NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: XXXX XX, 2024

Region: Washington Regional Office
County: Beaufort
NC Facility ID: 0700071
Inspector's Name: Robert Bright
Date of Last Inspection: 04/28/2023
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): PCS Phosphate Company, Inc. - Aurora

Facility Address:
PCS Phosphate Company, Inc. - Aurora
1530 NC Highway 306 South
Aurora, NC 27806

SIC: 2874 / Phosphatic Fertilizers
NAICS: 325312 / Phosphatic Fertilizer Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 02D .0501(c)
NSPS: N/A
NESHAP: Subparts AA and BB
PSD: 02D .0530
PSD Avoidance: N/A
NC Toxics: N/A
112(r): N/A
Other: N/A

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Khalid Alnahdy Env. & Tech. Services Manager (252) 322-8288 1530 NC Hwy 306 South Aurora, NC 27806	Jeremy Pierce Interim General Manager (252) 322-8201 1530 NC Highway 306 South Aurora, NC 27806	Chris Smith Env. Engineering Supervisor (252) 322-8263 1530 NC Highway 306 South Aurora, NC 27806

Application Data

Application Number: 0700071.23B
Date Received: 10/09/2023
Application Type: Modification
Application Schedule: TV-Significant

Existing Permit Data
Existing Permit Number: 04176/T71
Existing Permit Issue Date: 03/07/2024
Existing Permit Expiration Date: 11/30/2027

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2022	2207.78	451.01	55.78	319.05	793.70	154.95	79.07 [Hydrogen fluoride (hydrofluori]
2021	2631.31	532.97	83.52	403.81	812.82	190.11	82.59 [MIBK (methyl isobutyl ketone)]
2020	2240.91	550.33	123.28	410.46	854.43	229.97	122.27 [MIBK (methyl isobutyl ketone)]
2019	2307.21	457.20	160.20	390.70	818.98	268.66	159.36 [MIBK (methyl isobutyl ketone)]
2018	3439.36	431.10	277.50	424.30	803.52	386.10	276.66 [MIBK (methyl isobutyl ketone)]

Review Engineer: Emily Supple

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 04176/T72
Permit Issue Date: XXXXX XX, 2024
Permit Expiration Date: November 30, 2027

1. Purpose of Application

PCS Phosphate Company, Inc. -Aurora (PCS) currently holds Air Quality Title V Permit No. 04176T71, issued March 7, 2024 with an expiration date of November 30, 2027. The facility, located in Aurora, Beaufort County, North Carolina, conducts phosphoric rock mining and phosphoric acid manufacturing.

On October 9, 2023, the North Carolina Department of Environmental Quality (NCDEQ), Division of Air Quality (DAQ) received permit application No. 0700071.23B. The ePay acknowledgement letter was sent and the payment received via ePay the same day.

This permitting action will be considered a Title V significant modification under 15A NCAC 02Q .0516. The proposed project will be processed following procedures set out in 15A NCAC 02Q .0501(b)(1) for a one-step significant modification.

Per the application, PCS is requesting a reduction in the frequency of stack testing requirements for certain emission sources at the PCS facility located in Aurora, NC. The request is based on an extensive history of compliance and the use of continuous pollution abatement monitoring systems that provide assurance of compliance with the underlying emissions standards.

2. Application History

October 9, 2023	Air Permit Application No. 0700071.23B was received as a one-step significant modification pursuant to 15A NCAC 02Q .0516.
October 25, 2023	Permit application forwarded to Steve Hall, Former Chief of Technical Services Section, for review of request to reduce stack testing requirements.
October 27, 2023	Corrections to application data were sent by Joe Sullivan of PCS Phosphate to Steve Hall and Emily Supple of DAQ.
November 13, 2023	Additional, clarifying information and a correction to the application were sent by Joe Sullivan to Steve Hall and Emily Supple.
November 22, 2023	Recommendations were received from Steve Hall regarding the request to reduce stack testing requirements. See Attachment 1 below.
February 5, 2024	A request for additional information was sent to confirm several stack testing results.
February 6, 2024	The requested information was received.
March 7, 2024	Draft permit and review forwarded to applicant, regional office, and Stationary Source Compliance Branch (SSCB) for comments. No comments were received from the regional office or from SSCB.
March 8, 2024	Comments were received from Joe Sullivan of PCS Phosphate and are addressed in Section 12 below.
XXXXX XX, 2024	Draft permit and review forwarded to 30-day public notice with concurrent 45-day EPA review.
XXXXX XX, 2024	Public comment period ends. Comments?
XXXX XX, 2024	EPA review period ends. Comments?

XXXXXX XX, 2024. Permit No. 04176T72 issued.

3. Permit Changes/Emission Changes/TVEE

Table of Changes

The following changes were made to Air Permit No. 04176T71:*

Page No.	Section	Description of Changes
Cover and throughout	--	• Updated all dates and permit revision numbers.
70	2.1.3 A.4.c	• Revised stack testing requirement to once every three years
74	2.1.3 A.7.h	• Revised stack testing requirement to once every three years
80	2.1.3 B.4.c	• Revised stack testing requirement to once every three years
83	2.1.3 B.7.h	• Revised stack testing requirement to once every three years
90-91	2.1.4 B.1.c and d	• Revised stack testing requirement to once every three years; • Added monitoring, recordkeeping, and reporting requirement
92-93	2.1.4 B.4.h	• Revised stack testing requirement to once every three years
97	2.1.4 C.3.c	• Revised stack testing requirement to once every three years
98	2.1.4 C.4.h	• Revised stack testing requirement to once every three years
110	2.1.5 A.1.c	• Revised stack testing requirement to once every three years
111	2.1.5 A.2.c	• Revised stack testing requirement to once every three years
114	2.1.5 A.4.h	• Revised stack testing requirement to once every three years
151	2.1.6 D.1	• Removed stack testing requirement
154	2.1.6 E.1	• Removed stack testing requirement
158-159	2.1.6 H.1	• Removed stack testing requirement
162	2.1.6 I.1	• Removed stack testing requirement

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

Emission Changes

No changes to the facility-wide emissions are expected with this application.

