110 and 9 VAC 5-40-8320 B)

22. **Multiple Hearth Furnace Equipment and Ash Handling System Requirements - (emission unit ID# 13 and 102) – Recordkeeping and Reporting Requirements** – With regard to the emission limits in 9 VAC 5-40-8220, 9 VAC 5-40-8240 B and 9 VAC 5-40-8290, the following provisions apply:

9 VAC 5-20-180 with the exception of subsections E, F, and G; and
 40 CFR 60.5180 and 40 CFR 60.5181.

(9 VAC 5-80-110 and 9 VAC 5-40-8340 B)

**Conditions 23 through 31 apply until March 21, 2016, after which
 Conditions 12 through 22 will apply.**

23. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) –
 Compliance Assurance Monitoring (CAM)** - The permittee shall monitor, operate,
 calibrate and maintain the wet scrubber controlling the multiple hearth furnace according to
 the following:

Monitoring, Frequency, Records	Performance Criteria	Indicator Range; Averaging Period
Continuous pressure drop monitoring is conducted for all periods when the MHF is operating. 15-minute averages are recorded continuously when the MHF is operating.	The pressure sensor used to measure the differential across the scrubber system has a minimum accuracy of ± 1 inch water column. (Annual calibration is performed of pressure drop measuring device.)	A monitoring excursion is indicated by an average pressure drop reading (15-minute average) below the value established based on the most recent performance test in accordance with 40 CFR 60, Subpart O. If a monitoring excursion is observed, equipment inspections and corrective actions are conducted.
A visual observation is performed weekly. Visual observations are recorded weekly (for each observation).	Visual observations are made at the emission point (at the exhaust stack location). (The visual emissions observer is familiar with conducting visual observations following Method 22-like procedures.)	A monitoring excursion is indicated by the presence of visible emissions above normal levels. If above normal visible emissions are observed equipment inspections and corrective actions are conducted.

(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.6(c))

24. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) –
 Compliance Assurance Monitoring (CAM)** - The permittee shall maintain the monitoring
 equipment, including, but not limited to, maintaining necessary parts for routine repairs of
 the monitoring equipment.

(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (b))

25. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) – Compliance Assurance Monitoring (CAM)** – Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the multiple hearth furnace equipment is operating. Data recorded during monitoring malfunction, associated repairs, and required quality assurance or control activities shall not be used for purposes of compliance assurance monitoring, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by inadequate maintenance or improper operation are not malfunctions.
(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (c))
26. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) – Compliance Assurance Monitoring (CAM)** – Upon detecting an excursion or exceedance, the permittee shall restore operation of the multiple hearth furnace (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup and shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator, designated condition, or below the applicable emission limitation or standard, as applicable.
(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (d)(1))
27. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) – Compliance Assurance Monitoring (CAM)** – Determination that acceptable procedures were used in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.
(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (d)(2))
28. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) – Compliance Assurance Monitoring (CAM)** – If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify

the Director, Piedmont Regional Office and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (e))

29. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) – Compliance Assurance Monitoring (CAM)** – If the number of exceedances or excursions exceeds 5 percent duration of the operating time for the multiple hearth furnace for a semiannual reporting period, the permittee shall develop, implement and maintain a Quality Improvement Plan (QIP) in accordance with 40 CFR 64.8. If a QIP is required, the permittee shall have it available for inspection. The QIP initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the permittee shall modify the plan to include procedures for conducting one or more of the following, as appropriate:
- a. Improved preventative maintenance practices;
 - b. Process operation changes;
 - c. Appropriate improvements to control methods;
 - d. Other steps appropriate to correct control performance; and
 - e. More frequent or improved monitoring

(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.8(a) and (b))

30. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) – Compliance Assurance Monitoring (CAM) Recordkeeping** – The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan (QIP) required pursuant to 40 CFR 64.8 and any activities undertaken to implement a quality improvement plan (QIP), and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).

(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (e))

31. **Multiple Hearth Furnace Equipment Requirements - (emission unit ID# 13) - Compliance Assurance Monitoring (CAM) Reporting** - The permittee shall submit CAM reports as part of the Title V semi-annual monitoring reports required by General Condition 60 of this permit to the Director, Piedmont Regional Office. Such reports shall include at a minimum:

- a. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
- b. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and
- c. A description of the actions taken to implement a quality improvement plan (QIP) during the reporting period as specified in §64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

(9 VAC 5-80-110 F and 40 CFR 64.9(a))

Grit Chambers/Parshall Flume Process Equipment Requirements - (emission unit ID# 2-3)

32. **Grit Chambers/Parshall Flume Process Equipment Requirements - (emission unit ID# 2-3) - Limitations** – Volatile Organic Compound emissions from the three Grit Chambers and the Parshall Flume shall be controlled by a cover and vent.
(9 VAC 5-80-110, 9 VAC 5-40-300 and Condition E.2 of 5/30/96 RACT Consent Order)
33. **Grit Chambers/Parshall Flume Process Equipment Requirements - (emission unit ID# 2-3) - Monitoring** – An annual internal inspection shall be conducted on the cover and vent controlling VOC emissions from the grit chambers and Parshall Flume. The permittee shall maintain records of the results of the annual structural integrity inspections of the cover and vent and details of any corrective actions taken as a result of these inspections. These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-110)

UNOX System Process Equipment Requirements - (emission unit ID# 6)

34. **UNOX System Process Equipment Requirements - (emission unit ID# 6) - Limitations** – The permittee shall accept any wastewater containing pulping process condensates regulated under 40 CFR 63, Subpart S, below the liquid surface of the UNOX System.
(9 VAC 5-80-110 and 40 CFR 63.446(e)(2))
35. **UNOX System Process Equipment Requirements - (emission unit ID#6) - Limitations** - The permittee shall operate the UNOX System to reduce and to destroy the affected Hazardous Air Pollutants (HAPs) present in the regulated wastewater (as defined in Condition 34) by at least 92 percent by weight.
(9 VAC 5-80-110 and 40 CFR 63.446(e)(2-3))

36. **UNOX System Process Equipment Requirements - (emission unit ID# 6) – Testing –**
The permittee shall perform an initial performance test on the UNOX System when receiving regulated wastewater for percent HAP removal. Sampling locations and procedures for the performance test shall be in conformance with 40 CFR 63.457(c). The percent HAP reduction for the UNOX System shall be calculated as stated in 40 CFR 63.457(l). In addition, after the initial performance test, the permittee shall obtain daily inlet and outlet samples of regulated wastewater. Samples shall be stored as described in 40 CFR 63.457(n).
(9 VAC 5-80-110, 40 CFR 63.457(a),(c),(l),(n) and 40 CFR 63.453(j)(1)(ii)(A-B))

37. **UNOX System Process Equipment Requirements - (emission unit ID# 6) - Monitoring**
– The permittee shall install, operate and maintain continuous monitoring devices for the following parameters for the UNOX System:

- UNOX System oxygen supply flow rate;
- Horsepower of UNOX System aerators;
- Regulated wastewater inlet flow to UNOX System;
- Total inlet liquid flow to UNOX System; and
- UNOX System vent gas purity

Alternatively, the permittee shall install, operate and maintain continuous monitoring devices for any parameters designated in an United States Environmental Protection Agency approved site-specific monitoring plan.
(9 VAC 5-80-110 and 40 CFR 63.453(j)(2))

38. **UNOX System Process Equipment Requirements - (emission unit ID# 6) - Monitoring**
– The permittee shall continuously monitor and record the values of the following operating parameters during the initial performance test required by Condition 36 during a period when the UNOX System vent gas purity is at a level consistent with normal operations (less than or equal to 0.96):

- UNOX System oxygen supply flow rate;
- Horsepower of UNOX System aerators;
- Regulated wastewater inlet flow to UNOX System; and
- Total inlet liquid flow to UNOX System;

An operating range/limit will be established for each of the above parameters based on the results of the initial performance test supplemented, if necessary, by engineering assessments and manufacturer's recommendations. The permittee shall submit periodic performance reports for the continuous monitoring system (CMS) relative to the above parameters. These CMS performance reports are to be provided as part of the semiannual reports specified in General Condition 60.
(9 VAC 5-80-110 and 40 CFR 63.453(n))

39. **UNOX System Process Equipment Requirements - (emission unit ID# 6) - Limitation** – The permittee shall operate the UNOX System when receiving regulated wastewater in a manner consistent with the minimum, maximum, or the range of (as appropriate) operating parameter values, as established in Condition 38 and consistent with a UNOX System vent gas purity level that indicates normal operation (less than or equal to 0.96).
(9 VAC 5-80-110 and 40 CFR 63.453(o))
40. **UNOX System Process Equipment Requirements - (emission unit ID# 6) - Testing** – The permittee shall perform quarterly percent reduction tests on the UNOX System when receiving regulated wastewater. These percent reduction tests shall be performed as specified in 40 CFR 63.457(l) within 45 days after the beginning of each quarter. The first quarter tests for each year shall include measurement of methanol and non-methanol HAP mass in the regulated wastewater stream (condensate stream) to determine the ratio of non-methanol HAP mass to methanol mass (“r” value). For demonstrating compliance with the 92 percent standard, the “r” value from the first quarterly performance test each year will be used for the subsequent quarterly performance tests through the remainder of that year. Parameter values (for those parameters listed Condition 38 of this section) shall be measured during the quarterly performance tests and the minimum, maximum, or the range of parameter values established in Condition 38 shall be increased, decreased, or expanded, respectively, if applicable, in accordance with 40 CFR 63.453(n). Quarterly test reports are to be provided by DEQ within 60 days of the test results becoming available from the contracted analytical laboratory.
(9 VAC 5-80-110, 40 CFR 63.453(j)(3) and 40 CFR 63.453(n))
41. **UNOX System Process Equipment Requirements - (emission unit ID# 6) – Monitoring/Testing** – The permittee shall perform the following actions when the monitoring parameters specified in Condition 37 are below the minimum, above the maximum, or out of the range of (as appropriate) operating parameter values established in Condition 38 (a monitoring parameter excursion). These actions shall be met as soon as practical after the establishment of any monitoring parameter excursion:
- a. Perform a performance test for percent HAP reduction using the test procedures of 40 CFR 63.4578(l) and the daily inlet and outlet samples of regulated wastewater specified by Condition 36 that coincide with the parameter excursion. These samples shall be obtained prior to the actions required by Condition 41 b. and c.
 - b. Take steps to repair or adjust the operation of the process to end the parameter excursion period.
 - c. Take steps to minimize total HAP emissions to the atmosphere during the parameter excursion period.
 - d. Notify DEQ that a performance test is being performed (wastewater samples have been sent for laboratory analysis). Additional reporting is required if the results from the performance test indicate a violation of the percent HAP reduction standard.

