Attachment 1. College of William and Mary Air Permit Reporting – Fuel Quality Report Preparation and Submission

General Instructions

Federal law requires the Virginia Department of Environmental Quality collect fuel reports bi-annually. The submission confirms that ultra-low sulfur content (0.5% max) is purchased for use in specific equipment, referenced as "Subject Equipment" in the fuel report template. Completion of the fuel report requires tracking diesel fuel deliveries to the "Subject Equipment" and receiving "Letter of Certification" from the diesel supplier for each delivery.

In preparing the Fuel Report, all deliveries must be reviewed and ones specific to the Subject Equipment matched up with the Letter of Certification which are then attached to the Fuel Report. There may be instances where no diesel was delivered in the reporting period. The Fuel Report is still submitted but with that notation.

A Letter of Certification takes the form of an attestation by the supplier that a specified fuel quantity delivered to a specified location on a specified date was Ultra Low Sulfur Diesel with sulfur content not exceeding 15 ppm and referencing the ASTM analytical method.

Report Template

The Fuel Report template is embedded at the end of this Attachment and located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\Fuel Reports*

Due Dates

The Bi-Annual reports are due by January 30 and July 30 of each year. Completed reports are saved in folder:
G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\Fuel Reports

Fuel Certificates

Fuel Certificates are emailed to the current Associate Director of Utilities from the diesel fuel supplier. They are saved in folder: *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Fuel Certificates.*

Philips Energy supplies the diesel fuel. The certificates are emailed by Carol Hall, Fuels Manager (chall@peifuels.com, 804 642-2166). Certificates are sent some time after delivery. It is recommended to send an email a couple of days after both year end and June 30 to ensure all certificates are received for a specified period, usually from the date of the last emailed certificates from Philips Energy through the date the request is being made. Each fueling location is given a number designation and the fuel certificate file nomenclature contains that location information. The Power Plant is location 24 and Swem is location 23. The file nomenclature is **X-Y** Loc **ZZ** where **X** is month, **Y** is day and **ZZ** is the location number.

Subject Equipment

3 CB Boilers @ 25.1 MMBtu/hr (Power Plant) & 5 Unilux Boilers @ 10mmBtu/hr (Swem 1-4 & B009)

Delivery Dates / Quantities

Finance tracks diesel deliveries by location and use in an Excel spreadsheet kept in a folder on the G:\ drive. The file designation and folder follows the nomenclature below where the **XX** are replaced with the last two digits of the fiscal year:

*G:\FACMAN$\FINANCIAL SERVICES\1UTILITIES\FY**XX**\DIESEL\FY**XX** DIESEL.xls*

Step by Step Instructions for Completing the Fuel Report

1) Review FY**XX** DIESEL.xls that corresponds to the reporting period to determine what diesel deliveries were made to the Power Plant and Swem Plant. Note that fuel reports correspond to a calendar year while the FY**XX** DIESEL.xls file correspond to fiscal year.
2) Identify the associated Letter(s) of Certificate from the save documents in the Fuel Certificates folder utilizing the delivery date, location and quantity as cross-reference. Swem Plant is location 23 and Main Plant location 24.
3) Open Fuel Quality Report template and complete the following
    a. Type period covered by report in format **XX/XX/20XX – XX/XX/20XX**
    b. If no oil received for subject equipment, double click on Check Box associated with "No oil was received…" and select "Checked" in Check Box Form Field Options pop up window.
    c. If oil received for subject equipment, double click on Check Boxes and select "Checked" associated with "The report represents all the oil received…"; "Attached are copies…" and all five check boxes associated with the "Each certification…"
    d. Type name of responsible official, usually the Associate Director of Central Utilities. Type the name again in the Title field along with the associated phone number and the date in those respective fields.
    e. Save the document using file naming nomenclature *William Mary Fuel Report **Y**H 20**XX*** where **Y** is 1 for the first half and 2 for the second half of year and **XX** is the last two digits of the current year. Place file in folder:
        G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\Fuel Reports
4) Open and print
    a. *William Mary Fuel Report **Y**H 20**XX*** and
    b. Fuel certificates for Swem Plant, ***X-Y** Loc 23* and Main Plant, ***X-Y** Loc 24* if there were deliveries within the reporting period.
5) Sign *William Mary Fuel Report **Y**H 20**XX***
6) Scan *William Mary Fuel Report **Y**H 20**XX*** together with fuel certificates if there were deliveries during the reporting period naming the scanned file *William Mary Fuel Report **Y**H 20**XX** – signed.pdf*
7) Email pdf version to Matthew Slemp at Matthew.Slemp@deq.virginia.gov
    a. Save signed pdf in folder
        G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\Fuel Reports