Title V Equipment Editor (TVEE) Review

No changes to TVEE were needed with this application. TVEE was reviewed and approved by Connie Horne on XXXX XX, 2024.

4. Description of Application

The purpose of this application is to request a reduction in the frequency of stack testing requirements for certain emission sources at the PCS facility in Aurora, NC due to the impracticality of continuing annual compliance testing given an extensive history of compliance and the use of continuous pollution abatement monitoring systems. The following Table 4.1 below was provided in the application and shows a summary of the existing stack testing requirements and proposed testing frequencies.

Table 4.1: Requested Stack Test Reductions

Source	Emission Point ID No.	Pollutant	Permit Condition	Basis for Condition	Current Test Frequency	Proposed Testing Frequency	Proposed Resumptive Trigger	Continuous Monitoring?
MAP/DAP No. 3	302	Fluorides	2.1.3 B.4.c and 2.1.3 B.7.h	NESHAP/BACT	Annual	Once/3 years	≥80%	Yes – NESHAP/CAM

MAP/DAP No. 2	303	Fluorides	2.1.3 A.4.c and 2.1.3 A.7.h	NESHAP/BACT	Annual	Once/3 years	≥80%	Yes – NESHAP/CAM
MAP/DAP No. 2	303	PM	2.1.3 A.4.c	PSD – BACT	Annual	Once/3 years	≥80%	Yes - CAM
SPA Plants 1, 2, and 3/4	330-332	Fluorides	2.1.4 B.4.h and 2.1.4 C.4.h	NESHAP	Annual	Once/3 years	≥80%	Yes - NESHAP
SPA Plants 1 and 2	331-332	SO2	2.1.4 B.1.c	PSD – NAAQS	Annual	Once/3 years	≥80%	Yes[1]
SPA Plants 3/4	332	SO2	2.1.4 C.3.c	PSD – BACT	Annual	Once/3 years	≥80%	Yes – 2.1.4 C.3.d[2]
Phos. Acid Plants 1-4	401, 403, 404, 408, 409	Fluorides	2.1.5 A.4.h	NESHAP	Annual	Once/3 years	≥80%	Yes - NESHAP
Phos. Acid Plants 1-4	401 or 404, 406 or 409	SO2	2.1.5 A.2.c*	PSD – BACT/NAAQS	Annual	Once/3 years	≥80%	Yes – 2.1.5 A.2.d[2]
PAP No. 2 Trains 3 and 4 Chiller Stack	503	Fluorides	2.1.6 D.1.c and 2.1.6 H.1.c	PSD – BACT	Once/5 years	Discontinue	NA	No[3]
PAP No. 2 Train 3 Scrubber Stack	504	Fluorides	2.1.6 E.1.c	PSD – BACT	Once/5 years	Discontinue	NA	Yes – CAM
PAP No. 2 Train 4 Scrubber Stack	506	Fluorides	2.1.6 I.1.c	PSD - BACT	Once/5 years	Discontinue	NA	Yes - CAM

Note 1: Review of the permit indicates that continuous monitoring of scrubber inlet flow is not strictly required by the permit (probably oversight during permitting); however, analogous to the duty to maintain established for NESHAP compliance for SPA Plants 3/4 per 2.1.4 C.3.d, continuous monitoring of the SPA Plants 1 and 2 wet scrubbers assures continuous compliance with the SO2 emission limits.

Note 2: In accordance with the permit, monitoring for these SO2 limits is assured by maintaining compliance with control device operating limits established for NESHAP compliance.

Note 3: Pollution abatement equipment is not needed for fluoride emissions from the Trains 3 and 4 Chiller Stack.

*Request includes both Conditions 2.1.5 A.1.c (NAAQS) and 2.1.5 A.2.c (PSD).

With this application, historical stack testing data for each source listed above was included to support the request for stack testing frequency reduction. The historical stack testing data from this facility demonstrates compliance with the emission standards for each source listed above for more than a decade.

On October 25, 2023, a request was sent to Steve Hall, Former Chief of the Technical Services Section, to review the request from PCS for reduced stack testing frequencies. Steve Hall issued an internal memo on November 22, 2023 (Attachment 1 below). The memo indicated that (1) SSCB agrees that the large amount of emissions test data collected by PCS supports the request for reduced testing frequencies for specific pollutants and emission points at the Aurora facility and (2) SSCB agrees that continuing to test these emission sources at the frequencies currently specified in the air permit is impractical and unnecessary due to the large margin of compliance demonstrated by the historical test results. Each specific request is

discussed in detail below. A copy of the memo was provided to U.S. EPA Region 4 pursuant to 40 CFR Part 63.91(g)(1)(ii) and the Section 105 Grant Air Planning Agreement.

a. MAP/DAP Plant Nos. 2 and 3 (EP Nos. 303 and 302)

Total Fluorides

The Monoammonium/Diammonium Phosphate (MAP/DAP) Plant Nos. 2 and 3 are subject to a total fluorides emission standard under 15A NCAC 02D .0530 (BACT; Condition Nos. 2.1.3 A.4.c and 2.1.3 B.4.c) and 15A NCAC 02D .1111 (NESHAP Subpart BB; Condition Nos. 2.1.3 A.7.h and 2.1.3 B.7.h). The current permit requires PCS to test both MAP/DAP Plants annually for total fluorides to demonstrate compliance with each of these standards. With this application, PCS is requesting to reduce the annual total fluorides testing requirements for the MAP/DAP Plants to once every three years. Additionally, the facility has proposed a compliance method for the MAP/DAP Plants such that, if during testing, total fluoride emissions are equal to or exceed 80 percent of the relevant emission standard, PCS would revert to annual fluorides testing until 2 years of consecutive tests with results less than 80 percent of the relevant emission standard are demonstrated and testing for that pollutant would resume to the relaxed testing schedule. In support of this request, PCS has provided the following background information:

- 15A NCAC 02D .0530 (BACT; Condition Nos. 2.1.3 A.4.c and 2.1.3 B.4.c) provides an emission limit for each MAP/DAP Plant of 0.058 lb/ton P_2O_5 feed. According to the test data provided by PCS for 2009 through 2023, the maximum fluorides emissions from the MAP/DAP Plant No. 3 occurred in 2014 and were 0.0050 lb/ton P_2O_5 feed which is approximately 8.6% of the emission limit. The maximum fluorides emissions from the MAP/DAP Plant No. 2 occurred in 2020 and were 0.016 lb/ton P_2O_5 feed which is approximately 27.6% of the emission limit. From 2009 through 2023, the average yearly fluorides emissions from the MAP/DAP Plant Nos. 2 and 3 were only 12.3% and 2.7% of BACT, respectively.