The results of performance test required by Condition 41 a. and the procedures specified in 40 CFR 63.453(p)(2) shall be used to determine compliance with Condition 35 for the monitoring parameter excursion period.
(9 VAC 5-80-110, 40 CFR 63.453(p) and 9 VAC 5-60-100)

42. **UNOX System Process Equipment Requirements - (emission unit ID# 6) - Monitoring**
– For all days in which monitoring data for one or more designated monitoring parameters is unavailable for greater than 25 percent of the day (greater than 6 hours), the permittee shall conduct a performance test for percent HAP reduction using the test procedures of 40 CFR 63.457(l). Since the permittee has the ability to monitor certain operating parameters by alternate methods during periods when a primary monitoring device is malfunctioning or not functional, performance testing for percent HAP reduction is not required for periods when valid monitoring parameter data is available from alternate methods. DEQ reserves the right to determine if the alternate method is valid for determining compliance during periods when a primary monitoring device is malfunctioning or not functional.
(9 VAC 5-80-110, 40 CFR 63 Subpart S and 9 VAC 5-60-100)

Engines - Diesel-Fired KOHLER 300 RE0ZV Emergency Generator Requirements - (emission unit ID# 22)

43. **Engine Requirements - (emission unit ID# 22) – Limitations, Monitoring and Recordkeeping** – Except as specified in this permit, the facility is to be operated in compliance with all applicable Federal requirements under 40 CFR 63, Subpart ZZZZ (National Emissions Standards for Hazardous air Pollutants for Stationary Reciprocating Internal Combustion Engines) (Such as all applicable Emission and Operating Limitations, General Compliance Requirements, Testing and Initial Compliance Requirements, Continuous Compliance Requirements, Notifications, Reports, and Records, and All applicable General Provisions). This unit is regulated under these provisions as an existing, emergency stationary RICE located at a major source of HAP emissions. In order to be considered an emergency stationary RICE, the unit must be operated in accordance with 40 CFR 63.6640(f).
(9 VAC 5-80-110 and 40 CFR 63, Subpart ZZZZ)
44. **Engine Requirements - (emission unit ID# 22) - Limitations** – Visible emissions from the stack for emission unit ID# 22 shall not exceed 20 percent opacity except for on six minute period in any one hour in which visible emissions shall not exceed 30% opacity.
(9 VAC 5-80-110 and 9 VAC 5-50-80)
45. **Engine Requirements - (emission unit ID#s 22) – Monitoring/Recordkeeping** – The stack for emission unit ID# 22 shall be observed visually at least once each operating week for at least a brief time period to determine if the stack has normal visible emissions, except during weeks in which a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the unit. On each occasion that above-normal visible emissions are observed, the permittee shall conduct a Method 9 visible emissions evaluation on the stack unless the

visible emission condition is corrected as expeditiously as possible. The permittee shall maintain records of the results of the weekly visible emissions inspections and the details of any corrective actions taken as a result of these inspections.
 (9 VAC 5-80-110 and 9 VAC 5-50-50)

Facility Wide Conditions

- 46. **Facility Wide Conditions - Testing** - The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Upon request from the Department, test ports shall be provided at the appropriate locations.
 (9 VAC 5-50-30 and 9 VAC 5-80-110)
- 47. **Facility Wide Conditions - Testing** - If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
 (9 VAC 5-80-110)

Insignificant Emission Units

- 48. **Insignificant Emission Units** - The following emission units at the facility are identified in the application as insignificant emission units under 9 VAC 5-80-720:

Emission Unit No.	Emission Unit Description	Pollutant(s) Emitted (9 VAC 5-80-720B)
1	Influent (Bar) Screens	VOC < 5 tons/yr
8	Gravity Thickeners	
9	Dissolved Air Flotation Thickeners	
10	Supernatant Return Wetwell	
16	Re-aeration unit	
17	Disinfection Contact Tanks	
18(b)	Holding Tank	
19	Foreign Sludge Hopper	
100	Influent (Bar) Screen Conveyor and Storage Bin	
101	Grit Handling System	
103	Sludge Cake Storage Pad	
104	Degreasing Unit	VOC < 5 tons/yr
105	Primary Sludge Pump Station Vault Vent	
106	Gravity Thickener Basement Vent	
107	Dissolved Air Flotation Thickener Louver Vent	

Emission Unit No.	Emission Unit Description	Pollutant(s) Emitted (9 VAC 5-80-720B)
108	Hypochlorite System	VOC < 5 tons/yr
109	Non-Potable Water Wet Well	
112	Influent Screens – For Domestic Wastewater	
113	Grit Tanks - for Domestic Wastewater	
114	Parshall Flume - for Domestic Wastewater	
115	Hypochlorite Disinfection System - for Domestic Wastewater	
14	Solids Handling Building	PM/PM10 < 5 tons/yr

These emission units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Compliance Plan

49. **Compliance Plan - Certified Progress Report** – Upon a signed EPA consent decree, the permittee shall submit a permit application to modify the Title V as according to the requirements in the signed EPA consent decree.
 (9 VAC 5-80-90 L.4 and 9 VAC 5-80-110 K.4)

Permit Shield & Inapplicable Requirements

50. **Permit Shield & Inapplicable Requirements** - Compliance with the provisions of this permit shall be deemed compliance with all applicable requirements in effect as of the permit issuance date as identified in this permit. This permit shield covers only those applicable requirements covered by terms and conditions in this permit and the following requirements which have been specifically identified as being not applicable to this permitted facility:

Citation	Title of Citation	Description of Applicability
None Identified		

Nothing in this permit shield shall alter the provisions of §303 of the federal Clean Air Act, including the authority of the administrator under that section, the liability of the owner for any violation of applicable requirements prior to or at the time of permit issuance, or the ability to obtain information by (i) the administrator pursuant to §114 of the federal Clean Air Act, (ii) the Board pursuant to §10.1-1314 or §10.1-1315 of the Virginia Air Pollution Control Law or (iii) the Department pursuant to §10.1-1307.3 of the Virginia Air Pollution Control Law.
 (9 VAC 5-80-140)

General Conditions

51. **General Conditions - Federal Enforceability** - All terms and conditions in this permit are enforceable by the administrator and citizens under the federal Clean Air Act, except those that have been designated as only state-enforceable.
(9 VAC 5-80-110 N)
52. **General Conditions - Permit Expiration** - This permit has a fixed term of five years. The expiration date shall be the date five years from the date of issuance. Unless the owner submits a timely and complete application for renewal to the Department consistent with the requirements of 9 VAC 5-80-80, the right of the facility to operate shall be terminated upon permit expiration.
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
53. **General Conditions - Permit Expiration** - The owner shall submit an application for renewal at least six months but no earlier than eighteen months prior to the date of permit expiration.
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
54. **General Conditions - Permit Expiration** - If an applicant submits a timely and complete application for an initial permit or renewal under this section, the failure of the source to have a permit or the operation of the source without a permit shall not be a violation of Article 1, Part II of 9 VAC 5 Chapter 80, until the Board takes final action on the application under 9 VAC 5-80-150.
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
55. **General Conditions - Permit Expiration** - No source shall operate after the time that it is required to submit a timely and complete application under subsections C and D of 9 VAC 5-80-80 for a renewal permit, except in compliance with a permit issued under Article 1, Part II of 9 VAC 5 Chapter 80.
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
56. **General Conditions - Permit Expiration** - If an applicant submits a timely and complete application under section 9 VAC 5-80-80 for a permit renewal but the Board fails to issue or deny the renewal permit before the end of the term of the previous permit, (i) the previous permit shall not expire until the renewal permit has been issued or denied and (ii) all the terms and conditions of the previous permit, including any permit shield granted pursuant to 9 VAC 5-80-140, shall remain in effect from the date the application is determined to be complete until the renewal permit is issued or denied.
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)

57. **General Conditions - Permit Expiration** - The protection under subsections F 1 and F 5 (ii) of section 9 VAC 5-80-80 F shall cease to apply if, subsequent to the completeness determination made pursuant section 9 VAC 5-80-80 D, the applicant fails to submit by the deadline specified in writing by the Board any additional information identified as being needed to process the application.
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
58. **General Conditions - Recordkeeping and Reporting** - All records of monitoring information maintained to demonstrate compliance with the terms and conditions of this permit shall contain, where applicable, the following:
- a. The date, place as defined in the permit, and time of sampling or measurements;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of such analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.
- (9 VAC 5-80-110 F)
59. **General Conditions - Recordkeeping and Reporting** - Records of all monitoring data and support information shall be retained for at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
(9 VAC 5-80-110 F)
60. **General Conditions - Recordkeeping and Reporting** - The permittee shall submit the results of monitoring contained in any applicable requirement to DEQ no later than March 1 and September 1 of each calendar year. This report must be signed by a responsible official, consistent with 9 VAC 5-80-80 G, and shall include:
- a. The time period included in the report. The time periods to be addressed are January 1 to June 30 and July 1 to December 31; and
 - b. All deviations from permit requirements. For purpose of this permit, deviations include, but are not limited to:
 - i. Exceedance of emissions limitations or operational restrictions;

- ii. Excursions from control device operating parameter requirements, as documented by continuous emission monitoring, periodic monitoring, or Compliance Assurance Monitoring (CAM) which indicates an exceedance of emission limitations or operational restrictions; or,
 - iii. Failure to meet monitoring, recordkeeping, or reporting requirements contained in this permit.
- c. If there were no deviations from permit conditions during the time period, the permittee shall include a statement in the report that "no deviations from permit requirements occurred during this semi-annual reporting period."

(9 VAC 5-80-110 F)

61. **General Conditions - Annual Compliance Certification** - Exclusive of any reporting required to assure compliance with the terms and conditions of this permit or as part of a schedule of compliance contained in this permit, the permittee shall submit to EPA and DEQ no later than March 1 each calendar year a certification of compliance with all terms and conditions of this permit including emission limitation standards or work practices for the period ending December 31. The compliance certification shall comply with such additional requirements that may be specified pursuant to §114(a)(3) and §504(b) of the federal Clean Air Act. The permittee shall maintain a copy of the certification for five (5) years after submittal of the certification. This certification shall be signed by a responsible official, consistent with 9 VAC 5-80-80 G, and shall include:
- a. The time period included in the certification. The time period to be addressed is January 1 to December 31;
 - b. The identification of each term or condition of the permit that is the basis of the certification;
 - c. The compliance status;
 - d. Whether compliance was continuous or intermittent, and if not continuous, documentation of each incident of non-compliance;
 - e. Consistent with subsection 9 VAC 5-80-110 E, the method or methods used for determining the compliance status of the source at the time of certification and over the reporting period;
 - f. Such other facts as the permit may require to determine the compliance status of the source; and

- g. One copy of the annual compliance certification shall be submitted to EPA in electronic format only. The certification document should be sent to the following electronic mailing address:

R3_APD_Permits@epa.gov

(9 VAC 5-80-110 K.5)

62. **General Conditions - Permit Deviation Reporting** - The permittee shall notify the Director, Piedmont Regional Office within four daytime business hours after discovery of any deviations from permit requirements which may cause excess emissions for more than one hour, including those attributable to upset conditions as may be defined in this permit. In addition, within 14 days of the discovery, the permittee shall provide a written statement explaining the problem, any corrective actions or preventative measures taken, and the estimated duration of the permit deviation. The occurrence should also be reported in the next semi-annual compliance monitoring report pursuant to Condition 60 of this permit. (9 VAC 5-80-110 F.2 and 9 VAC 5-80-250)
63. **General Conditions - Failure/Malfunction Reporting** - In the event that any affected facility or related air pollution control equipment fails or malfunctions in such a manner that may cause excess emissions for more than one hour, the owner shall, as soon as practicable but no later than four daytime business hours after the malfunction is discovered, notify the Director, Piedmont Regional Office by facsimile transmission, telephone or telegraph of such failure or malfunction and shall within 14 days of discovery provide a written statement giving all pertinent facts, including the estimated duration of the breakdown. Owners subject to the requirements of 9 VAC 5-40-50 C and 9 VAC 5-50-50 C are not required to provide the written statement prescribed in this paragraph for facilities subject to the monitoring requirements of 9 VAC 5-40-40 and 9 VAC 5-50-40. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the owner shall notify the Director, Piedmont Regional Office. (9 VAC 5-20-180 C)
64. **General Conditions - Failure/Malfunction Reporting** - The emission units that have continuous monitors subject to 9 VAC 5-40-50 C and 9 VAC 5-50-50 C are not subject to the 14 day written notification. (9 VAC 5-20-180 C and 9 VAC 5-50-50)
65. **General Conditions - Failure/Malfunction Reporting** - Each owner required to install a continuous monitoring system (CMS) or monitoring device subject to 9 VAC 5-40-41 or 9 VAC 5-50-410 shall submit a written report of excess emissions (as defined in the applicable subpart in 9 VAC 5-50-410) and either a monitoring systems performance report or a summary report form, or both, to the board semiannually. All semi-annual reports shall be postmarked by the 30th day following the end of each calendar semi-annual period (June 30th and January 30th). All reports shall include the following information:

- a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h) or 9 VAC 5-40-41 B.6, any conversion factors used, and the date and time of commencement and completion of each period of excess emissions;
- b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the source. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted;
- c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and
- d. When no excess emissions have occurred or the continuous monitoring systems have not been inoperative, repaired or adjusted, such information shall be stated in the report.