Attachment 2. College of William and Mary Air Permit Reporting – Annual Emission Reporting

General Instructions

Virginia Department of Environmental Quality (DEQ) enforcement officer Matthew Slemp (Matthew.Slemp@deq.virginia.gov) sends an email annually in early January requesting the university review and update the actual operational and emission information for the just ended calendar year. The email has the following attachments: Cover Page, Emission Statement template and Annual Update Report. As the university utilizes Option III to create the Emission Statement, this spreadsheet template is accessed through a link in the attached Cover Page.

Completion of the annual Emission Statement and associated Annual Update Report requires tracking natural gas, diesel and propane usage for select equipment and transferring the annual consumption to the Option III spreadsheet which contains the emission factors necessary to convert the usage to air emissions for select pollutants. Spreadsheets from prior years should not be used as a starting point. Each year, the new Emission Statement template must be customized for the university.

Cover Letter

The cover letter formally requests the review and update of the operational and emissions information. It provided two key pieces of information: the submit-by date and the link to the Option III emission statement spreadsheet template.

Annual Emission Statement

Each year the DEQ will issue the College of William of Mary an annual Emission Statement that consists of a multi-page Word document. Page one identifies the facility, provides contact information and a summary of the emissions calculated using the Option III spreadsheet completed by the university. Page two contains the document certification. The certification represents an attestation by the "Responsible Official". The Associate Director of Central Utilities will be that signatory. The balance of the package consists of Option I and Option II emission calculation templates and instructions. These are not completed as the university uses Option III to determine annual emissions. After completion and signature, the document is scanned and returned to the DEQ via email.

Annual Update Report

The DEQ provides the partially completed Annual Update Report for Calendar Year which provides contact information and a comparison of current reporting year data against the prior year's data for the parameters reported. After completion and signature, the document is scanned, saved as a file and returned to the DEQ via email.

Option III Spreadsheet

The Option III annual Emission Statement template which is downloaded from the DEQ website each year contains user input cells for emission factors and throughput values using the prescribed unit (1,000 gallons, mmcf). Under the column header of PM-10, SO2, NOx, VOC, and CO are calculated fields using standard EPA emission factors (reference AP-42 in the link https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-

factors). These standard factors convert the usage information provided by the university into specific emissions. The following steps must be performed to modify and populate the generic spreadsheet.

Step by Step Instructions for Completing the Option III Spreadsheet

1) Download the Option III spreadsheet from the DEQ via the link provided in the Cover Letter. Save with file name *WM 20**XX** Emission Statement.xls* in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\20**XX** Annual Reporting*
2) Replace generic Source Name with College of William and Mary then bold
3) In the empty cell immediately above the one containing "College of William and Mary" add the registration number 60158, then bold
4) If the template has prepopulated emission source information
    a. Delete all pre-populated source emission (entire section)
    b. Renumber the sources to start with 1
5) Add the following in source field (column A, use word wrap), reporting units (beside source field description), release point, Unit and Process (all Column B)
    a. Power Plant Boilers - # 2 Oil 3 CB boilers @ 25.1 mmBtu/hr each PP-5, PP-6, PP-7; 1,000 gal; 1; 1; 1
    b. Power Plant Boilers – Natural Gas 3 CB boilers @ 25.1 mmBtu/hr each PP-5, PP-6 and PP-7; mmcf; 1; 1; 2
    c. 5 Swem Boilers - #2 oil 5 Unilux @ 10 mmBtu/hr each; 1,000 gal; 2; 2; 1
    d. 5 Swem Boilers – Natural Gas 5 Unilux @ 10 mmBtu/hr each; mmcf; 2; 2; 2
    e. Emergency Generator – ULSD oil Caterpillar gen @ 558 kw G002; 1,000 gal; 3; 3; 1
    f. 4 Emergency Generators – ULSD oil 4 Generac gens @ 600 kw each (NSPS) Swem Plant SBG01 & SBG02, ISC SPG01 & SPG02; 1,000 gal; 4; 4; 1
    g. All Other Boilers - #2 Oil; 1,000 gal; 5; 5; 1
    h. All Other Boilers – Natural Gas; mmcf; 5; 5; 2
    i. All Other Boilers – Propane; 1,000 gal; 5; 5; 3
    j. All Generators – Propane; 1,000 gal; 6; 6; 1
6) The university reports emissions for four parameters: PM-10, SO2, NOx and VOC. For each of these four parameters, enter AP-42 in every field under the individual column and for the emission points listed above.
    a. Access the link https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors
    b. Open *AP-42 Emission Factor Worksheet.xls* located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit*
    c. Update the values as needed then enter the values for each of the emission sources paying particular attention that the emission factors are the correct units for the Emission Spreadsheet.
7) For boilers and generators using oil, add an Emission Factor Multiplier which reflects the Sulfur content
    a. Ultra-Low Sulfur has 0.0015 lb Sulfur / lb diesel (source: fuel certificates) thus the E.F. Multiplier is 0.0015
8) For each source, input the Annual Throughput using the following information sources
    a. Power Plant Boilers – #2 Oil