- 15A NCAC 02D .1111 (NESHAP Subpart BB; Condition Nos. 2.1.3 A.7.h and 2.1.3 B.7.h) provides an emission limit for each MAP/DAP Plant of 0.060 lb/ton P_2O_5 feed. According to the test data provided by PCS for 2009 through 2023, the maximum fluorides emissions from the MAP/DAP Plant No. 3 occurred in 2014 and were 0.0050 lb/ton P_2O_5 feed which is approximately 8.3% of the emission limit. The maximum fluorides emissions from the MAP/DAP Plant No. 2 occurred in 2020 and were 26.7% of the emissions limit. From 2009 through 2023, the average yearly fluorides emissions from the MAP/DAP Plant Nos. 2 and 3 were only approximately 11.9% and 2.6% of the NESHAP limit, respectively.

Per 40 CFR 63.91(g)(1)(i)(I), a State may request that the EPA delegate any "Category I" authorities granted to the Administrator under Subpart A, including Sections 63.7(e)(2)(iv), (h)(2), and (h)(3), Waiver of Performance Testing.

Under the General Provisions, 40 CFR 63.7(e)(2)(iv) allows the Administrator to waive the requirement for performance tests if the owner/operator demonstrates compliance using other means:

> "(2) Performance tests shall be conducted and data shall be reduced in accordance with the test methods and procedures set forth in this section, in each relevant standard, and, if required, in applicable appendices of parts 51, 60, 61, and 63 of this chapter unless the Administrator-… (iv) Waives the requirement for performance tests because the owner or operator of an affected source has demonstrated by other means to the Administrator's satisfaction that the affected source is in compliance with the relevant standard."

Additionally, 40 CFR 63.7(h)(2) allows individual performance tests to be waived upon written application:

"Individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the

source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request."

40 CFR 63.7(h)(3) requires that any application for a waiver of subsequent performance testing include information to justify the waiver request:

"Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the affected source performing the required test."

Additionally, per 40 CFR 63.632[1], Subpart BB, including 40 CFR 63.626 "Performance Tests and Compliance Provisions", is implemented and enforced by the U.S. EPA or a delegated authority such as the applicable state.

Therefore, DAQ may waive the annual performance testing requirement for MAP/DAP Plant Nos. 2 and 3 under NESHAP Subpart BB if it is determined that PCS has demonstrated that MAP/DAP Plant Nos. 2 and 3 are in compliance with the relevant emission standards and that continuing to test these emission sources at the frequencies currently specified in the air permit is impractical and unnecessary due to the large margin of compliance demonstrated by the historical test results.

With this application for stack testing frequency reduction, PCS submitted historical testing results which demonstrated compliance with the Subpart BB emissions standards for the years 2009 through 2023, as shown in Table 4.2 below.

Table 4.2: Summary of Fluorides Stack Test Results for MAP/DAP Plant Nos. 2 and 3

	Emission Rate (lb/ton P_2O_5 feed)														
Plant	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
3	0.0012	0.0006	0.0003	0.001	0.00041	0.0050	0.0006	0.0004	0.0011	0.0009	0.0009	0.0008	0.0007	0.00078	0.0008
2	0.0159	0.0047	0.0032	0.002	0.00055	0.0021	0.0007	0.0007	0.0122	0.0013	0.0017	0.016	0.009	3.90E-05	1.30E-03

SSCB reviewed the historical test results and issued a memo on November 22, 2023 indicating that the annual fluorides testing requirement for the MAP/DAP Plant Nos. 2 and 3 may be reduced to once every three years, provided that the MACT-required CPMS are maintained, and the SSCB agrees with the proposed "trigger" threshold for the reduced testing frequencies that would require the facility to resume annual testing of 80% of the applicable standard.

Therefore, the stack testing requirements given in Conditions 2.1.3 A.4.c; 2.1.3 B.4.c; 2.1.3 A.7.h; and 2.1.3 B.7.h will be revised to reduce the annual total fluorides testing frequencies for the MAP/DAP Plant Nos. 2 and 3 to once every three years, provided that the MACT-required CPMS are maintained.

Particulate Matter (PM)

The MAP/DAP Plant No. 2 is subject to a particulate matter emission standard under 15A NCAC 02D .0530 (BACT; Condition No. 2.1.3 A.4.c). The current permit requires PCS to test annually for particulate matter to demonstrate compliance with this condition. With this application, PCS is requesting to reduce

[1] 40 CFR 63.632: The authorities specified in paragraphs (b)(1) through (5) of this section are retained by the Administrator of U.S. EPA and cannot be delegated to State, local, or Tribal agencies.
(1) Approval of alternatives to the requirements in §§63.620, 63.622, 63.625, 63.629, and 63.631.
(2) Approval of requests under §§63.7(e)(2)(ii) and 63.7 (f) for alternative requirements or major changes to the test methods specified in this subpart, as defined in §63.90.
(3) Approval of requests under §63.8(f) for alternative requirements or major changes to the monitoring requirements specified in this subpart, as defined in §63.90.
(4) Waiver or approval of requests under §63.10(f) for alternative requirements or major changes to the recordkeeping and reporting requirements specified in this subpart, as defined in §63.90.
(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart."

the particulate matter stack testing requirement from annually to once every three years. Additionally, the facility has proposed a compliance method for the MAP/DAP Plant No. 2 such that, if during testing, particulate matter emissions are equal to or exceed 80 percent of the emission standard, PCS would revert to annual particulate matter testing until 2 years of consecutive tests with results less than 80 percent of the relevant emission standard are demonstrated and testing for that pollutant would resume to the relaxed testing schedule. In support of this request, PCS has provided the following background information:

- 15A NCAC 02D .0530 (BACT; Condition No. 2.1.3 A.4.c) provides an emission limit for MAP/DAP Plant No. 2 of 64.1 pounds per hour. According to the test data provided by PCS for 2009 through 2023, the maximum particulate matter emissions from the MAP/DAP Plant No. 2 occurred in 2010 and were 22.4 pounds per hour which is approximately 34.9% of the emissions limit. From 2009 through 2023, the average yearly particulate matter emissions from the MAP/DAP Plant No. 2 were only 10.2% of BACT.