All malfunctions of emission units not subject to 9 VAC 5-40-50 C and 9 VAC 5-50-50 C require written reports within 14 days of the discovery of the malfunction.
(9 VAC 5-20-180 C and 9 VAC 5-50-50)

66. **General Conditions - Severability** - The terms of this permit are severable. If any condition, requirement or portion of the permit is held invalid or inapplicable under any circumstance, such invalidity or inapplicability shall not affect or impair the remaining conditions, requirements, or portions of the permit.
(9 VAC 5-80-110 G.1)
67. **General Conditions - Duty to Comply** - The permittee shall comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Air Act or the Virginia Air Pollution Control Law or both and is ground for enforcement action; for permit termination, revocation and reissuance, or modification; or, for denial of a permit renewal application.
(9 VAC 5-80-110 G.2)
68. **General Conditions - Need to Halt or Reduce Activity not a Defense** - It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
(9 VAC 5-80-110 G.3)
69. **General Conditions - Permit Modification** - A physical change in, or change in the method of operation of, this stationary source may be subject to permitting under State Regulations 9 VAC 5-80-50, 9 VAC 5-80-1100, 9 VAC 5-80-1605, or 9 VAC 5-80-2000 and may require a permit modification and/or revisions except as may be authorized in any approved alternative operating scenarios.
(9 VAC 5-80-190 and 9 VAC 5-80-260)

70. **General Conditions - Property Rights** - The permit does not convey any property rights of any sort, or any exclusive privilege.
(9 VAC 5-80-110 G.5)
71. **General Conditions - Duty to Submit Information** - The permittee shall furnish to the Board, within a reasonable time, any information that the Board may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Board copies of records required to be kept by the permit and, for information claimed to be confidential, the permittee shall furnish such records to the Board along with a claim of confidentiality.
(9 VAC 5-80-110 G.6)
72. **General Conditions - Duty to Submit Information** - Any document (including reports) required in a permit condition to be submitted to the Board shall contain a certification by a responsible official that meets the requirements of 9 VAC 5-80-80 G.
(9 VAC 5-80-110 K.1)
73. **General Conditions - Duty to Pay Permit Fees** - The owner of any source for which a permit under 9 VAC 5-80-50 through 9 VAC 5-80-300 was issued shall pay permit fees consistent with the requirements of 9 VAC 5-80-310 through 9 VAC 5-80-350 in addition to an annual permit maintenance fee consistent with the requirements of 9 VAC 5-80-2310 through 9 VAC 5-80-2350. The actual emissions covered by the permit program fees for the preceding year shall be calculated by the owner and submitted to the Department by April 15 of each year. The calculations and final amount of emissions are subject to verification and final determination by the Department. The amount of the annual permit maintenance fee shall be the largest applicable base permit maintenance fee amount from Table 8-11A in 9 VAC 5-80-2340, adjusted annually by the change in the Consumer Price Index.
(9 VAC 5-80-110 H, 9 VAC 5-80-340 C and 9 VAC 5-80-2340 B)
74. **General Conditions - Fugitive Dust Emission Standards** - During the operation of a stationary source or any other building, structure, facility, or installation, no owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions may include, but are not limited to, the following:
- a. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land;
 - b. Application of asphalt, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which may create airborne dust; the paving of roadways and the maintaining of them in a clean condition;

- c. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty material. Adequate containment methods shall be employed during sandblasting or similar operations;
- d. Open equipment for conveying or transporting material likely to create objectionable air pollution when airborne shall be covered or treated in an equally effective manner at all times when in motion; and,
- e. The prompt removal of spilled or tracked dirt or other materials from paved streets and of dried sediments resulting from soil erosion.

(9 VAC 5-50-90)

75. **General Conditions - Startup, Shutdown, and Malfunction** - At all times, including periods of startup, shutdown, and soot blowing, and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Board, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

(9 VAC 5-50-20 E)

76. **General Conditions - Alternative Operating Scenarios** - Contemporaneously with making a change between reasonably anticipated operating scenarios identified in this permit, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating. The permit shield described in 9 VAC 5-80-140 shall extend to all terms and conditions under each such operating scenario. The terms and conditions of each such alternative scenario shall meet all applicable requirements including the requirements of 9 VAC 5 Chapter 80, Article 1.

(9 VAC 5-80-110 J)

77. **General Conditions - Inspection and Entry Requirements** - The permittee shall allow DEQ, upon presentation of credentials and other documents as may be required by law, to perform the following:

- a. Enter upon the premises where the source is located or emissions-related activity is conducted, or where records must be kept under the terms and conditions of the permit.
- b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of the permit.

- c. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit.
- d. Sample or monitor at reasonable times' substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(9 VAC 5-80-110 K.2)

78. **General Conditions - Reopening For Cause** - The permit shall be reopened by the Board if additional federal requirements become applicable to a major source with a remaining permit term of three years or more. Such reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 9 VAC 5-80-80 F. The conditions for reopening a permit are as follows:

- a. The permit shall be reopened if the Board or the administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
- b. The permit shall be reopened if the administrator or the Board determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
- c. The permit shall not be reopened by the Board if additional applicable state requirements become applicable to a major source prior to the expiration date established under 9 VAC 5-80-110 D.

(9 VAC 5-80-110 L)

79. **General Conditions - Permit Availability** - Within five days after receipt of the issued permit, the permittee shall maintain the permit on the premises for which the permit has been issued and shall make the permit immediately available to DEQ upon request.

(9 VAC 5-80-150 E)

80. **General Conditions - Transfer of Permits** - No person shall transfer a permit from one location to another, unless authorized under 9 VAC 5-80-130, or from one piece of equipment to another.

(9 VAC 5-80-160)

81. **General Conditions - Transfer of Permits** - In the case of a transfer of ownership of a stationary source, the new owner shall comply with any current permit issued to the previous owner. The new owner shall notify the Board of the change in ownership within 30 days of the transfer and shall comply with the requirements of 9 VAC 5-80-200.
(9 VAC 5-80-160)
82. **General Conditions - Transfer of Permits** - In the case of a name change of a stationary source, the owner shall comply with any current permit issued under the previous source name. The owner shall notify the Board of the change in source name within 30 days of the name change and shall comply with the requirements of 9 VAC 5-80-200.
(9 VAC 5-80-160)
83. **General Conditions - Malfunction as an Affirmative Defense** - A malfunction constitutes an affirmative defense to an action brought for noncompliance with technology-based emission limitations if the requirements stated in Condition 84 are met.
(9 VAC 5-80-250)
84. **General Conditions - Malfunction as an Affirmative Defense** - The affirmative defense of malfunction shall be demonstrated by the permittee through properly signed, contemporaneous operating logs, or other relevant evidence that show the following:
- a. A malfunction occurred and the permittee can identify the cause or causes of the malfunction.
 - b. The permitted facility was at the time being properly operated.
 - c. During the period of the malfunction the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit.
 - d. The permittee notified the Board of the malfunction within two working days following the time when the emission limitations were exceeded due to the malfunction. This notification shall include a description of the malfunction, any steps taken to mitigate emissions, and corrective actions taken. The notification may be delivered either orally or in writing. The notification may be delivered by electronic mail, facsimile transmission, telephone, or any other method that allows the permittee to comply with the deadline. This notification fulfills the requirements of 9 VAC 5-80-110 F.2.b to report promptly deviations from permit requirements. This notification does not release the permittee from the malfunction reporting requirement under 9 VAC 5-20-180 C.
(9 VAC 5-80-250)

85. **General Conditions - Malfunction as an Affirmative Defense** - In any enforcement proceeding, the permittee seeking to establish the occurrence of a malfunction shall have the burden of proof.
(9 VAC 5-80-250)
86. **General Conditions - Malfunction as an Affirmative Defense** - The provisions of this section are in addition to any malfunction, emergency or upset provision contained in any applicable requirement.
(9 VAC 5-80-250)
87. **General Conditions - Permit Revocation or Termination for Cause** - A permit may be revoked or terminated prior to its expiration date if the owner knowingly makes material misstatements in the permit application or any amendments thereto or if the permittee violates, fails, neglects or refuses to comply with the terms or conditions of the permit, any applicable requirements, or the applicable provisions of 9 VAC 5 Chapter 80 Article 1. The Board may suspend, under such conditions and for such period of time as the Board may prescribe any permit for any grounds for revocation or termination or for any other violations of these regulations.
(9 VAC 5-80-190 C and 9 VAC 5-80-260)
88. **General Conditions - Duty to Supplement or Correct Application** - Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrections. An applicant shall also provide additional information as necessary to address any requirements that become applicable to the source after the date a complete application was filed but prior to release of a draft permit.
(9 VAC 5-80-80 E)
89. **General Conditions - Stratospheric Ozone Protection** - If the permittee handles or emits one or more Class I or II substances subject to a standard promulgated under or established by Title VI (Stratospheric Ozone Protection) of the federal Clean Air Act, the permittee shall comply with all applicable sections of 40 CFR Part 82, Subparts A to F.
(40 CFR Part 82, Subparts A-F)
90. **General Conditions - Asbestos Requirements** - The permittee shall comply with the requirements of National Emissions Standards for Hazardous Air Pollutants (40 CFR 61) Subpart M, National Emission Standards for Asbestos as it applies to the following: Standards for Demolition and Renovation (40 CFR 61.145), Standards for Insulating Materials (40 CFR 61.148), and Standards for Waste Disposal (40 CFR 61.150).
(9 VAC 5-60-70 and 9 VAC 5-80-110 A.1)
91. **General Conditions - Accidental Release Prevention** - If the permittee has more, or will have more than a threshold quantity of a regulated substance in a process, as determined by 40 CFR 68.115, the permittee shall comply with the requirements of 40 CFR Part 68.
(40 CFR Part 68)

92. **General Conditions - Changes to Permits for Emissions Trading** - No permit revision shall be required under any federally approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.

(9 VAC 5-80-110 I)

93. **General Conditions - Emissions Trading** - Where the trading of emissions increases and decreases within the permitted facility is to occur within the context of this permit and to the extent that the regulations provide for trading such increases and decreases without a case-by-case approval of each emissions trade:

- a. All terms and conditions required under 9 VAC 5-80-110, except subsection N, shall be included to determine compliance.
- b. The permit shield described in 9 VAC 5-80-140 shall extend to all terms and conditions that allow such increases and decreases in emissions.
- c. The owner shall meet all applicable requirements including the requirements of 9 VAC 5-80-50 through 9 VAC 5-80-300.

(9 VAC 5-80-110 I)

APPENDIX B

Administrative Compliance Order

APPENDIX B

In the Matter of:

Administrative Compliance Order

City of Hopewell, Virginia

Docket No: CAA-03-2016-0230DA

Appendix B

Third Party Audit Requirements

1. General Provisions. In accordance with Paragraph 60 of this Order, if the Facility is out of compliance with the 92% HAP reduction standard set forth in 40 C.F.R. § 63.446(e)(2-3) more than three (3) events in the eight month period following the Effective Date of this Order, HRWTF must conduct a third party audit of the Facility.

2. Each audit shall include an evaluation of the Facility's UNOX system, any other affected units at the Facility, and other compliance requirements, including, but not limited to, an evaluation of the Facility's: (a) operating procedures and practices; (b) maintenance procedures and practices; (c) monitoring, recordkeeping and reporting procedures and practices, in order to evaluate HRWTF's current compliance with its Title V permit for the Facility, the HRWTF Prevention, Maintenance, Operation and Notification ("PMON") Plan approved by EPA, and this Order.

3. Each audit shall be conducted by an independent environmental auditing firm ("Audit Firm") retained by HRWTF. Upon completion of the third party audit, the Audit Firm shall submit a written final report of its findings and recommendations to HRWTF and EPA, in accordance with paragraph 61 of this Order.

4. The requirements of this Appendix relating to the Audit Firm's qualifications, authority to conduct the audits, and production of the final audit report shall be incorporated into any contracts relating to the audits entered into by HRWTF and the Audit Firm(s).

In the Matter of:

Administrative Compliance Order

City of Hopewell, Virginia

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5. Because these audits are required by this Order, any violations discovered pursuant to the audits are not “voluntarily discovered” within the terms of EPA’s revised “Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations Policy” (“Audit Policy”), and are not voluntarily disclosed to EPA under EPA penalty policies. Accordingly, any such violations are ineligible for penalty mitigation or other favorable treatment under the Audit Policy or any EPA penalty policies on that basis. HRWTF agrees not to attempt to use any audit and/or privilege laws under the Commonwealth of Virginia to restrict EPA’s ability to obtain, review, or use the audit report(s) in any federal compliance or enforcement action.