i. Open the spreadsheet *EPA Report 20**XX*** located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\EPA Oil Burn Hrs* where **XX** is the two digit calendar year
ii. Locate "Main Plant", sum the Totaled Metered (Gals) for the three boilers and divide by 1,000 to obtain the Annual Throughput in 1,000 gals.

b. Power Plant Boilers – Natural Gas
i. Open the spreadsheet *1-FY**XX** NATURAL GAS DATA INPUT* located in folder *G:\FINANCIAL SERVICES\1UTILITIES\FY**XX**\NATURAL GAS* where **XX** is the two digit fiscal year that preceded the current fiscal year.
ii. Locate "Power Plant Total Gas (MCF)" and sum months January through June
iii. Open the spreadsheet *1-FY**ZZ** NATURAL GAS DATA INPUT* located in folder *G:\FINANCIAL SERVICES\1UTILITIES\FY**ZZ**\NATURAL GAS* where **ZZ** is the two digit current fiscal year
iv. Locate the "Power Plant Total Gas (MCF)" and sum months July through December
v. Add the two sums and divide the total by 1,000 to obtain the Annual Throughput in mmcf.

c. Swem Boilers – #2 Oil
i. Open the spreadsheet *EPA Report 20**XX*** located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\EPA Oil Burn Hrs* where **XX** is the two digit calendar year
ii. Locate "Swem Plant", sum the Totaled Metered (Gals) for the five boilers and divide by 1,000 to obtain the Annual Throughput in 1,000 gals.

d. Swem Boilers – Natural Gas
i. Open the spreadsheet *1-FY**XX** NATURAL GAS DATA INPUT* located in folder *G:\FINANCIAL SERVICES\1UTILITIES\FY**XX**\NATURAL GAS* where **XX** is the two digit fiscal year that preceded the current fiscal year.
ii. Locate "Swem Heat Plant Total Gas (MCF)" and sum months January through June
iii. Open the spreadsheet *1-FY**ZZ** NATURAL GAS DATA INPUT* located in folder G:\FINANCIAL SERVICES\1UTILITIES\FY**ZZ**\NATURAL GAS where **ZZ** is the two digit current fiscal year
iv. Locate the "Swem Heat Plant Total Gas (MCF)" and sum months July through December
v. Add the two sums and divide the total by 1,000 to obtain the Annual Throughput in mmcf.

e. Emergency Generator – ULSD oil Caterpillar (Power Plant)
i. Open spreadsheet *Gen Oil Tank Levels FY20**XX*** located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Generator Fuel Levels* where **XX** is the two digit fiscal year that preceded the current fiscal year.
ii. Locate "Power Plant Generator" and determine if there was a drop in tank level between the January reading and the April reading
iii. Open spreadsheet *Gen Oil Tank Levels FY20**ZZ*** located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Generator*

Fuel Levels where **ZZ** is the two digit current fiscal year.

