December 19, 2017

Mr. George S. Hawkins, General Manager & CEO

District of Columbia Water and Sewer Authority

5000 Overlook Ave., SW

Washington, DC 20032

**RE: Permit Nos. 7127, 7128, and 7130 to Construct and Operate Three Identical Radial Carbon Adsorber Odor Scrubbers at the Central Enhanced Clarification Facility (ECF), Blue Plains Wastewater Treatment Plant (WWTP), 5000 Overlook Ave. SW**

Dear Mr. Hawkins:

Pursuant to sections 200.1 and 200.2 of Title 20 of the District of Columbia Municipal Regulations (20 DCMR), a permit from the Department of Energy and Environment (“the Department”) shall be obtained before any person can construct or operate a stationary source in the District of Columbia. The applications of the District of Columbia Water and Sewer Authority (“the Permittee”) to construct three (3) identical radial carbon adsorber odor scrubbers (“RCAOS”), ECF-OS2, ECF-OS3 and ECF-OS1 each rated at 28,700 cfm, hereunder listed as Radial Carbon Adsorber located in Washington, DC, have been reviewed:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Equipment Location** | **Address** | **Equipment Size** | **Equipment ID** | **Type** | **Permit**  **Number** |
| Blue Plains WWTP, North of the Grit Removal Facility | 5000 Overlook Ave. SW  Washington DC 20032 | 28,700 cfm | ECF-OS2 | Radial Carbon Adsorber | 7127 |
| Blue Plains WWTP, North of the Grit Removal Facility | 5000 Overlook Ave. SW  Washington DC 20032 | 28,700 cfm | ECF-OS3 | Radial Carbon Adsorber | 7128 |
| Blue Plains WWTP, North of the Grit Removal Facility | 5000 Overlook Ave. SW  Washington DC 20032 | 28,700 cfm | ECF-OS1 | Radial Carbon Adsorber | 7130 |

Based on the submitted plans and specifications as detailed in the applications dated June 6, 2016 and received June 22, 2016, the Permittee’s applications are hereby approved subject to the following conditions:

I. General Requirements:

a. The odor control scrubber systems shall be constructed and operated in accordance with the air pollution control requirements of 20 DCMR.

b. This set of permits will expire on December 18, 2022 [20 DCMR 200.4]. If continued operation after this date is desired, the Permittee shall submit applications for renewal by September 18, 2022.

c. Construction or operation of equipment under the authority of this set of permits shall be considered acceptance of its terms and conditions.

1. The Permittee shall allow authorized officials of the District, upon presentation of identification, to:

1. Enter upon the Permittee’s premises where a source or emission unit is located, an emissions related activity is conducted, or where records required by this permit are kept;

2. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;

3. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor, at reasonable times, any substance or parameter for the purpose of assuring compliance with this permit or any applicable requirement.

1. This set of permits shall be kept on the premises and produced upon request.
2. Failure to comply with the provisions of these permits may be grounds for suspension or revocation. [20 DCMR 202.2]

g. If modifications to the equipment design as submitted in the permit applications, or any revision thereof, are required, an amendment to this set of permits shall be obtained before making these design changes, unless the Department determines that no such amendment is required.

h. Any renovation or demolition activity that may occur as a part of this project must be performed in conformance with the requirements of 20 DCMR 800. If a permit is required under this section, a separate asbestos permit must be obtained. This construction permit does not replace any asbestos abatement permit that may be required.

i. Within 12 months of the issuance of a permit to operate the equipment covered by this set of permits, the Permittee shall apply for an amendment to an existing Chapter 3 operating permit or shall amend any pending Chapter 3 operating permit application to include the requirements of this set of permits. [20 DCMR 301.1(a)(2)]

II. Emission Limitations:

a. Visible emissions shall not be emitted into the outdoor atmosphere from the equipment covered by these permits. Where the presence of uncombined water is the only reason for failure of an emission to meet the requirements of this condition, this condition shall not be applicable. [20 DCMR 201]

b. An emission into the atmosphere of odorous or other air pollutants from any source in any quantity and of any characteristic, and duration which is, or is likely to be injurious to the public health or welfare, or which interferes with the reasonable enjoyment of life or property is prohibited. [20 DCMR 903.1]

c. The Permittee shall ensure that the Enhanced Clarification Facility odor control systems are properly operated to achieve at least a 99 percent removal rate for hydrogen sulfide in the foul air streams from the ECF (screenings and grit processing buildings, the headspace of the screenings influent and effluent channels, grit influent channel, and vortex grit units) or a maximum outlet concentration of 0.02 ppm of hydrogen sulfide, whichever results in a higher emission rate. [20 DCMR 201]