6. Work Plan. Within 10 Days, of an event triggering the requirement to complete an Audit under this Order, the Audit Firm shall submit to EPA a proposed audit work plan (“Work Plan”) written by the Audit Firm for EPA review and approval. The proposed Work Plan shall include auditing protocols, procedures, and specific tasks for the audit, but not restrict the Audit Firm from conducting such additional inquiries as may be necessary to accomplish the purpose of the audit. The proposed Work Plan shall also include the schedule for performing the audit, and the names and resumes of the Audit Firm employees who will perform it.

7. EPA shall have 10 Days from the date of receipt of the Work Plan, or any revised Work Plan, to approve or comment on it. If EPA does not provide written comments to HRWTF regarding the original or any revised Work Plan within this 10-Day period, the Work Plan shall be deemed approved by EPA. If EPA comments on the Work Plan or any revised work plan,

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HRWTF shall incorporate the comments and submit a revised Work Plan to EPA within 7 Days after receiving the comments.

8. Audit Performance. Within seven (7) days of EPA's approval of the Work Plan, the Audit Firm shall commence the audit, which shall be performed in accordance with the approved Work Plan.

9. The Audit Firm shall have full access to, and unrestricted review of, any of HRWTF's records, documents and information that will assist the Audit Firm in determining HRWTF's current compliance with the listed statutes and regulations and the environmental permits. If necessary, the Audit Firm shall also review publically available state or federal records to determine HRWTF's compliance status.

10. The Audit Firm shall perform at least one on-site inspection at the Facility, and shall have access to all units, areas, equipment, and structures at the Facility during the inspection, and at all other times during normal operating hours. In its discretion, EPA may accompany the Audit Firm during the firm's inspection. At least seven (7) Days prior to any inspection conducted by the Audit Firm, HRWTF must provide notice to EPA of the inspection.

11. The Audit Firm shall observe and review the Facility's operations, including the actual UNOX control operation, parametric operating and monitoring records and maintenance procedures at the Facility, and may request that testing, sampling or other procedures be performed as needed to determine HRWTF's present compliance with the CAA and 40 C.F.R. Part 63 Subpart S and its Title V permit. HRWTF and the Audit Firm shall arrange for the requested testing, sampling or other procedures to be conducted. If HRWTF itself performs any

In the Matter of:

Administrative Compliance Order

City of Hopewell, Virginia

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of the requested procedures, EPA shall be given the opportunity to observe and review them. HRWTF must provide notice at least seven (7) days prior to EPA of any requested procedures conducted by HRWTF.

12. If in the course of performing the audit or hazard assessment, the Audit Firm discovers a condition at the Facility that, in the Audit Firm's independent judgment, constitutes an imminent and substantial endangerment to human health or the environment, the Audit Firm shall immediately notify HRWTF and EPA of the condition. HRWTF shall immediately address and ameliorate the condition and immediately consult with EPA as to how best to eliminate it.

13. Audit Report. Within 45 days after EPA's approval of the Work Plan, the Audit Firm shall complete the audit and deliver a written final audit report ("Final Report") to HRWTF and EPA.

14. The Final Report shall describe in details the results of the audit, including, but not limited to, the following:

a. The procedures followed and the information consulted and evaluated during the audit;

b. HRWTF's current compliance obligations at the Facility with regards to the CAA and 40 C.F.R Part 63 Subpart S and the Facility's Title V permit;

c. HRWTF's current compliance status at the Facility with regard to the CAA and 40 C.F.R Part 63 Subpart S and the Facility's Title V permit;

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City of Hopewell, Virginia

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d. Any potential noncompliance identified by the Audit Firm or HRWTF during the course of the audit that was corrected prior to the issuance of the Final Report, including the date(s) on which the noncompliance commenced and was corrected;

e. Recommendations for potential improvements or modifications to HRWTF's UNOX system or operating practices and procedures at the Facility to ensure compliance with the CAA and 40 C.F.R Part 63 Subpart S and the Facility's Title V permit; and

f. Any other information relating to HRWTF's compliance with the CAA and 40 C.F.R Part 63 Subpart S and the Facility's Title V permit that in the judgment of the Audit Firm merits review by EPA or HRWTF.

15. HRWTF shall address and fully correct as soon as possible any potential noncompliance identified in the Final Report. Within 30 Days after receiving the Final Report, HRWTF shall provide written notice to EPA describing what actions HRWTF has taken and/or will take to fully correct the noncompliance. If these actions will extend further than 30 Days from the receipt of the Final Report, HRWTF shall include in the written notice a detailed schedule for fully correcting the noncompliance.

16. If HRWTF believes that any identified potential noncompliance in the Final Report does not constitute actual noncompliance, HRWTF shall, as part of the written notice required in Paragraph 15 of this Appendix B to this Order, provide to EPA a detailed explanation of HRWTF's views.

17. Effect of Final Reports and Audits. Nothing in this Appendix or elsewhere in the Consent Decree shall be construed as an adoption of or an approval by the United States, EPA of

In the Matter of:

Administrative Compliance Order

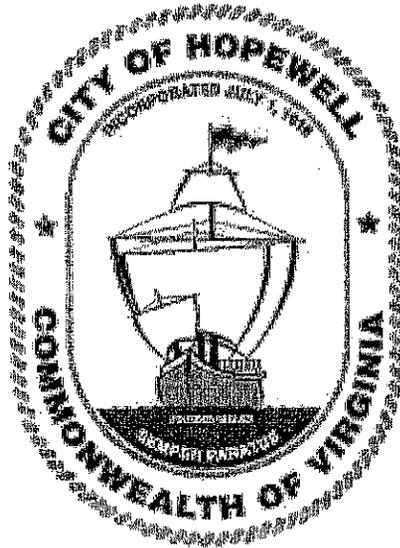
City of Hopewell, Virginia

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any opinions, findings, conclusions, or other asserted facts or statements contained in the Final Reports, or of any actions taken by HRWTF in response to the Final Report. The United States fully reserves its rights, in accordance with the terms of the Consent Decree, to address any noncompliance discovered through the audits. The completion and submission of the Final Reports shall not be construed as an admission, adoption, or approval by HRWTF of any opinions, findings, conclusions, or other statements contained in the Final Reports.

APPENDIX C

UNOX System Preventative Maintenance, Operation, and Notification Plan



UNOX System Preventative Maintenance, Operation, and Notification Plan

Hopewell Water Renewal

September 2016

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1.0 ACRONYMS AND ABBREVIATIONS

City - Refers to the City of Hopewell.

CMMS - Refers to Computerized Maintenance Management System which is the INFOR software used by the Hopewell Water Renewal to manage and track maintenance activities.

Conventional Pollutants – pollutants usually found in domestic, commercial or industrial wastes such as suspended solids, biochemical oxygen demand, chemical oxygen demand, pathogenic (disease-causing) organisms, adverse pH levels, oil and grease, ammonia, and phosphorus.

DEQ - Refers to the Virginia Department of Environmental Quality.

Direct Discharge Industries – Refers to the Hopewell industries that discharge directly to Hopewell Water Renewal without first combining with the domestic wastewater. The industries that are considered direct discharge industries are WestRock, Honeywell, Ashland Aqualon, Evonik Goldschmidt, and Virginia American Water Company.

E&I – Refers to the Electrical and Instrumentation Department at Hopewell Water Renewal.

EPA - Refers to the United States Environmental Protection Agency.

ERP – Refers to Hopewell Water Renewal's Enforcement Response Plan which outlines when, what and how enforcement action is taken against industries that violated Industrial Discharge Wastewater Discharge Permit requirements.

eO&M Manual – Refers to Hopewell Water Renewal electronic Operations and Maintenance Manual located on the plant's local area network.

GPD – Refers to Gallons per Day.

HAP – Refers to EPA designated compounds considered hazardous air pollutants.

IU – Refers to industrial user.

MACT – Refers to Maximum Achievable Control Technology.

Malfunction – As defined by 40 CFR §63.2, malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. In this PMON Plan, malfunctions include upset events relative to the biological treatment system (UNOX System).

MGD – Refers to Millions Gallons per Day.

NESHAP – Refers to National Emission Standards for Hazardous Air Pollutants.

NPDES – Refers to National Pollution Discharge Elimination System Permit.

O&M – Refers to Operations and Maintenance.

PM - Refers to Preventative Maintenance which are maintenance activities intended to prevent failures of assets (pumps, aerators, meters, etc.).

PMON Plan – Refers to a Preventative Maintenance, Operation, and Notification Plan.

POTW – Refers to Publicly Owned Treatment Works, which means a wastewater treatment facility owned and operated by a municipal jurisdiction.

RACT – Refers to Reasonably Available Control Technology.

RAS – Refers to Return Activated Sludge, which is the biomass from the treatment plant that is returned into the treatment process to maintain the necessary level of active biomass to treat the level of pollutants entering the treatment plant.

SCADA – Refers to Supervisory Control and Data Acquisition system, which is computerized data acquisition systems used by process operators to monitor and control plant operations.

SIU – Refers to Significant Industrial Users, which are industries that meet the federal definition of an industry that could cause interference of the wastewater treatment operations at a publicly owned treatment works like Hopewell Water Renewal.

Slug Discharge Control Plan – A plan to control slug discharges of any pollutant, including BOD, released in a discharge at a flow rate or concentration which could cause a violation of the general or specific discharge prohibitions of an IU permit.

Slug Discharge or Slug Load - Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge, which has a reasonable potential to cause interference or pass through, or in any other way violate the POTW's regulations, local limits or permit conditions.

SOP - Standard Operating Procedures which refer to written procedures that pertain to specific activities employed in the operation and maintenance of the water renewal plant.

SSM – Refers to Startup, Shutdown, and Malfunction Plan.

Title V – Refers to Air pollution control permit. VADEQ Title V Permit No 50735.

Upset – As defined by VPDES regulations, upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

USEPA – Refers to United States Environmental Protection Agency.

VGP – Refers to Vent Gas Purity associated with the UNOX System.

VOC – Refers to Volatile Organic Compounds.

VPDES – Refers to Virginia Pollution Discharge Elimination System Permit.

Work Order - Refers to a document (paper or electronic) that is used to assign work and to record the results of the completed work.

2.0 GOAL

The goal of this Preventative Maintenance, Operation, and Notification (PMON) Plan (Plan) is to prevent UNOX System and related process and control device malfunctions and to minimize downtime of systems that affect HAP reduction and organic effluent limitations.

3.0 PURPOSE

The purpose of this Plan is to provide a compilation of Hopewell Water Renewal's procedures for air and water pollution control practices for minimizing operational situations or circumstances which could adversely affect compliance with HAP reduction and organic effluent limitations, and for minimizing the amount and duration of any noncompliant emissions and discharges that may occur.

4.0 INTRODUCTION

4.1 BACKGROUND

The City of Hopewell, Virginia currently operates a publicly owned treatment works (POTW) which treats domestic and industrial wastewater. This facility is known as Hopewell Water Renewal and is classified as a major source of air pollutant emissions based on potential emissions of volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and carbon monoxide (CO). The facility operates under a Virginia Title V Operating Permit which is a compilation of the State and Federal CAA regulations applicable to the facility. This air quality operating permit was issued to the facility (now operating as Hopewell Water Renewal) by the Virginia Department of Environmental Quality (DEQ) under Registration Number 50735.

Hopewell Water Renewal is subject to the National Emission Standards for Air Pollutants (NESHAP) for Publicly Owned Treatment Works, 40 CFR Part 63, Subpart VVV. Because Hopewell Water Renewal provides treatment of a Pulp and Paper NESHAP regulated wastewater stream (referred to as the "HAP stream") received from the WestRock pulp and paper mill, Hopewell Water Renewal is responsible for operating its biological treatment system (UNOX System) in accordance with the Pulp and Paper NESHAP requirements under 40 CFR 63, Subpart S, referred to as the Maximum Achievable Control Technology (MACT) standard. These requirements are covered in Paragraphs 34-42 of the Title V operating permit.

Hopewell Water Renewal discharge is also regulated by a Virginia Pollution Discharge Elimination (VPDES) Permit number VA0066630 issued by DEQ. This permit limits the amount of applicable pollutants that may be discharged into the waters of the state. The wastewater treatment plant and processes are designed to meet these limitations.