iv. Locate "Power Plant Generator" and determine if there was a drop in tank level between the April reading and the July reading as well as between the July reading and the October reading and the October reading and the January readings.

v. Add up all the drops in level in units of inches

vi. Use the tank factors contained in spreadsheet *Generator day Tank Calculator* located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Generator Fuel Levels* to convert the level drop in inches to gallons consumed and divide by 1,000 to get the Annual Throughput in 1,000 gal

f. Emergency Generator – ULSD oil 4 Generac (Swem/ISC)

i. Open spreadsheet *Gen Oil Tank Levels FY20**XX*** located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Generator Fuel Levels* where **XX** is the two digit fiscal year that preceded the current fiscal year.

ii. Locate "Swem Plant No.1" and "Swem Plant No.2" and determine if there was a drop in tank level between the January reading and the April reading

iii. Open spreadsheet *Gen Oil Tank Levels FY20**ZZ*** located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Generator Fuel Levels* where **ZZ** is the two digit current fiscal year.

iv. Locate "Swem Plant No.1" and "Swem Plant No.2" and determine if there was a drop in tank level between the April reading and the July reading as well as between the July reading and the October reading and the October reading and the January readings.

v. Add up all the drops in level in units of inches

vi. Use the tank factors contained in spreadsheet Generator Day Tank Calculator located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Generator Fuel Levels* to convert the level drop in inches to gallons consumed and divide by 1,000 to get the Annual Throughput in 1,000 gal

g. All Other Boilers - #2 Oil

i. Open the spreadsheet *EPA Report 20**XX*** located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\EPA Oil Burn Hrs* where **XX** is the two digit calendar year

ii. Locate "School of Ed", "School of Law" and "Rec Sports" and determine if the was any run time during the year due to curtailment or tune ups.

iii. For any non-zero run time, look up fire rate for each boiler type in Boiler Oil Fire Rate located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance*

iv. Multiply hours of operation listed in EPA Report 20**XX** by the appropriate boiler fire rate

v. Sum for all three boiler locations and divide by 1,000 to obtain the Annual Throughput in 1,000 gals.

h. All Other Boilers – Natural Gas

i. Open the spreadsheet 1-FY**XX** NATURAL GAS DATA INPUT located in

folder *G:\FINANCIAL SERVICES\UTILITIES\FY**XX**\NATURAL GAS* where **XX** is the two digit fiscal year that preceded the current fiscal year.

ii. Locate "Total Use (MCF)" and sum months January through June

iii. Open the spreadsheet 1-FY**ZZ** NATURAL GAS DATA INPUT located in folder *G:\FINANCIAL SERVICES\UTILITIES\FY**ZZ**\NATURAL GAS* where **ZZ** is the two digit current fiscal year

iv. Locate the "Total Use (MCF)" and sum months July through December

v. Add the two sums and divide the total by 1,000

vi. From this sum, subtract the natural gas usage by the Main Plant and Swem Plant (mmcf) as determined above, this gives the to obtain the Annual Throughput for All Other Boilers in mmcf.

i. All Other Boilers – Propane

i. Currently no boilers operate on propane.

j. All Generators – Propane

i. Open *PROPANE FY**XX*** located in folder *G:\FACMAN$\FINANCIAL SERVICES\UTILITIES\FY**XX**\PROPANE* where **XX** is the two digit fiscal year that preceded the current fiscal year

ii. Scan the spreadsheet to determine if there was any propane delivery to Dupont between January 1 and June 30

iii. Sum any gallons of propane delivered to Dupont

iv. Open PROPANE FY**ZZ** located in folder *G:\FACMAN$\FINANCIAL SERVICES\UTILITIES\FY**ZZ**\PROPANE* where **ZZ** is the two digit fiscal year that preceded the current fiscal year

v. Scan the spreadsheet to determine if there was any propane delivery to Dupont between July 1 and December 31

vi. Sum any gallons of propane delivered to Dupont

vii. Total the gallons of propane from the two spreadsheets and divide total by 1,000 to get Annual Throughput in units of 1,000 gal