III. Operational Limitations:

The RCAOS systems shall remain operative or effective, and shall not be removed except as specified in Condition VI(c) [20 DCMR 107.1]. In order to ensure that this occurs, the following steps shall be implemented:

a. The odor scrubber system shall be operated as designed and detailed in the permit applications and the manufacturer’s recommendations on scrubber operation, and as necessary to maintain the pollutant removal efficiencies or outlet concentrations listed in Condition II(c);

b. Negative pressure shall be maintained on the screenings and grit processing buildings, the headspace of the screenings influent and effluent channels, grit influent channel, and vortex grit units at all times except in accordance with Condition VI(c);

c. Grease and mist eliminators and foul air fans shall be kept in good repair order in accordance with equipment manufacturer’s maintenance manual to ensure reliable discharge of the treated air through the carbon adsorbers’ emission points;

d. The process for ordering and replacing carbon in the scrubber shall be initiated promptly upon occurrence of either of the following:

1. Identification of carbon bed breakthrough by monitoring required by this permit; or

2. Reaching 90% of the estimated bed life, where bed life is determined as follows:

A. The Permittee shall report to the Department the first date of operation of the unit;

B. For the first year of operation of the unit, the Permittee shall monitor influent H2S concentration and any other relevant parameters in accordance with the requirements of Conditions III(e)(1), IV(d), and IV(e) of this permit and additionally, as needed, to model an estimated bed life;

C. Within 14 months of the first date of operation of the unit, the Permittee shall submit a report to the Department identifying the estimated bed life and explaining the methodology for estimating that life;

D. Every 12 months thereafter, the Permittee shall submit a report identifying the estimated remaining bed life and estimated date of carbon change-out (90% of bed life);

E. All reports required in this condition shall be submitted to the following address:

Chief, Compliance and Enforcement Branch

Department of Energy and Environment

Air Quality Division

1200 First Street NE, 5th Floor

Washington DC 20002

Additionally, the reports required in Conditions III(d)(2)(A) and (C) shall be submitted to the following address:

Chief, Permitting Branch

Department of Energy and Environment

Air Quality Division

1200 First Street NE, 5th Floor

Washington DC 20002

e. The following Preventive Maintenance tasks must be maintained in the Permittee’s Computerized Maintenance Management System (CMMS):

1. For the first three years after the first date of operation, the H2S removal efficiency of each scrubber vessel shall be checked each calendar quarter as follows:

A. At least once during normal non-event operation; and

B. At least once during the first surge event of the quarter, where a surge event is characterized by enough water entering the tunnel to require the operation of the large tunnel dewatering pumps. If a quarter occurs where no surge event occurs, this may be noted in lieu of the post-surge removal efficiency monitoring event;

2. After the first three years of operation, the frequency of the hydrogen sulfide removal efficiencies checks shall be increased to a monthly basis, unless the modeling required in Condition III(d)(2) indicates that the estimated date to reach 90% of bed life is more than 18 months away, in which case an additional year of quarterly monitoring may be granted by the Department upon request and justification. This period may be extended for multiple years if warranted by the modeling and approved by the Department;

3. Each scrubber vessel shall be inspected annually;

4. The fans’ bearings lubrication shall be inspected semi-annually and shall be re-lubricated when warranted;

5. The fans’ belts shall be inspected for correct tension, slippage, cracking, etc., semi-annually and shall be replaced or repaired when warranted;

6. The mist eliminators shall be cleaned with water quarterly;

7. The scrubber media shall be visually inspected at least once every three years; and

8. The monitor used for sampling H2S concentrations shall be operated and maintained in accordance with the recommendations in the manufacturer’s operations and maintenance manual.

IV. Monitoring and Testing Requirements:

a. The Permittee shall monitor the status and level of repair of the odor scrubbers and all other process equipment at the facility to ensure compliance with Condition III of this permit.

b. The Permittee shall monitor the facility to ensure that odor, and other nuisance air pollutants are not emitted in such quantities as to create a violation of Condition II(b) of this permit.

c. The Permittee shall monitor all performance metrics in the manufacturer’s operational manual to ensure that the scrubbers operate as designed at all times.

d. The Permittee shall monitor for carbon bed breakthrough and bed life for each unit in accordance with Conditions III(d), III(e)(1), and IV(e).

e. Except where additional testing may be required under Condition IV(f), the Permittee shall perform monitoring for H2S concentrations using a hand-held monitor as follows:

1. The proposed monitor must be accurate to 0.02 ppm H2S or lower to an accuracy of 0.005 ppm at the 0.02 ppm level;

2. The Permittee must be able to provide calibration data documenting this accuracy;

3. The equipment must be calibrated in accordance with the recommended frequency provided by the manufacturer; and

4. The equipment to be used is subject to approval by the Air Quality Division (AQD) of the Department. In order to obtain such approval, the Permittee shall submit a proposal to AQD for approval as follows:

A. The proposal shall reference this permit and permit Condition IV(e);

B. It shall include manufacturer’s specifications, including the expected accuracy of the monitor and recommended calibration frequency;

C. It shall include documentation proving the accuracy of the monitor (such as test results provided by the manufacturer on a similar unit);

D. It shall include a copy of the operations and maintenance manual for the equipment;

E. It shall be submitted no later than 45 days after the first date of operation of the equipment; and

F. It shall be submitted to the following address:

Chief, Permitting Branch

Department of Energy and Environment

Air Quality Division

1200 First Street NE, 5th Floor

Washington DC 20002.