Hopewell Water Renewal has had past incidents where plant upsets have caused inadequate treatment. These incidents were caused by slug discharge events from industrial users (IUs) without notice and were not detected prior to being introduced to the facility.

4.2 PMON PLAN

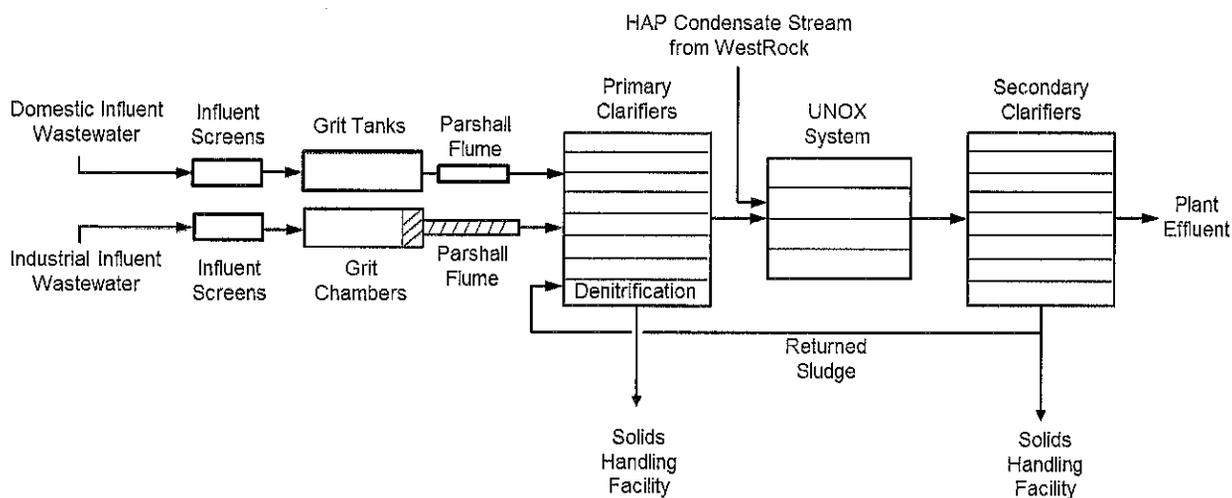
This PMON Plan compiles the plans and procedures used by Hopewell Water Renewal to fulfill the Purpose of the Plan stated in Section 3.0.

Consequently, this PMON focuses on:

- Preventative maintenance procedures for ensuring that the facility equipment is maintained in accordance with manufacturers' specifications. (Section 7.0)
- Operating procedures to ensure the facility is operated in accordance with manufacturers' specifications and good engineering practices. (Section 8.1 – 8.5)
- Monitoring procedures to regularly evaluate compliance with applicable permit requirements and to determine if the plant is operating normally or not. (Section 8.1 – 8.5)
- Procedures aimed at preventing IUs from causing or contributing to discharges that may cause Hopewell Water Renewal to violate applicable permit requirements. (Section 8.6 and Section 9.0)
- A corrective action program to minimize permit violations in the event of an upset or malfunction, and to correct upsets or malfunctions as soon as practicable. (Section 10.2)
- Procedures to evaluate and correct IU practices that have been found to cause or contribute to Hopewell Water Renewal's violation of applicable permit requirements. (Section 10.3)

5.0 PROCESS DESCRIPTION

Hopewell Water Renewal currently treats an average influent wastewater flow of approximately 25 - 30 million gallons per day (MGD). Raw wastewater (plant influent) consisting of domestic and industrial wastewater is processed by preliminary, primary, and secondary treatment (UNOX System) prior to effluent discharge into Gravelly Run which flows into the James River. A simplified process flow diagram is provided below:



5.1 WET TREATMENT PROCESS

The domestic and industrial influent wastewater is segregated as it enters the facility where both undergo separate preliminary treatment consisting of screening and grit removal. Following grit removal, the wastewater streams flow through Parshall flumes for flow measurement. The Parshall flume for the industrial wastewater is covered in order to control VOC emissions in accordance with VOC RACT requirements. The wastewater streams then flow to primary treatment, which involves sedimentation of the settleable solids. Hopewell Water Renewal uses rectangular primary clarifiers to settle suspended solids in the wastewater. Three of the primary clarifiers are used to treat domestic wastewater while four others treat industrial wastewater. These streams combine and then mix with the return activated sludge (RAS) from the UNOX System in the denitrification basin (a converted primary clarifier) where influent nitrates are reduced to nitrogen gas. After denitrification, the wastewater continues along to secondary treatment where a separate industrial wastewater stream (referred to as the MACT HAP stream from WestRock) regulated under the provisions of 40 CFR 63, Subpart S) is introduced (via the MACT HAP condensate line). This regulated wastewater stream is from WestRock's pulping process and is directly discharged via a hard-piping system from WestRock's collection/feed tank to below the liquid surface within the UNOX System.

The secondary treatment process at Hopewell Water Renewal consists of biological treatment (UNOX System) followed by final (secondary) clarifiers for settling of the biological solids. The purpose of the UNOX System is to eliminate the degradable organics in the wastewater. The UNOX System is a high purity oxygen (HPO) activated sludge system employed to biodegrade

various organic compounds, including HAPs, in the wastewater streams. This system provides stable organics reduction efficiency under conditions of high organic loadings and reduced aeration periods. This feature is important to Hopewell Water Renewal because of the high organic loading typically encountered as a result of industrial activity at Hopewell. The major components of the UNOX System include aeration tanks, which have fixed concrete covers to maintain a gas tight enclosure, followed by secondary clarifiers. The cover is provided to ensure a closed system that contains the high-purity oxygen gas so that most of the oxygen dissolves into the water

In the UNOX System, microorganisms break down the organics as the organic carbon provides a source of energy and carbon for cell synthesis. The biological treatment process biodegrades the HAPs into non-HAP compounds (carbon dioxide (CO₂) and water). Thus, the VOCs or HAPs in the wastewater are a source of organic carbon which is essential for the proper operation of the biological system. The resulting biological floc (mixed liquor or biomass) is then allowed to settle in the secondary clarifiers.

Following the biological treatment process, the overflow from the secondary clarifier weirs (referred to as plant effluent) is routed to a re-aeration unit and then discharged to Gravelly Run and the James River.

5.2. SOLIDS HANDLING PROCESS

Significant amounts of sludge are produced from the wastewater treatment process at Hopewell Water Renewal. Solids are collected and removed from both the primary and secondary clarifiers for processing and disposal. Because the solids have high moisture content, they require thickening and dewatering for volume reduction prior to ultimate disposal. The solids handling facilities at the plant include gravity thickeners, dissolved air flotation (DAF) thickeners, sludge holding tanks, centrifuges, and a multiple hearth furnace.

The solids handling process begins with concentrating the sludges in the gravity thickeners and the DAF thickeners. Sludge generated from the primary clarifiers is sent to the gravity thickeners. The waste activated sludge from the UNOX System is sent to the primary clarifiers or can alternatively be sent to the DAF thickening units. The gravity thickeners employ a rake type sludge collection mechanism (which rotates slowly through each tank) which enhances sludge settleability and compactability and conveys the thickened sludge to a draw off-sump. To achieve waste activated thickened sludges, the DAF thickeners work in a different manner as air bubbles are released and attach to flocs of sludge. This concentrates the sludge by producing a layer of floating solids at the thickener's surface. Travelling blades then scrape off the thickened solids into a collection sump.

Prior to additional processing, the float (supernatant) from the DAF thickening units and the concentrated (underflow) sludges from the gravity thickeners are combined in the sludge holding tanks. The supernatant from the DAF thickening units and overflow from the gravity thickeners is pumped via the supernatant return wet well back to the domestic preliminary treatment system.

The thickened sludges from the sludge holding tanks are pumped to centrifuge units for dewatering. Currently, two centrifuges are in service at the plant, but connections are in place

for the future installation of a third centrifuge. Dewatered sludge cake from the centrifuges is conveyed directly to the multiple hearth furnace or transferred to the sludge storage pad for temporary storage. The liquid removed from the sludge in the centrifuges (centrate) is sent to the domestic preliminary treatment system.

The multiple hearth furnace used at Hopewell Water Renewal is rated at approximately 6,500 pounds of dry solids per hour at 30 percent solids. The furnace has a series of hearths which the sludge passes through in a vertical direction. In the upper hearths, moisture is evaporated and exhaust gases are cooled. Volatile gases and solids are burned in the intermediate hearths, and non-volatile solids are cooled in the lower hearths. Air pollution control (APC) devices on the furnace minimize emissions into the ambient air. A multi-venturi scrubber, is utilized in succession to control particulate matter emissions.

An auxiliary fuel-fired afterburner was installed as a supplemental heat source to make steam in a waste heat boiler for sludge dewatering purposes. In 1997, the waste heat boiler was removed following the installation of Hopewell Water Renewal's current centrifuge dewatering system, which does not require heat and which replaced the Porteous heat treatment dewatering process. Consequently, the afterburner is no longer used.

For fuel and operational efficiency, Hopewell Water Renewal currently operates the multiple hearth furnace approximately 65% of the time. Sludge is burned Monday through Friday in the furnace until there is little to no sludge inventory and is not operated on weekends. Once sludge inventory is depleted, the furnace is shut down. Centrifuge dewatered sludge is then placed on the covered sludge storage pad until the pad is near capacity. At that time, the furnace is restarted. Sludge from the centrifuges is mixed with the storage pad sludge and fed to the furnace at its loading capacity.

6.0 PERMIT REQUIREMENTS

This section provides a brief overview of the applicable permit requirements related to HAP reduction and organic effluent limitations. The Title V permit provides the parameters and procedures necessary to meet the MACT HAP reduction standard, as referenced by 40 CFR 63 Subpart S, while the VPDES permit outlines the level at which the wastewater treatment plant must operate.

6.1 TITLE V PERMIT

Hopewell Water Renewal's Title V Operating Permit was issued by the Virginia Department of Environmental Quality (DEQ). The Title V Operating Permit requirements pertaining to the operation of the UNOX System and associated monitoring equipment are based on achieving compliance with 40 CFR 63 Subpart S (i.e., 92 percent HAP reduction across the UNOX System). Monitoring parameters from the Title V permit are further discussed in Section 8.4. More detailed information on UNOX operations and air quality requirements are found in the following documents:

- MACT Compliance Plan (which details how to comply with 40 CFR 63 Subpart S)
- Startup, Shutdown and Malfunction (SSM) Plan for the UNOX System

6.2 VPDES DISCHARGE PERMIT

The VPDES permit, as discussed further in Section 8.0, has many requirements to ensure that proper facility operation and maintenance is achieved, and that upstream dischargers are regulated. Proper operation and maintenance of the wastewater facility helps ensure compliance with the VPDES permit limitations and ultimately the Title V permit. In addition, some VPDES monitoring parameters can provide an indication of whether the system is operating normally and achieving the required HAP reduction. The VPDES permit limitations that are relevant to the UNOX System (i.e., that pertains to organic removal) are for carbonaceous biochemical oxygen demand (CBOD₅). For reference, soluble chemical oxygen demand (s-COD) is monitored by Hopewell Water Renewal for similar reasons but is not a VPDES permit requirement. The permit limits for CBOD₅ are 35 mg/l (monthly average) and 48 mg/l (weekly average). Review of the CBOD₅ data suggests that when the final effluent measures 37 mg/l or below (on a daily basis), then the 92 percent HAP reduction required by the Title V operating permit is also achieved.

7.0 PREVENTATIVE MAINTENANCE

Preventative maintenance is important to achieving proper system operation and meeting permit limitations. Without a successful preventative maintenance program, Hopewell Water Renewal would experience equipment failures that could lead to permit violations. The key components to our successful program are a reliable and properly trained staff and a good asset management system. Because Hopewell Water Renewal's preventative maintenance system has been so successful, equipment failures rarely cause permit violations or excess emissions.

Hopewell Water Renewal maintains a knowledgeable, well trained, and equipped maintenance and electrical and instrumentation staff. The maintenance staff works five days per week with staff on-call during non-scheduled work hours to handle emergency situations. The plant's goal is to eliminate as much emergency situations as possible by maintaining a robust preventative maintenance plan. All maintenance follows manufactures' recommendations. In addition to the plant's maintenance staff, multiple contractors are used to perform maintenance activities that are beyond the plant's staff and equipment capabilities.