Table 4.3 below shows the complete particulate matter stack test data for the MAP/DAP Plant No. 2 for the years 2009 through 2023.

Table 4.3: Summary of PM Stack Test Results for MAP/DAP Plant No. 2

Emission Rate (lb/hr)														
2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
10.18	22.38	6.41	5.96	NA	4.80	5.13	11.35	11.37	5.49	4.06	1.30	1.30	0.58	0.79

The SSCB memo indicates that the annual particulate matter testing requirement for the MAP/DAP Plant No. 2 may be reduced to once every three years, provided that the MACT-required CPMS are maintained, and the SSCB agrees with the proposed "trigger" threshold for the reduced testing frequencies that would require the facility to resume annual testing of 80% of the applicable standard.

Therefore, the stack testing requirements given in Condition No. 2.1.3 A.4.c will be revised to reduce the annual particulate matter testing frequency for the MAP/DAP Plant No. 2 to once every three years, provided that the MACT-required CPMS are maintained.

b. SPA Plants 1, 2, 3, and 4 (EP Nos. 330-332; SPA Plants 3 and 4 share a stack – EP 332)

Total Fluorides

The Superphosphoric Acid (SPA) Plant Nos. 1, 2, 3, and 4 are subject to a total fluorides emission standard under 15A NCAC 02D .1111 (NESHAP Subpart AA; Condition Nos. 2.1.4 B.4.h and 2.1.4 C.4.h). The current permit requires PCS to test all SPA Plants annually for total fluorides to demonstrate compliance with each of these standards. With this application, PCS is requesting to reduce the annual total fluorides testing requirements for the SPA Plants to once every three years. Additionally, the facility has proposed a compliance method for the SPA Plants such that, if during testing, total fluoride emissions are equal to or exceed 80 percent of the relevant emission standard, PCS would revert to annual fluorides testing until 2 years of consecutive tests with results less than 80 percent of the relevant emission standard are demonstrated and testing for that pollutant would resume to the relaxed testing schedule. In support of this request, PCS has provided the following background information:

- 15A NCAC 02D .1111 (NESHAP Subpart AA; Condition Nos. 2.1.4 B.4.h and 2.1.4 C.4.h) provides an emission limit for each SPA Plant of 0.010 lb/ton P_2O_5 feed. According to the test data provided by PCS for 2009 through 2023, the maximum fluorides emissions from all of the SPA Plants occurred in 2018 and were 0.0051 lb/ton P_2O_5 feed (51% of the emission limit) from SPA Plant Nos. 3 and 4. From 2009 through 2023, the average yearly fluorides emissions from the SPA Plants 1, 2, 3, and 4 were only 4.7%, 3.5%, and 10.2% (SPA Plants 3 and 4 share a stack), respectively, of the NESHAP limit.

Per 40 CFR 63.91(g)(1)(i)(I), a State may request that the EPA delegate any "Category I" authorities granted to the Administrator under Subpart A, including Sections 63.7(e)(2)(iv), (h)(2), and (h)(3), Waiver of Performance Testing.

Under the General Provisions, 40 CFR 63.7(e)(2)(iv) allows the Administrator (in this case, NC DAQ) to waive the requirement for performance tests if the owner/operator demonstrates compliance using other means:

> "(2) Performance tests shall be conducted and data shall be reduced in accordance with the test methods and procedures set forth in this section, in each relevant standard, and, if required, in applicable appendices of parts 51, 60, 61, and 63 of this chapter unless the Administrator-… (iv) Waives the requirement for performance tests because the owner or operator of an affected source has demonstrated by other means to the Administrator's satisfaction that the affected source is in compliance with the relevant standard."

Additionally, 40 CFR 63.7(h)(2) allows individual performance tests to be waived upon written application:

"Individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request."

40 CFR 63.7(h)(3) requires that any application for a waiver of subsequent performance testing include information to justify the waiver request:

"Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the affected source performing the required test."

Additionally, per 40 CFR 63.611[2], Subpart AA, including 40 CFR 63.606 "Performance Tests and Compliance Provisions", is implemented and enforced by the U.S. EPA or a delegated authority such as the applicable state.

Therefore, DAQ may waive the annual performance testing requirement for the SPA Plants under NESHAP Subpart AA if it is determined that PCS has demonstrated that the SPA Plants are in compliance with the relevant emission standards and that continuing to test these emission sources at the frequencies currently specified in the air permit is impractical and unnecessary due to the large margin of compliance demonstrated by the historical test results.

With this application for stack testing frequency reduction, PCS submitted historical testing results which demonstrated compliance with the Subpart AA emissions standards for the years 2009 through 2023, as shown in Table 4.4 below.

Table 4.4: Summary of Fluorides Stack Test Results for SPA Plant Nos. 1-4

	Emission Rate (lb/ton P_2O_5 feed)

[2] 40 CFR 63.611: The authorities specified in paragraphs (b)(1) through (5) of this section are retained by the Administrator of U.S. EPA and cannot be delegated to State, local, or Tribal agencies.
(1) Approval of alternatives to the requirements in §§63.600, 63.602, 63.605, and 63.610.
(2) Approval of requests under §§63.7(e)(2)(ii) and 63.7 (f) for alternative requirements or major changes to the test methods specified in this subpart, as defined in §63.90.
(3) Approval of requests under §63.8(f) for alternative requirements or major changes to the monitoring requirements specified in this subpart, as defined in §63.90.
(4) Waiver or approval of requests under §63.10(f) for alternative requirements or major changes to the recordkeeping and reporting requirements specified in this subpart, as defined in §63.90.
(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart."