f. In addition to the monitoring and testing required in other conditions of this permit, the Permittee shall conduct and allow the Department access to conduct tests of air pollution emissions from any source as requested. [20 DCMR 502.1]

V. Record Keeping Requirements: [20 DCMR 200.7]

a. The Permittee shall maintain all records, including records of visual inspection, necessary for determining compliance with this permit in a readily accessible location for five (5) years from the date the information is obtained and shall make these records available to the Department upon written or verbal request. [20 DCMR 302.1(c)(2)(B) and 20 DCMR 500.8]

b. At a minimum, the following information shall be recorded and maintained in accordance with Condition V(a) of this permit for each scrubber system. All such records must be either initialed or signed by the person recording the information or maintained in a verifiable electronic system whose information can be certified as to its accuracy:

1. Records of all routine and non-routine maintenance performed on the scrubber system. These records shall include a description of the problems being corrected (where relevant), the maintenance activity, and a statement indicating whether or not the problem (where relevant) was corrected;
2. Records of any unpermitted releases from the scrubber system or deviations from any of the conditions of this permit;
3. Records of any equipment shutdowns related to improper operation of a control device and records of any control device malfunctions;
4. Records of the training of the operators and maintenance staff to minimize the production of emissions during operation shall be maintained;
5. Records of the date(s) and duration of all surge events;

6. Date and result of all H2S removal efficiency monitoring events required under Conditions III(e)(1) and (2);

7. Date and result of all scrubber vessel inspections;

8. Dates of all fan bearing lubrication inspections, conclusions of the inspections, and records of any action taken to address any lubrication issues;

9. Dates of all fan belt inspections, conclusions of the inspections, and records of any action taken to address any belt issues;

10. Dates of all mist eliminator cleanings;

11. Dates of all scrubber media inspections, conclusions of the inspections, and records of any action taken to address any deficiencies identified;

12. Records of the date of any order for a carbon bed change-out as well as the date the change-out actually occurred;

13. Copies of all reports required pursuant to Condition III(d)(2);

14. The following records related to the monitor(s) used for H2S monitoring pursuant to Condition IV(e):

A. Equipment specifications and manufacturer’s operations and maintenance manual;

B. Documentation of the accuracy of the monitor;

C. Documentation of all calibrations of the monitor;

D. A copy of the operations and maintenance manual for the monitor; and

E. A copy of any proposal submitted to AQD to approve use of a given monitor as well as any response from AQD; and

15. Records of the results of any testing performed pursuant to Condition IV(f).

VI. Reporting Requirements:[20 DCMR 200.7]

a. The Permittee shall submit all reports and proposals required in Conditions III(d)(2) and IV(e)(4) as specified in those conditions.

b. The Permittee shall notify the Department orally within 24 hours of the time the Permittee learns of any deviation from the requirements of Section II and III. The Permittee shall provide a written report of such deviations within five (5) days to the Department. Each such written report shall include an explanation for the cause of the deviation to the best knowledge of the Permittee.

c. Whenever it is necessary to shut down part of the odor control scrubber system without shutting down the rest of the process, the Permittee must report the planned shutdown to the District at least 48 hours prior to shutdown by a method that will allow the Department to review the proposal prior to the shutdown. At a minimum, the prior notice shall include the following [20 DCMR 107.2]:

1. Identification of the specific facility to be taken out of service, as well as its location and permit number;
2. The expected length of time that the air pollution control equipment will be out of service;
3. The nature and quantity of emissions of air pollutants likely to occur during the shutdown period;
4. Measures that will be taken to minimize the length of shutdown period; and
5. The reasons that it would be impossible or impractical to shut down the source operation during the maintenance period.

Unless the Department objects, an automatic approval of the shutdown process is deemed to exist.

*Note that 20 DCMR 107 is subject to an EPA-issued call for a State Implementation Plan (SIP) revision (known as a “SIP call”) requiring the District to revise 20 DCMR 107. See “State Implementation Plans: Response to Petition for Rulemaking; Restatement and Update of EPA’s SSM Policy Applicable to SIPs; Findings of Substantial Inadequacy; and SIP Calls To Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown and Malfunction”, 80 Fed. Reg. 33840 (June 12, 2015). It is likely that this federal action will result in changes to the requirements of 20 DCMR 107 (see section 102 of the proposed revised regulation at* <http://www.dcregs.dc.gov/Gateway/NoticeHome.aspx?noticeid=6385139>*. Any such changes, once finalized in the DCMR, will supersede the language of Condition VI(c) as stated above.*

d. Except as specified in Condition III(d)(2) and IV(e)(4), all reports required pursuant to this permit shall be submitted to:

Chief, Compliance and Enforcement Branch

Air Quality Division

1200 First Street NE

5th Floor

Washington, DC 20002

If you have any questions, please call me at (202) 535-1747 or John Nwoke at (202) 724-7778.

Sincerely,

Stephen S. Ours, P.E.

Chief, Permitting Branch

SSO:JCN