Currently, Hopewell Water Renewal employs a computerized maintenance management system (CMMS) to create and track work orders on all of the plant's process equipment (assets). Hopewell Water Renewal uses INFOR as its CMMS and asset management software. Routine (preventative) maintenance or standing work orders are placed in the system by asset, by the Maintenance and Electrical (M&E) Superintendent as recurring items. The bulk of the maintenance staff work consists of the preventative maintenance activities.

Non-routine and emergency work orders are entered into the CMMS when necessary. As the work orders are generated by the system, the M&E Superintendent assigns the work to the appropriate maintenance team or contractor for execution. After the completion of the work, the supervisor is notified and information on the work conducted, dates, costs, time required to conduct the work, and asset information is entered into the system for future tracking of equipment reliability and maintenance costs.

The bulk of the biological treatment of the wastewater occurs in the UNOX System. Because it is a biological system, there is very little mechanical equipment involved, with the exception of the oxygen generation facilities. Most of the UNOX equipment involves instrumentation designed to monitor and record the biological activity. Therefore, the preventative maintenance for the UNOX System primarily involves calibration and maintenance of the instruments.

The oxygen generation (O₂) facility is a key mechanical component of the UNOX System. It undergoes an annual maintenance shutdown, which is scheduled (when possible) during WestRock's annual maintenance shutdown. Because the O₂ facility provides oxygen to the UNOX System it serves a critical function. However, liquid oxygen can be purchased from contracted vendors as a supplemental or back-up source of oxygen as necessary for UNOX System operation.

The calibration and maintenance schedules for the UNOX System CMS components listed below follow the manufacturer's instructions which are maintained in the Maintenance and Electrical

Superintendent's Office and the electronic operations and maintenance (eO&M) manual. In general, calibration and preventative maintenance is conducted as follows:

Equipment	Frequency	Turn Around Time
Influent wastewater flow meters (2)	Annually by third party Annually by Hopewell Water Renewal staff	All plant flow meters calibrated same day
Vent gas purity analyzers (4)	Bi-weekly by Hopewell Water Renewal staff and as needed	1 hour*
Oxygen supply flow measurement device	Annually by Hopewell Water Renewal staff	1 hour*
Oxygen storage tank level gauges	Annually by Hopewell Water Renewal staff	1 hour*
Oxygen plant	Annually by contractors	Usually 1 week duration during WestRock annual maintenance shutdown, if possible.
<p>*Assuming no problems found. If problems are found, analysis of the problem is made at the time and corrections are made as soon as possible. If parts are needed, then part order is made within 24 hours. If necessary, liquid oxygen is fed to UNOX until repairs can be completed. Standing purchase order is maintained with liquid oxygen supplier.</p>		

8.0 OPERATION AND MONITORING

This section describes the operating and monitoring procedures followed by HWRTF to meet Title V permit and VPDES requirements relative to HAP reduction and organic effluent limitations.

8.1 VPDES PERMIT REQUIREMENTS

The VPDES permit contains language that addresses proper operation and maintenance of the treatment plant. Part II, Section Q states the following:

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

Part II, Section S also contains the following requirement to mitigate treatment problems:

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

Through monthly monitoring reports, Hopewell Water Renewal notifies DEQ of and DEQ assesses Hopewell Water Renewal's compliance with the VPDES permit limitations. In addition, through periodic plant inspections, DEQ reviews the operation and maintenance activities conducted at the plant. Compliance with the VPDES permit also helps to ensure compliance with the HAP reduction related requirements of the Title V permit. Specific aspects of VPDES permit requirements related to operation and monitoring are referenced throughout the discussion in the sections below.

8.2 UNOX SYSTEM OPERATION

As required by the VPDES permit, Hopewell Water Renewal maintains an O&M Manual that describes the equipment and the equipment operation and maintenance. In 2009, Hopewell Water Renewal conducted a major overhaul of the O&M manual and developed an electronic manual that is accessible by all operator and maintenance staff over the plant's local area network (LAN). The manual is organized by process area and has a section titled "UNOX System". Within this section, the manual contains training guides, standard operating procedures (SOP), and compliance plans. The information contained in the O&M manual that applies to the UNOX operation is as follows:

- Oxygen Plant SOP
- UNOX Basin SOP
- Denitrification Basin SOP
- UNOX System Air Quality Compliance Guide
- UNOX Emergency Startup, Shutdown, and Malfunction (SSM) Plan
- UNOX System Aeration Basin Control Manual
- Maximum Achievable Control Technology (MACT) Compliance Plan
- Title V Permit Compliance Plan
- Startup, Shutdown, and Malfunction (SSM) Plan

Because the UNOX System operates continuously, startup and shutdown plans have not been developed for the UNOX System. However, standard operating procedures (SOPs) and checklists have been developed for various types of "malfunction incidences" for the UNOX System. A UNOX "malfunction incident" is considered to be a sudden, infrequent and not reasonably preventable event that would cause the UNOX System to not operate in a normal manner and that could potentially result in violations of the Title V operating permit (including applicable requirements of 40 CFR Part 63 Subpart S) and/or the VPDES permit. The SSM Plan lists the following events as malfunctions of the UNOX System including: electrical malfunction (power loss), oxygen system failure, loss of control system (that operates the UNOX System), and inhibitory loadings/organic overload. If any of these events occur, the operational procedures for dealing with the event are documented in the SSM Plan for the UNOX System. These procedures include identifying the specific SOP for the event, implementing corrective actions, and completing an incident checklist.

8.3 UNOX SYSTEM MONITORING (SAMPLING AND ANALYSIS)

Also included in the eO&M Manual are procedures for collecting the daily and quarterly wastewater samples (including for methanol analysis, as required). These SOPs are located under the Administration section, subsection Technical Services. Sampling and analysis also provides a snapshot of the quality of the wastewater entering and exiting the UNOX System.

Wastewater samples are collected daily at three monitoring locations: primary clarifier effluent or influent to the denitrification basin, WestRock HAP stream, and secondary clarifier effluent.

Certain operating circumstances dictate that the following additional wastewater analysis be conducted:

- In the event of a suspected inhibitory loading event, the daily wastewater samples collected at the primary clarifier effluent, WestRock HAP condensate line, and secondary clarifier effluent should be analyzed for methanol.
- If the LEL meters are alarming, the daily wastewater sample collected at the WestRock HAP condensate line should be analyzed for turpentine.

In order to monitor each of the industries' discharges and hence, their conformance with the goals and objectives of the pretreatment program, upstream wastewater sampling and analysis is routinely conducted. Industries that are direct dischargers to Hopewell Water Renewal (Honeywell, Ashland Aqualon, WestRock, Evonik Goldschmidt, and Virginia American Water Company) are sampled 5 days per week for conventional pollutants. Permanent flow meters and sampling stations are located at each of these industrial facilities. This data is used to determine compliance with pretreatment permit requirements and for monthly billing. In addition to the daily sampling, each of these industries is monitored monthly for priority pollutants. Significant Industrial Users (SIU), discharging through the City's domestic infrastructure are sampled one week per month for conventional pollutants and quarterly for priority pollutants. The Sampling SOP Manual guides the sampling at each sampling location and outlines the frequency and documentation requirements. The manual follows EPA and DEQ monitoring guidelines for sample volumes, preservatives, holding time, and calibration of instruments and is a part of the eO&M Manual.

All conventional pollutants are analyzed in Hopewell Water Renewal's in-house laboratory, which utilizes EPA and Standard Methods analytical protocols. Hopewell Water Renewal Technical Services Quality Manual (also located in the Technical Services subsection of the eO&M Manual) documents the policies and references the procedures to ensure test data generated are scientifically acceptable as defined by the method performance criteria. In addition, detailed SOPs are developed for each analytical method. All generated data is maintained in an electronic Laboratory Information Management System (LIMS) to ensure data integrity. Hopewell Water Renewal's laboratory is certified under the Virginia Laboratory Certification requirements for non-commercial laboratories.

All priority pollutant analyses are conducted by a Virginia Certified commercial laboratory. Under the Virginia Laboratory Certification regulations, the laboratory must meet strict quality assurance/quality control requirements.

8.4 UNOX SYSTEM MONITORING PARAMETERS

Hopewell Water Renewal operators closely monitor the UNOX System to determine if the plant is operating normally. Certain parameters found in the Title V permit require that wastewater samples be analyzed (for methanol) if the relevant parameters are out of range. Operating experience has identified other parameters that the plant evaluates as indicators of possible declining plant performance. When these parameters are found to be out of range, the plant typically takes further actions, on a case-by-case basis, to evaluate the potential issue. The parameters utilized for these two purposes includes the following:

- Total Wastewater Inlet Flow Rate
- Regulated Wastewater Inlet Flow Rate
- Horsepower of UNOX Aerators
- UNOX Oxygen Supply Flow Rate
- Vent Gas Purity (VGP)
- Soluble Chemical Oxygen Demand (s-COD)
- Lower Explosion Limit (LEL)
- Carbonaceous Biochemical Oxygen Demand (CBOD₅)¹
- Adenosine Triphosphate (ATP)

A description of the purpose of each parameter Hopewell Water Renewal uses to evaluate UNOX operations is provided below.

Total wastewater inlet flow rate and regulated inlet wastewater flow rate are measured by flow meters which are maintained on the flows entering the UNOX basin. The instantaneous flow measurement is visible through the SCADA and is recorded continuously. Monitoring of the flows into the basin allows the operators to assess if the basin is at or near capacity and to calculate the return rate of the activated sludge or biomass.

Horsepower of UNOX Aerators is tracked in the SCADA system which provides an instantaneous view of the surface aerators in operation in each UNOX treatment train so that the operators can monitor and control the aeration equipment in the basin. The aerators are a device to drive the oxygen into the wastewater. Only the total horsepower of all aerators (and not the individual aerators) is continuously recorded.

UNOX Oxygen Supply Flow Rate is measured by two flow meters; one at the oxygen generation plant and one at the UNOX basin itself. The meters continuously record the volume of oxygen fed to the basin. The pressure of the oxygen feed into the UNOX basin along with the vent gas purity readings are evaluated by the operators in order for the operators to ensure that enough oxygen is provided to the biomass to accomplish adequate biodegradation of the organics.

¹ A case-by-case evaluation is conducted when effluent CBOD₅ is present at elevated levels.

Vent Gas Purity (VGP) is a measurement of the excess (unutilized) oxygen vented from the UNOX System. The daily oxygen fed to the UNOX basin is more than the biomass can use and therefore, the excess oxygen is continuously monitored and recorded in the vent gas from the basin. High VGP levels can indicate that the biomass activity is inhibited since less oxygen is being consumed.

Soluble Chemical Oxygen Demand (s-COD) is used as a surrogate to the traditional wastewater and water quality indicator of Carbonaceous Biochemical Oxygen Demand (CBOD₅) data since the analytical method for s-COD provides a daily result compared to the CBOD₅ method which provides results after five days. Although s-COD does not correlate exactly with CBOD₅, it is a reasonable surrogate parameter. Further, at Hopewell Water Renewal, discharge samples are analyzed daily for s-COD. Hopewell Water Renewal operators have used differing s-COD levels over time as an indication that the water renewal plant may be inadequately treating wastewater. During a recent evaluation, Hopewell Water Renewal determined that s-COD levels of 223 mg/l or more coupled with VGP levels above 52 percent provide a possible indication that the water renewal plant may not be achieving 92 percent HAP reduction. In subsequent discussions with EPA, the agency has requested that s-COD levels of 180 mg/l or more coupled with VGP levels above 45 percent should be used instead.

Lower Explosion Limit (LEL) meters are safety devices placed on each UNOX train to continuously record the headspace for combustible gas. The meters contain dual alarm levels, one set at 25 percent of the lower explosive limit and the other at 50 percent LEL. When the LEL level reaches 25 percent, the oxygen feed is turned off and the purge air blowers start to purge the combustible gas mixture from the system. At the 50 percent level, the aerators shut off, oxygen feed is turned off, and purge air blowers start. Operators can override these automatic systems, if they believe the cause of the LEL alarms is not due to combustible gas.