<u>Step by Step Instructions for Completing the Annual Emission Statement</u>

1) Open the email from DEQ, typically received in January, and scan the attachments for a Word document titled "EmissionStatement" and open it
2) Confirm the accuracy of the pre-populated fields
3) Open the *WM 20**XX** Emission Statement* located in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\20**XX** Annual Reporting* where **XX** represents the year for which the report is being made
4) Transfer the "FACILITIES TOTAL" tons/yr values for VOC, NOx, SO2, PM10 and CO to the 20**XX** Emission Statement
5) Populate the Document Certification Page
    a. Facility Name: College of William and Mary
    b. Registration #: 60158
    c. Facility Location: 110 Grigsby Dr, Williamsburg, VA 23185
    d. Type of Submittal Attached: 20**XX** Emission Statement
    e. Name of Responsible Official: [*Insert name of Associate Director Utilities*]
    f. Title: Associate Director, Utilities

6) Save with file name *WM20**XX** Emission Statement.xls* in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\20**XX** Annual Reporting* where **XX** represents the year for which the report is being made.
7) Print *WM 20**XX** Emission Statement.xls*, sign and save as *WM20**XX** Emission Statement – Signed.pdf* in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\20**XX** Annual Reporting* where **XX** represents the year for which the report is being made.

Step by Step Instructions for Completing the Annual Update Report

1) Open the Annual Update Report attachment in the email sent by the DEQ
2) Populate the annual throughput values using those found in the *WM 20**XX** Emission Statement.xls*
3) Sulfur wt % for fuel oil is 0.0015
4) Heat content for oil is 140 MMBtu/1,000 gal burned
5) Heat content for natural gas is 1,040 MMBtu/mmcf
6) Save with file name *WM* 20*XX Annual Update Report.xls* in folder *G:\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\20**XX** Annual Reporting* where **XX** represents the year for which the report is being made.
7) Email files *WM 20**XX** Annual Update Report.xls, WM 20**XX** Emission Statement.xls* and *WM 20**XX** Emission Statement – Signed.pdf* to Matthew.Slemp@deq.virginia.gov using subject line "College of William and Mary 20**XX** Emission Statement and annual Update Report"

Attachment 3. College of William and Mary Air Permit Reporting – Annual Emissions Fee

General Instructions

The DEQ utilizes the calendar year annual emissions of regulated pollutants reported by the university via the annual Emission Statement to calculate the Annual Emissions Fee. The Department of Environmental Quality must transmit the annual emission fee by August 1.

A cover letter describing the nature of the fee and an original invoice is mailed to the Associate Director of Utilities.

Step by Step Instructions for Processing the Annual Emissions Fee

1) Approve invoice by signing and dating
2) Scan invoice along with cover letter and save with file name *WM 20XX Annual Emissions Fee.pdf* in folder G:*\FACMAN$\Operations and Maintenance\Utilities\Compliance\Air Permit\Annual Emissions Fee*
3) Submit original to FM Business Services – Finance for payment processing.

FUEL REPORT

COLLEGE OF WILLIAM & MARY Reg. No. 60158

Subject Equipment: 3 CB Boilers @ 25.1 mmBtu/hr (PP 5-7) & 5 Unilux Boilers @ 10 mmBtu/hr (SWEM 1-4 & B009)

Fuel report is required by:

- 40 CFR Part 60, Subpart Dc
- Permit dated October 30, 2013, Condition Number 18

Report Deadline: Postmarked 30 days after the end of the reporting period.

Permitted Fuel: Distillate Due Dates: Jan 30 July 30

Maximum Sulfur Content: 0.5% - from Permit Condition 7

Period covered by report: _____

☐ No oil was received during the period for the subject equipment.

OR

☐ The report represents all the oil received for the subject equipment during the period. **AND**

☐ Attached are copies of fuel supplier certifications (or a summary from each supplier) for all the oil received for the subject equipment during the period. **AND**

Each certification has the information required by permit Condition 8, as follows:

☐ a) Supplier Name

☐ b) Date of Delivery

☐ c) Volume of Oil

☐ d) Statement that the oil complies with the ASTM D-396 (or D-975) specifications for that grade

☐ e) Sulfur Content

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name: COLLEGE OF WILLIAM & MARY **Registration No.:** 60158

Printed Name of Responsible Official: _____.

TITLE: _____ **TELEPHONE NO:** _____.

SIGNATURE: _____ **DATE:** _____.