Plant	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
SPA 1	0.00020	3.30 E-04	6.38 E-04	1.30 E-03	6.00 E-04	7.00 E-04	4.00 E-04	3.00 E-04	6.00 E-04	3.00 E-04	5.00 E-04	9.00 E-04	1.00 E-04	0.00014	6.90 E-05
SPA 2	1.39 E-04	7.50 E-04	2.16 E-04	9.00 E-04	2.00 E-04	4.00 E-04	3.00 E-04	5.00 E-04	2.00 E-04	3.00 E-04	4.00 E-04	3.00 E-04	2.00 E-04	1.70 E-04	3.01 E-04
SPA 3/4	2.43 E-04	3.90 E-04	1.45 E-03	3.89 E-03	4.00 E-04	1.00 E-03	3.00 E-04	1.30 E-03	2.00 E-04	5.10 E-03	4.00 E-04	2.00 E-04	2.00 E-04	1.30 E-04	0.0001

SSCB reviewed the historical test results and issued a memo on November 22, 2023 indicating that the annual fluorides testing requirement for the SPA Plants may be reduced to once every three years, provided that the MACT-required CPMS are maintained, and the SSCB agrees with the proposed "trigger" threshold for the reduced testing frequencies that would require the facility to resume annual testing of 80% of the applicable standard.

Therefore, the stack testing requirements given in Conditions 2.1.4 B.4.h and 2.1.4 C.4.h will be revised to reduce the annual total fluorides testing frequencies for the SPA Plants to once every three years, provided that the MACT-required CPMS are maintained.

Sulfur Dioxide (SO2)

The SPA Plants Nos. 1, 2, 3, and 4 are subject to sulfur dioxide emissions standards under 15A NCAC 02D .501(c) (NAAQS; Condition No. 2.1.4 B.1; SPA Plants 1 and 2 only) and 15A NCAC 02D .0530 (PSD; Condition No. 2.1.4 C.3; SPA Plants 3 and 4 only). The current permit requires PCS to test all SPA Plants annually for sulfur dioxide to demonstrate compliance with each of these standards. With this application, PCS is requesting to reduce the annual sulfur dioxide testing requirements for the SPA Plants to once every three years. Additionally, the facility has proposed a compliance method for the SPA Plants such that, if during testing, sulfur dioxide emissions are equal to or exceed 80 percent of the relevant emission standard, PCS would revert to annual sulfur dioxide testing until 2 years of consecutive tests with results less than 80 percent of the relevant emission standard are demonstrated and testing for that pollutant would resume to the relaxed testing schedule. In support of this request, PCS has provided the following background information:

- 15A NCAC 02D .0501(c) (NAAQS; Condition No. 2.1.4 B.1) provides an emission limit for SPA Plant Nos. 1 and 2 of 30 pounds per day and 50 pounds per day, respectively. According to the test data provided by PCS for 2009 through 2023, the maximum SO2 emissions from SPA Plant Nos. 1 and 2 occurred in 2020 and 2012, respectively, and were 11.52 pounds per day (38.4% of the emission limit) and 0.92 pounds per day (1.8% of the emission limit), respectively. From 2009 through 2023, the average yearly SO2 emissions from the SPA Plant Nos. 1 and 2 were only 7.2% and 0.4% of the 02D .0501(c) limit, respectively.

- 15A NCAC 02D .0530 (PSD; Condition No. 2.1.4 C.3) provides an emission limit for SPA Plant Nos. 3 and 4 of 400 pounds per day, for both plants combined. According to the test data provided by PCS for 2009 through 2023, the maximum combined SO2 emissions from SPA Plant Nos. 3 and 4 occurred in 2018 and were 43.71 pounds per day (10.9% of the emission limit). From 2009 through 2023, the average yearly SO2 emissions from the SPA Plant Nos. 3 and 4 were only 3.9% of the PSD limit.

Table 4.5 below shows the complete sulfur dioxide stack test data for SPA Plant Nos. 1-4 for the years 2009 through 2023 (where available).

Table 4.5: Summary of SO2 Stack Test Results for SPA Plant Nos. 1-4

	Emission Rate (lb/day)														
Plant	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
SPA 1	0.26400	0.10	0.39	0.85	0.3	0.067	0.09	4.53	4.65	2.56	2.87	11.52	2.23	1.72	3.40E-01

SPA 2	0.1072	0.11	0.006	0.92	0.25	0.066	0.12	0.27	0.057	0.145	0.246	0.03	0.036	3.41E-01	8.50E-03
SPA 3/4	41.92	2.36	7.75	17.84	7.4	8.288	19	24.59	16.84	43.71	9.587	13.4	12.05	6.73	Pending

The SSCB memo indicates that the annual SO2 testing requirement for the SPA Plants may be reduced to once every three years, provided that the MACT-required CPMS are maintained, and the SSCB agrees with the proposed "trigger" threshold for the reduced testing frequencies that would require the facility to resume annual testing of 80% of the applicable standard. SSCB further recommends that a continuous monitoring requirement for the scrubbers at SPA Plant Nos. 1 and 2 be added with the NAAQS condition to ensure compliance with the limits on a continuous basis.

Therefore, the stack testing requirements given in Conditions 2.1.4 B.1 and 2.1.4 C.3 will be revised to reduce the annual SO2 testing frequencies for the SPA Plants to once every three years, provided that the MACT-required CPMS are maintained. A continuous scrubber monitoring requirement will be added to the NAAQS condition for SPA Plant Nos. 1 and 2 to ensure compliance with the SO2 NAAQS.

c. Phosphoric Acid Plants 1-4 (EP Nos. 401, 403, 404, 406, 408, and 409)

Total Fluorides

The Phosphoric Acid (PA) Plant Nos. 1, 2, 3, and 4 are subject to a total fluorides emission standard under 15A NCAC 02D .1111 (NESHAP Subpart AA; Condition No. 2.1.5 A.4). It is important to note that this application is not requesting a reduction in total fluorides testing for PA Plant No. 3 (ep 406). The current permit requires PCS to test all PA Plants annually for total fluorides to demonstrate compliance with each of these standards. With this application, PCS is requesting to reduce the annual total fluorides testing requirements for the PA Plant Nos. 1, 2, and 4 to once every three years. Additionally, the facility has proposed a compliance method for the PA Plants such that, if during testing, total fluoride emissions are equal to or exceed 80 percent of the relevant emission standard, PCS would revert to annual fluorides testing until 2 years of consecutive tests with results less than 80 percent of the relevant emission standard are demonstrated and testing for that pollutant would resume to the relaxed testing schedule. In support of this request, PCS has provided the following background information:

- 15A NCAC 02D .1111 (NESHAP Subpart AA; Condition No. 2.1.5 A.4) provides an emission limit for each PA Plant of 0.020 lb/ton P_2O_5 feed. According to the test data provided by PCS for 2009 through 2023, the maximum fluorides emissions from all of the PA Plants occurred in 2012 and were 0.013 lb/ton P_2O_5 feed (65% of the emission limit) from PA Plant No. 2. From 2009 through 2023, the average yearly fluorides emissions from the PA Plant Nos. 1, 2, and 4 were 29.2%, 32.6%, and 26.1%, respectively, of the NESHAP limit.

Per 40 CFR 63.91(g)(1)(i)(I), a State may request that the EPA delegate any "Category I" authorities granted to the Administrator under Subpart A, including Sections 63.7(e)(2)(iv), (h)(2), and (h)(3), Waiver of Performance Testing.

Under the General Provisions, 40 CFR 63.7(e)(2)(iv) allows the Administrator (in this case, NC DAQ) to waive the requirement for performance tests if the owner/operator demonstrates compliance using other means:

> "(2) Performance tests shall be conducted and data shall be reduced in accordance with the test methods and procedures set forth in this section, in each relevant standard, and, if required, in applicable appendices of parts 51, 60, 61, and 63 of this chapter unless the Administrator-… (iv) Waives the requirement for performance tests because the owner or operator of an affected source has demonstrated by other means to the Administrator's satisfaction that the affected source is in compliance with the relevant standard."

Additionally, 40 CFR 63.7(h)(2) allows individual performance tests to be waived upon written application:

"Individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request."

40 CFR 63.7(h)(3) requires that any application for a waiver of subsequent performance testing include information to justify the waiver request:

"Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the affected source performing the required test."

Additionally, per 40 CFR 63.611[3], Subpart AA, including 40 CFR 63.606 "Performance Tests and Compliance Provisions", is implemented and enforced by the U.S. EPA or a delegated authority such as the applicable state.

Therefore, DAQ may waive the annual performance testing requirement for the PA Plants under NESHAP Subpart AA if it is determined that PCS has demonstrated that the PA Plants are in compliance with the relevant emission standards and that continuing to test these emission sources at the frequencies currently specified in the air permit is impractical and unnecessary due to the large margin of compliance demonstrated by the historical test results.

With this application for stack testing frequency reduction, PCS submitted historical testing results which demonstrated compliance with the Subpart AA emissions standards for the years 2009 through 2023, as shown in Table 4.6 below.

Table 4.6: Summary of Fluorides Stack Test Results for PA Plant Nos. 1, 2, and 4

	Emission Rate (lb/ton P_2O_5 feed)														
Plant	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
PA #1	0.00532	0.0054	7.39 E-03	5.02 E-03	5.04 E-03	5.03 E-03	5.02 E-03	2.02 E-03	8.00 E-03	8.03 E-03	4.60 E-03	3.70 E-03	5.10 E-03	1.26 E-02	5.30 E-03
PA #2	0.00763	0.0068	9.89 E-03	1.30 E-02	5.08 E-03	4.20 E-03	5.04 E-03	4.10 E-03	7.00 E-03	6.05 E-03	3.60 E-03	4.30 E-03	5.30 E-03	3.50 E-03	1.23 E-02
PA #4	0.01124	0.0038	3.83 E-03	4.02 E-03	4.03 E-03	3.03 E-03	6.04 E-03	6.89 E-03	1.00 E-02	4.99 E-03	6.59 E-03	4.55 E-03	3.36 E-03	2.97 E-03	3.05 E-03

SSCB reviewed the historical test results and issued a memo on November 22, 2023 indicating that the annual fluorides testing requirement for the PA Plant Nos. 1, 2, and 4 may be reduced to once every three years, provided that the MACT-required CPMS are maintained, and the SSCB agrees with the proposed "trigger" threshold for the reduced testing frequencies that would require the facility to resume annual testing of 80% of the applicable standard.

Therefore, the stack testing requirements given in Condition 2.1.5 A.4 will be revised to reduce the annual total fluorides testing frequencies for the PA Plant Nos. 1, 2, and 4 to once every three years, provided that the MACT-required CPMS are maintained.

[3] 40 CFR 63.611: The authorities specified in paragraphs (b)(1) through (5) of this section are retained by the Administrator of U.S. EPA and cannot be delegated to State, local, or Tribal agencies.
(1) Approval of alternatives to the requirements in §§63.600, 63.602, 63.605, and 63.610.
(2) Approval of requests under §§63.7(e)(2)(ii) and 63.7 (f) for alternative requirements or major changes to the test methods specified in this subpart, as defined in §63.90.
(3) Approval of requests under §63.8(f) for alternative requirements or major changes to the monitoring requirements specified in this subpart, as defined in §63.90.
(4) Waiver or approval of requests under §63.10(f) for alternative requirements or major changes to the recordkeeping and reporting requirements specified in this subpart, as defined in §63.90.
(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart."