CBOD₅ is the traditional wastewater and water quality indicator of water pollution. Wastewater permits and treatment plant design are based on meeting a CBOD₅ or BOD₅ (biochemical oxygen demand) level measured in milligrams per liter (mg/l). Operators evaluate this data on a daily basis as an indicator of the overall recent health of the treatment system.

The Hopewell Water Renewal laboratory also samples and analyzes the Adenosine Triphosphate (ATP) levels of the UNOX return activated sludge (RAS) and each of the primary industries discharging to the treatment plant. Hopewell Water Renewal uses the ATP test on a daily basis to:

- Confirm that the biomass is active. Operators used mixed liquor suspended solids (MLSS) testing for decisions on wasting and recycling of the biomass. The ATP test on the UNOX influent (or return activated sludge) provides additional indication that the biomass is active. This data is not always reliable, however, and can indicate that the biomass activity is inhibited when it is not.
- Provide data to identify the industry(ies) that may have discharged an inhibitory material during plant upsets. Since Hopewell Water Renewal does not have a definitive method to provide an early warning for when the plant may become upset, the test must be conducted daily in order for data to be available to determine cause. During plant upset

conditions, additional wastewater samples are collected for chemical analyses to determine what compound may have been in the discharge to cause the upset.

8.5 UNOX SYSTEM MONITORING (MACT COMPLIANCE DEMONSTRATION PARAMETERS)

The following describes the monitoring approach proposed by Hopewell Water Renewal to assess compliance with the 92 percent HAP reduction requirement in the Title V permit:

1. Determine each day whether the UNOX System is operating normally as follows:
 - a. Daily s-COD is less than or equal to 180 mg/l or daily average VGP is less than or equal to 45 percent.
 - b. Daily average Lower Explosive Limit is less than or equal to 25 percent.
2. Monitor the UNOX System operating parameters as follows:
 - a. UNOX oxygen supply flow rate: ≥ 65 tons/day
 - b. Total horsepower of UNOX aerators: ≥ 900 total aerator horsepower
Minimum horsepower per train in service: ≥ 225 total aerator horsepower
 - c. Regulated wastewater inlet flow rate: ≤ 1 mgd
 - d. Total wastewater inlet flow rate: ≤ 50 mgd
3. Analyze the wastewater samples for methanol so that the HAP reduction can be calculated (using the Percent Reduction Methanol Procedure) for each day that:
 - a. The UNOX System is suspected of not operating normally (per item 1), or
 - b. The proposed operating parameters are outside of the levels indicated in item 2.

8.6 PRETREATMENT PROGRAM

Hopewell Water Renewal is required by its VPDES discharge permit to implement a pretreatment program. This program provides the primary mechanism to prevent system upsets by upstream industrial users. The authority for the Hopewell Water Renewal Director to operate a pretreatment program and issue industrial user permits is provided through the City of Hopewell Sewer Use Ordinance. The program was initially approved by DEQ in 1984 and incorporates industrial permitting, discharge prohibitions, local limits, and enforcement in accordance with federal and state requirements.

The primary purpose of the pretreatment program is to control pollutants which could “pass through” or “interfere” with normal POTW operations. Under that program, industrial users are required to provide adequate information on the volume and quantity of industrial waste discharged to the wastewater system. Hopewell Water Renewal implements a permit system to regulate the discharges of significant industrial users (SIU). This permit system requires companies to submit information, obtain, and comply with a permit to control industrial discharges. A permit is required in order for an SIU to discharge to Hopewell Water Renewal.

8.6.1 Industrial User Permits

There are several requirements in the industrial wastewater discharge permits that require industry to properly operate and maintain facilities to meet permit requirements and to provide notification when there are planned or unplanned changes to the wastewater discharge. The sections of the permit that address the above are:

Permit Section	Title	Requirement(s)
Standard Conditions Part II, Section D	Duty to Mitigate	IU must take reasonable step to minimize or correct any adverse environmental impact caused by the industrial discharge. This includes additional sampling.
Standard Conditions Part III, Section A	Proper Operation and Maintenance	IU must properly operate and maintain all facilities and systems to achieve compliance with the permit.
Standard Conditions Part III, Section B	Duty to Halt or Reduce Activity	Hopewell Water Renewal Director may restrict the IUs discharge to protect the plant and may require installation of storage or equalization of flow.
Standard Conditions Part V, Section A	Planned Changes	IU must notify Hopewell Water Renewal at least 90 days prior to any planned substantial changes that might alter the nature, quality or volume of wastewater.
Standard Conditions Part V, Section B	Anticipated Non-Compliance	IU must give advance notice to Hopewell Water Renewal of any planned activity which will result in permit non-compliance.
Standard Conditions Part V, Section G	Accidental Discharge Report	IU must immediately notify Hopewell Water Renewal when there is an occurrence of an accidental discharge of compatible or incompatible pollutants that may affect Hopewell Water Renewal treatment.
Standard Conditions Part V, Section	Air Pollutants in CAA Regulation Wastewaters	IU must notify Hopewell Water Renewal if any hazardous air pollutant-containing wastewater is being or proposed to be discharged to Hopewell Water Renewal in order to ensure that proper controls are employed.

8.6.2 Slug Discharge Control Plans

For new industrial dischargers and once a year for existing industrial dischargers, Hopewell Water Renewal evaluates whether or not the IU needs a slug discharge control plan. Slug plans are required by those industries having the ability to cause interference with the plant process. If a slug discharge control plan is needed, the IU must provide facilities to prevent the accidental discharge of prohibited materials to Hopewell Water Renewal, and must have detailed plans on file at Hopewell Water Renewal showing facilities and operating procedures to provide protection. The slug plan must also incorporate procedures and contact information for

immediately notifying Hopewell Water Renewal of slug discharges including any discharge that would violate a general permit prohibition (i.e., interference or pass through).

The language contained in the IU permit regarding slug discharges is as follows:

Each industrial user having the ability to cause interference with the POTW or to violate the regulatory provisions of the City code shall provide protection from accidental discharge to the POTW of prohibited materials or other substances regulated by this chapter. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the owner or users own cost and expense. All industrial users whose wastewater includes or could include compatible or incompatible pollutants in amounts great enough to cause interference with the POTW must have detailed plans on file at Hopewell Water Renewal showing facilities and operating procedures to provide this protection. Plans are subject to the approval of the director. Existing sources that store hazardous substances shall not contribute to the POTW after the effective date of the sewer use ordinance unless a spill prevention plan has been approved by director. New sources shall not begin discharge unless the need for a slug discharge control plan has been determined by the director. Review and approval of such plans and operating procedures shall not relieve the industrial user from the responsibility to modify its facility as necessary to meet the requirements of the City of Hopewell Sewer Use Ordinance. At a minimum, the slug discharge control plan shall contain the following elements:

- Description of discharge practices, including non-routine batch discharges;
- Description of stored chemicals;
- Procedures for immediately notifying Hopewell Water Renewal of slug discharges including any discharge that would violate the federal general prohibition standards, with procedures for follow-up written notification within five (5) days;
- Procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and measures and equipment for emergency response.

8.6.3 Enforcement

As a part of the pretreatment program, Hopewell Water Renewal developed an Enforcement Response Plan that outlines the enforcement tools available and the enforcement actions taken for various pretreatment permit violations. The overall authority for enforcement and the pretreatment program is provided in the City of Hopewell Sewer Use Ordinance. When violations of pretreatment program requirements occur, Hopewell Water Renewal can require industries to evaluate process changes to prevent future occurrences, install facilities to pretreat the industrial discharge, and/or include changes to control slug discharges.

9.0 NOTIFICATION PROCEDURES

This part of the plan outlines the procedures Hopewell Water Renewal has in place to communicate with its industrial users (IUs) on a regular basis and during incidents of upsets or malfunction.

9.1 COMMUNICATION OF UPSET CONDITIONS

The IUs are required to immediately notify Hopewell Water Renewal if they become aware that a potentially toxic discharge (or slug discharge) has been sent to the treatment facility as indicated in Section 8.6.1. Hopewell Water Renewal notifies the IUs whenever there are problems or suspected problems with the treatment process to determine possible causes, effect corrective action, or to request that their discharges be curtailed during upset conditions.

In addition to the communication obligations contained in the pretreatment permits, in August 2012 at the request of EPA, WestRock and Hopewell Water Renewal developed an enhanced communication and notification plan which defines routine and non-routine communications between the entities with respect to operation and performance of the plant. Contact information for both plant sites is provided.

The plan provides for notifications of unusual and upset conditions from WestRock whenever the company is aware of the following:

- Turpentine levels in the HAP wastewater discharged from the Hopewell mill exceed the mill's pretreatment permit limit.
- Significant spills occur at the Hopewell Mill that could have the potential to cause an upset or otherwise negatively impact the WWTP operation.
- Changes to the mill's HAP or Main Sewer wastewater that have the potential to cause any upset or otherwise negatively impact the WWTP operation.
- Occurrence of an accidental or deliberate discharge of compatible or incompatible pollutants which may interfere with or pass through the treatment works.
- Changes at the facility affecting the potential for a slug discharge.
- Exceeds applicable pretreatment standards.

In addition, Hopewell Water Renewal provides WestRock with notification of the following conditions as soon as it becomes aware of them:

- MACT (40 CFR 63 Subpart S) operating and monitoring parameters (listed in Section 8.5, condition 1 and 2) are outside acceptable ranges, or, without limitation, any compliance test results indicating less than 92 percent HAP reduction from the Hopewell mill's pulping condensate discharge.
- The UNOX System is in a period of non-normal operation (as judged by Hopewell Water Renewal) or other condition that may lead to an upset or permit violation of any kind.

9.2 EMERGENCY CALL LIST

Hopewell Water Renewal maintains an emergency call list that contains the contact names and numbers for permitted industries in Hopewell, as well as the emergency contract information of Hopewell Water Renewal staff. This list is updated annually or when contact information changes. The list is distributed to industrial contacts for their information so that notifications of emergency incidents can be made quickly.

Hopewell Water Renewal uses this call list whenever it needs to notify industries that there are problems with treatment processes at the plant and to request that their discharges need to be curtailed or carefully monitored. In addition to the call list, email notification information is also included on the call list as another means of communicating when problems arise.

9.3 STARTUP, SHUTDOWN AND MALFUNCTION (SSM) PLAN

During any malfunction incident, the on duty Shift Supervisor will identify the specific incident SOP and checklist from Section 3.0 of the SSM Plan and ensure that the listed procedures are followed. The Shift Supervisor is responsible for notifying the Technical Services Department and the Operations and Maintenance Manager and direct discharge industries as soon as it is determined that an incident has occurred. Once the corrective actions have been taken, the Shift Supervisor must complete the corresponding incident checklist, recording the occurrence and duration of the malfunction, and e-mail the completed operator checklist to Hopewell Water Renewal Director, Deputy Director, and Operations and Maintenance Manager. The incident checklists in the SSM Plan require verbal notification to the main industries: WestRock, Ashland Aqualon, Honeywell, Evonik Goldschmidt, and others, if necessary. If the SSM Plan is not followed, then the Technical Services Department will contact the EPA Administrator within two working days of the event. If a startup, shutdown, or malfunction incident occurs that is not addressed or is inadequately addressed in this SSM Plan, then the Operations Supervisor must revise the plan within 45 days of that event to include the procedures to address a future occurrence of this type of event. The events listed below have been defined in the SSM Plan as malfunctions (including biological upsets) of the UNOX System:

- Electrical Malfunction (Power Loss) – Dominion Power (the plant's electrical supplier) is the first to be notified of power loss. Industries are immediately notified when the plant loses power, although this has only happened once in the 40 years of Hopewell Water Renewal operation and in that situation, industries also lost power.
- Oxygen System Failure - Industries are notified when there is a malfunction of the system, but with the plant's ability to feed liquid oxygen from backup sources, the industries are not required to make operational or process changes. In the event that the oxygen plant is down for an extended period of time and backup oxygen is not available, then industries are to be notified.
- Loss of Control System to UNOX Reactor – During loss of UNOX reactor control system, The UNOX System shall be operated manually. In the event that the UNOX System cannot be operated normally, industries are notified.

- Inhibitory Loadings/Organic Overload - This is the most serious of the identified malfunction events and is an upset to the biological treatment system (UNOX System). Industries and DEQ are notified as soon as the problem is identified. Industries are requested to carefully monitor and control their discharges until the plant recovers.