Sulfur Dioxide

The PA Plant Nos. 1, 2, 3, and 4 are subject to sulfur dioxide emissions standards under 15A NCAC 02D .501(c) (NAAQS; Condition No. 2.1.5 A.1) and 15A NCAC 02D .0530 (PSD; Condition No. 2.1.5 A.2). The current permit requires PCS to test PA Plant Nos. 1 or 2 and Plant Nos. 3 or 4 annually for sulfur dioxide to demonstrate compliance with each of these standards. To ensure compliance with the NAAQS limit, one plant shall be tested each year while processing amber acid and one plant shall be tested each year while processing green acid. With this application, PCS is requesting to reduce the annual sulfur dioxide testing frequency for the PA Plants to once every three years. Additionally, the facility has proposed a compliance method for the PA Plants such that, if during testing, sulfur dioxide emissions are equal to or exceed 80 percent of the relevant emission standard, PCS would revert to annual sulfur dioxide testing until 2 years of consecutive tests with results less than 80 percent of the relevant emission standard are demonstrated and testing for that pollutant would resume to the relaxed testing schedule. In support of this request, PCS has provided the following background information:

- 15A NCAC 02D .0501(c) (NAAQS; Condition No. 2.1.5 A.1) provides an emission limit for PA Plant Nos. 1 and 2 of 486 pounds per day, each, and for PA Plant Nos. 3 and 4, 961 pounds per day, each. According to the test data provided by PCS for 2009 through 2023, the maximum SO2 emissions from the PA Plant Nos. 1 and 2 occurred in 2011 and were 284 pounds per day (58.4% of the emission limit). The maximum SO2 emissions from the PA Plant Nos. 3 and 4 occurred in 2010 and were 446 pounds per day (46.4% of the emission limit). From 2009 through 2023, the average yearly SO2 emissions from the PA Plant Nos. 1, 2, 3, and 4 were 30.8%, 29.3%, 34.5%, and 23.8% of the NAAQS limit, respectively.

- 15A NCAC 02D .0530 (PSD; Condition No. 2.1.5 A.2) provides an emission limit for the PA Plant Nos. 1 and 2 of 486 pounds per day, each, and for PA Plant Nos. 3 and 4, 960 pounds per day, each. According to the test data provided by PCS for 2009 through 2023, the maximum SO2 emissions from PA Plant Nos. 1 and 2 occurred in 2011 and were 284 pounds per day (58.4% of the emission limit). The maximum SO2 emissions from the PA Plant Nos. 3 and 4 occurred in 2010 and were 446 pounds per day (46.5% of the emission limit). From 2009 through 2023, the average yearly SO2 emissions from the PA Plant Nos. 1, 2, 3, and 4 were 30.8%, 29.3%, 34.5%, and 23.8% of the PSD limit, respectively.

Table 4.7 below shows the complete SO2 stack test data for PA Plant Nos. 1-4 for the years 2009 through 2023.

Table 4.7: Summary of SO2 Stack Test Results for PA Plant Nos. 1-4

	Emission Rate (lb/day)														
Plant	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
PA #1		64		222		118		153	211		120		160		151
PA #2	116		284		228		188			102		78		143	
PA #3	328			442		229	206		380		396		283		337
PA #4		446	357		262			213		371.0		235		172	

*Annual testing requirement for either Plant 1 or 2 and Plant 3 or 4, so only two plants are tested each year.

The SSCB memo indicates that the annual SO2 testing requirement for the PA Plants may be reduced to once every three years, provided that the MACT-required CPMS are maintained, and the SSCB agrees with the proposed "trigger" threshold for the reduced testing frequencies that would require the facility to resume annual testing of 80% of the applicable standard.

Therefore, the stack testing requirements given in Conditions 2.1.5 A.1 and 2.1.5 A.2 will be revised to reduce the annual SO2 testing frequencies for the PA Plants to once every three years, provided that the MACT-required CPMS are maintained.

d. PAP No. 2 Trains 3 and 4 Chiller Stack and Scrubber Stacks (EP Nos. 503, 504, and 506)

Total Fluorides

The Purified Acid Plant (PAP) No. 2 Train 3 and Train 4 Chiller Stack (ep 503), Train 3 Scrubber Stack (ep 504), and Train 4 Scrubber Stack (ep 506) are subject to a total fluorides emission standard under 15A NCAC 02D .0530 (BACT; Condition Nos. 2.1.6 D.1, 2.1.6 H.1, 2.1.6 E.1, and 2.1.6 I.1). The current permit requires PCS to test the PAP No. 2 stacks (ep 503, 504, and 506) once per permit term (every five years) for total fluorides to demonstrate compliance with this standard. With this application, PCS is requesting to discontinue testing the PAP No. 2 stacks (ep 503, 504, and 506). In support of this request, PCS has provided the following background information:

- 15A NCAC 02D .0530 (BACT; Condition Nos. 2.1.6 D.1, 2.1.6 H.1) provides an emission limit for the PAP No. 2 Train 3 and Train 4 Chiller Stack (ep 503) of 1.52E-02 pounds per hour. According to the test data provided by PCS for 2004 through 2023, the maximum fluorides emissions from this stack (ep 503) occurred in 2007 and were 8.10E-04 pounds per hour (5.3% of the emission limit). From 2009 through 2023, the average yearly fluorides emissions from this stack (ep 503) were 1.1% of BACT.

- 15A NCAC 02D .0530 (BACT; Condition No. 2.1.6 E.1) provides an emission limit for the PAP No. 2 Train 3 Scrubber Stack (ep 504) of 0.0688 pounds per hour. According to the test data provided by PCS for 2004 through 2023, the maximum fluorides emissions from this stack (ep 504) occurred in 2004 and were 0.0035 pounds per hour (5.1% of the emission limit). From 2009 through 2023, the average yearly fluorides emissions from this stack (ep 504) were 3.0% of BACT.

- 15A NCAC 02D .0530 (BACT; Condition No. 2.1.6 I.1) provides an emission limit for the PAP No. 2 Train 4 Scrubber Stack (ep 506) of 0.0688 pounds per hour. According to the test data provided by PCS for 2004 through 2023, the maximum fluorides emissions from this stack (ep 506) occurred in 2007 and were 0.0022 pounds per hour (3.2% of the emission limit). From 2009 through 2023, the average yearly fluorides emissions from this stack (ep 506) were 2.0% of BACT.

Table 4.8 below shows the complete fluorides stack test data for PAP No. 2 Trains 3 and 4 Chiller and Scrubber Stacks for the years 2004 through 2023 (where available).