9.4 MACT COMPLIANCE PLAN

- Hopewell Water Renewal is required to notify the DEQ – Piedmont Regional Office (PRO) and submit reports about operations and events related to the UNOX System. Timely notification and reporting are important tasks through which Hopewell Water Renewal certifies compliance with applicable requirements related to performance testing, monitoring, record keeping, and good operating practices. Hopewell Water Renewal shall follow all reporting and notification requirements for deviations, exceedances and violations under CAA and CWA.

10.0 MANAGEMENT OF MALFUNCTION AND UPSET EVENTS

A major purpose of this Preventative Maintenance, Operation, and Notification Plan is to minimize regulatory violations in the event of an equipment malfunction or an upset event, to correct such events as quickly as possible, and to take steps to prevent reoccurrence of such events. The purpose of this section is to outline the steps that are taken to identify and correct such an event, and to determine the cause of the event.

10.1 MALFUNCTION EVENTS AND MITIGATION ACTIONS

Hopewell Water Renewal has identified three types of equipment malfunction events. These events are listed below along with a description of avoidance and mitigation measures employed where applicable.

10.1.1 Electrical Malfunction (Power Loss)

To avoid this occurrence and to maintain plant reliability, Hopewell Water Renewal has two main electrical feeds to the plant: one from Surry Nuclear Power Plant and one from Dutch Gap Power Plant, both owned by Dominion Power. In the 40 year history of the plant, the only time that Hopewell Water Renewal has lost both electrical feeds to the plant was during Hurricane Isabel. Even during that event, Hopewell Water Renewal was without power for only eight hours and the plant was able to maintain compliance with its VPDES permit limitations. To analyze the cause of this malfunction would be fairly simple and would require the actions of a third party (Dominion Power) to correct the situation. Because the operation of Hopewell Water Renewal is considered a necessity for public health, in the event of power loss, the plant is one of the first facilities/areas to have power restored.

In a situation, where power might be lost to the UNOX System alone, Hopewell Water Renewal maintains a spare parts inventory to deal with such incidents. E&I will troubleshoot the cause and determine the action(s) needed. As preventative maintenance, seven years ago, Hopewell Water Renewal replaced the 30 plus year old transformer that provided electricity to the UNOX System. If for some unforeseen reason that transformer may fail, Hopewell Water Renewal has vendors that can be mobilized quickly to repair the problem and/or provide a back-up generator.

10.1.2 Oxygen System Failure

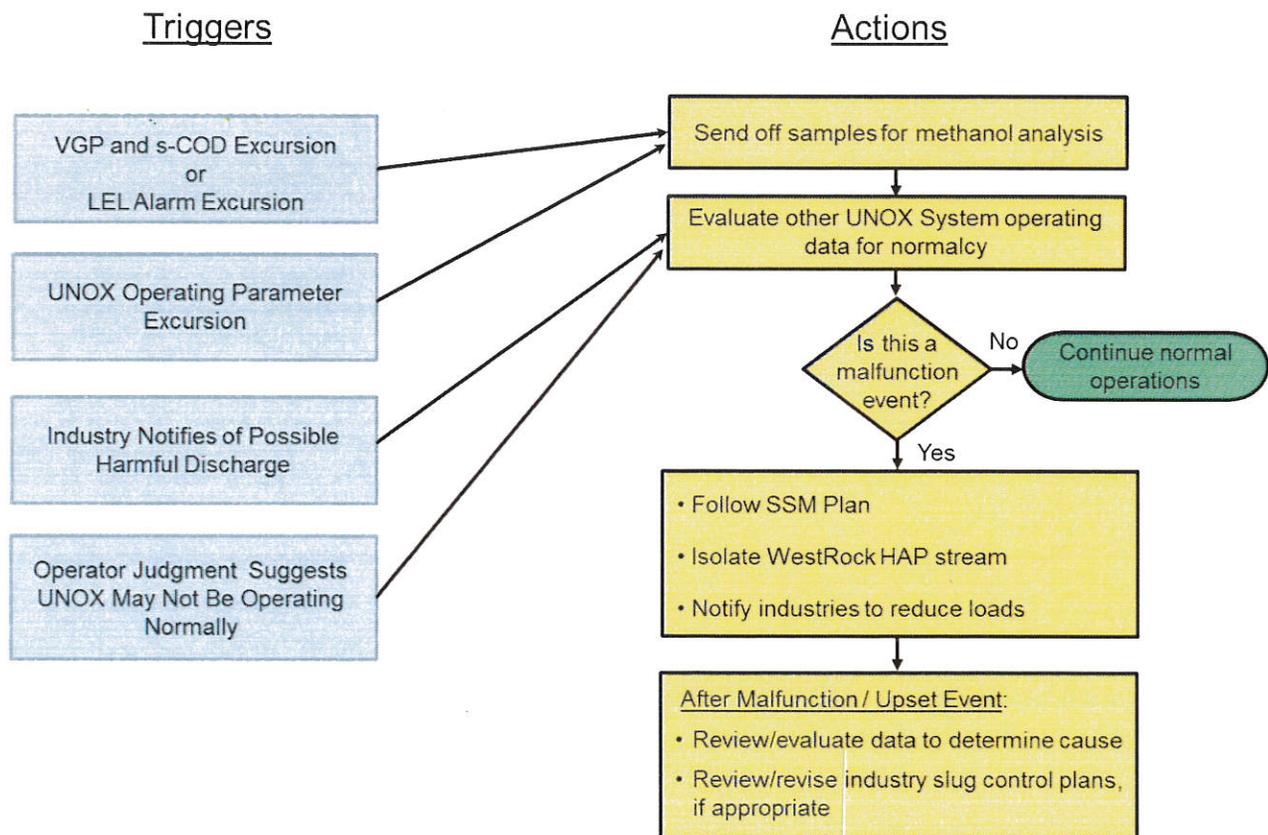
Should the oxygen supply system fail, Hopewell Water Renewal maintains liquid oxygen on the plant site and has the capability to feed purchased liquid oxygen to the UNOX System while the system undergoes troubleshooting to correct the malfunction. Each year, Hopewell Water Renewal plans a shutdown of the oxygen system for preventative maintenance to ensure that the system remains reliable. In addition, Hopewell Water Renewal maintains a standing purchase order with a liquid oxygen supplier to provide liquid oxygen when the oxygen system is shutdown and/or when there may be emergency situations when the oxygen system fails.

10.1.3 Loss of Control System to UNOX Reactor

Loss of the UNOX reactor control system may result in the shutdown of oxygen feed valves, HAP stream feed distribution, and vent gas purities automatic controls. If this happens, manual operation and recording of data can be initiated immediately until automatic control can be restored. Depending on the control system that has malfunctioned, E&I staff will undergo a series of troubleshooting evaluations in accordance with manufacturers' instructions to determine and correct the malfunction.

10.2 UPSET EVENTS AND MITIGATION ACTIONS

Upset events pertain to industrial discharges that have inhibitory effects (i.e., cause biological interferences) or organically overload the biological system resulting in failure to meet permit requirements (i.e., HAP reduction and/or organic effluent limitations). To avoid these occurrences, Hopewell Water Renewal has implemented a pretreatment program to regulate discharges from industry as described above in Section 8.6. Additionally, Hopewell Water Renewal monitors a number of parameters that could provide indications of the presence of inhibitory loadings or an organic overload that might cause an upset of the UNOX System (LEL meter alarms, vent gas purity levels, soluble chemical oxygen demand data, laboratory process data, etc.). The figure below provides a flow diagram showing the triggers that lead to the identification and mitigation of an upset event.



Once an upset or malfunction is suspected, the following actions are taken to minimize excess emissions and exceedences of effluent limitations and to restore treatment as soon as practicable:

- All direct discharge industries are notified that the plant is or believed to be upset.
- Each of the industries are requested to identify any unusual discharges taking place, and if so, requested to stop the discharge.
- The HAP waste stream is diverted to one UNOX train to determine if it is the cause of the upset. (This activity usually takes place if the LEL meters are alarming.)
- If pH above 10.5 is noted in the denitrification basin influent, the RAS is diverted from the denitrification basin and discharged directly into the UNOX System in equal amounts into each train.
- If Hopewell Water Renewal is aware of an inhibitory discharge (through industry notification or testing), the industrial flow is diverted into three trains and the HAP into the fourth train in order to protect it from wastewater that might interfere with treatment.
- Submit the appropriate daily MACT wastewater samples to the contract laboratory to ascertain if 92 percent HAP reduction was achieved.
- Additional conventional pollutant grab samples may be taken if necessary during the day to determine if there are changes in process operation.
- Industries are kept informed of the status of the situation.
- All UNOX monitoring parameters are closely monitored for changes/variations.
- All daily plant process laboratory data is monitored closely for changes.
- Depending on biomass activity and the believed cause of the upset, operational staff determines if more sludge should be wasted or returned to the process.
- If necessary, obtain truckloads of sludge from another treatment facility to “re-seed” the plant biomass.

10.3 CAUSATION ANALYSIS

Hopewell Water Renewal conducts the following activities in concert with the mitigation actions identified above to both determine and mitigate the cause of a malfunction or upset, and, consistent with the VPDES permit requirements and its pretreatment program, to prevent its reoccurrence:

- Evaluate immediate indications of an upset (LEL meter alarms, vent gas purity levels, effluent pH, soluble chemical oxygen demand data, total suspended solids data, etc.) and if applicable, calibrate monitoring instruments.
- Immediately contact the direct discharge industries to determine if there is an unusual discharge from their facility.
- If LEL meters are alarming, transfer the WestRock HAP stream to one UNOX train to determine if the cause of the upset may be turpentine contained in this wastewater by

collecting additional grab samples of the WestRock HAP stream for turpentine analysis, if necessary.

- Collect and evaluate priority pollutant samples from the direct discharge industries for contract lab analyses, if necessary and feasible, to determine constituents in the wastewater that may be the cause of the upset.
- Review conventional pollutant laboratory data (s-COD, ammonia, pH) for Hopewell Water Renewal influent and effluent and the Hopewell direct discharge industries to determine if higher than normal concentrations or loadings are evident.
- If WestRock HAP stream, methanol, and/or priority pollutant samples are sent to the contract laboratory, request a quick turn-around time for receipt of the results.
- Review the contract laboratory data to determine if any of the parameters are above industry permitted levels, if applicable, or higher than normal ranges.
- Evaluate the ATP data to determine if a particular industry discharge is responsible for the malfunction.
- Meet with one or all industries that are suspected of causing the incident.
- If not already identified, request the industry(ies) to evaluate internal process controls to determine if a malfunction or accidental discharge may have occurred.
- Once cause is determined, proceed with enforcement action in accordance with Hopewell Water Renewal's Enforcement Response Plan (ERP) to require corrective and preventative action by the industry. Preventative action can include industrial process changes, installation of pretreatment facilities, and/or slug discharge control plan revisions.

11.0 REFERENCES

Document	File Storage Location
Operations & Maintenance Manual	http://labserver/EOMHopewell/Manual/DisplayPage.aspx
UNOX Startup Shutdown and Malfunction Plan	F:\Users\Air Quality\SSM PLAN\2014 SSM Plan
MACT Compliance Plan	F:\Users\Air Quality\MACT\2014 MACT Compliance Plan
WestRock Hopewell Mill and Hopewell Water Renewal Communication and Notification Plan	F:\Users\TechServ\Compliance\RKT Hopewell Mill and HRWTF Communications and Notification Plan
Operational SOPs	F:\Users\EMS\EMS Documents and Records\Operational Controls
Sampling SOPs	F:\Users\TechServ\Sampling\Revised SOPs
Laboratory SOPs	F:\Users\TechServ\Laboratory\Std Operating Procedures
Industrial User Permits	Technical Services Industrial Users File Cabinet
Industrial Slug Control Plans	Technical Services Industrial Users File Cabinet
Title V Permit	F:\Users\TechServ\Air Issues\Title V Permit\2014 Air Permit
VPDES Permit	F:\Users\TechServ\VPDES Permit Information\2013 Permit Reapplication\2016 VPDES Permit\VA0066630 FINAL Permit 2016

APPENDIX D

Hopewell Water Renewal UNOX Schematic

Hopewell Water Renewal UNOX Schematic