Table 4.8: Summary of Fluorides Stack Test Results for PAP No. 2 Trains 3 and 4 Chiller and Scrubber Stacks

	Emission Rate (lb/hr)					
Plant	**2004**	**2007** [2]	**2012**	**2017**	**2023**	**Limit**
503	5.30E-07	8.10E-04	3.60E-06	1.45E-07	1.41E-06	1.52E-02
504	0.0035	0.0007	1.62E-03	2.42E-03	Pending [3]	6.88E-02
506	NA [1]	0.0022	1.00E-03	1.14E-03	1.21E-03	6.88E-02

Note 1: EP ID No. 506 not operational until 2007 (Plant #4 Scrubber Stack)
Note 2: EP ID No. 504 tested in 2009 instead of 2007.
Note 3: EP ID No. 506 testing not anticipated until late 2023/early 2024.

The SSCB memo indicates that the fluorides testing requirement for the PAP Plant No. 2, Train 3 and Train 4 Chiller Stack (ep 503), Train 3 Scrubber Stack (ep 504), and Train 4 Scrubber Stack (ep 506) may be discontinued.

Therefore, the stack testing requirements given in Condition 2.1.6 D.1, 2.1.6 H.1, 2.1.6 E.1, and 2.1.6 I.1 will be revised to remove the total fluorides testing requirements.

5. Regulatory Review

a. MAP/DAP Plant Nos. 2 and 3 (EP Nos. 303 and 302)

The following permit conditions apply to the MAP/DAP Plant Nos. 2 and 3 and are affected by this permitting action:

- 15A NCAC 02D .0530: Prevention of Significant Deterioration;
- 15A NCAC 02D .1100: Control of Toxic Air Pollutants; and
- 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR 63 Subpart BB)

i. 15A NCAC 02D .0530: Prevention of Significant Deterioration

This rule applies to the MAP/DAP Plant Nos. 2 and 3 and limits emissions of fluorides and particulate matter (Plant No. 2 only).

MAP/DAP Plant Nos. 2 and 3 demonstrate continuous compliance with this rule by conducting periodic performance testing and by continuously monitoring the mass flow rate of phosphorus bearing material to the process, the pressure drop across each wet scrubber, and the flow rate of scrubbing liquid to each scrubber.

As discussed in Section 4.a above, the testing requirements for these two plants will be reduced from annually to once every three years.

No other changes will be made to this condition.

ii. 15A NCAC 02D .1100: Control of Toxic Air Pollutants

Compliance with air toxics is discussed in Section 7 below.

iii. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR 63 Subpart BB)

This rule applies to the MAP/DAP Plant Nos. 2 and 3 and limits emissions of fluorides.

MAP/DAP Plant Nos. 2 and 3 demonstrate continuous compliance with this rule by conducting periodic performance testing and by continuously monitoring the mass flow rate of phosphorus bearing material to the process, the pressure drop across each wet scrubber, and the flow rate of scrubbing liquid to each scrubber.

As discussed in Section 4.a above, the testing requirements for these two plants will be reduced from annually to once every three years.

No other changes will be made to this condition.

b. SPA Plants 1, 2, 3, and 4 (EP Nos. 330-332; SPA Plants 3 and 4 share a stack – EP 332)

The following permit conditions apply to the SPA Plants 1, 2, 3, and 4 and are affected by this permitting action:

- 15A NCAC 02D .0501(c): Compliance with National Ambient Air Quality Standards
- 15A NCAC 02D .0530: Prevention of Significant Deterioration; and
- 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR 63 Subpart AA)

i. 15A NCAC 02D .0501(c): Compliance with National Ambient Air Quality Standards

This rule applies to SPA Plant Nos. 1. and 2 and limits emissions of sulfur dioxide.

SPA Plant Nos. 1 and 2 demonstrate continuous compliance with this rule by conducting periodic performance testing. No continuous monitoring requirement is currently included with this condition. However, the memo from Steve Hall on November 22, 2023 indicates that a continuous monitoring requirement is recommended to ensure compliance with the emission standard. Thus, this condition will be modified to include a continuous monitoring requirement such that the facility shall continuously monitor the mass flow rate of phosphorus bearing material to the process, the pressure drop across each wet scrubber, and the flow rate of scrubbing liquid to each scrubber, as required by NESHAP/MACT Subpart AA (Permit Condition No. 2.1.4 B.4.k through p).

As discussed in Section 4.b above, this condition will also be modified to reduce the sulfur dioxide testing requirement from annually to once every three years.

ii. 15A NCAC 02D .0530: Prevention of Significant Deterioration

This rule applies to the SPA Plant Nos. 3 and 4 and limits emissions of sulfur dioxide.

SPA Plant Nos. 3 and 4 demonstrate continuous compliance with this rule by conducting periodic performance testing and by continuously monitoring the mass flow rate of phosphorus bearing material to the process and the flow rate of scrubbing liquid to each scrubber, as required by NESHAP/MACT Subpart AA (Permit Condition No. 2.1.4 C.4.k through p).

As discussed in Section 4.b above, the testing requirements for these plants will be reduced from annually to once every three years.

No other changes will be made to this condition.

iii. 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR 63 Subpart AA)

This rule applies to the SPA Plants 1-4 and limits emissions of fluorides.

SPA Plants 1-4 demonstrate continuous compliance with this rule by conducting periodic performance testing and by continuously monitoring the mass flow rate of phosphorus bearing material to the process, the pressure drop across each wet scrubber, and the flow rate of scrubbing liquid to each scrubber.

As discussed in Section 4.b above, the testing requirement for these plants will be reduced from annually to once every three years.

No other changes will be made to this condition.

c. Phosphoric Acid Plants 1-4 (EP Nos. 401, 403, 404, 406, 408, and 409)

The following permit conditions apply to the PA Plants 1, 2, 3, and 4 and are affected by this permitting action:

- 15A NCAC 02D .0501(c): Compliance with National Ambient Air Quality Standards
- 15A NCAC 02D .0530: Prevention of Significant Deterioration; and
- 15A NCAC 02D .1111: Maximum Achievable Control Technology (40 CFR 63 Subpart AA)

i. 15A NCAC 02D .0501(c): Compliance with National Ambient Air Quality Standards

This rule applies to the PA Plant Nos. 1-4 and limits emissions of sulfur dioxide.

PA Plant Nos. 1-4 demonstrate continuous compliance with this rule by conducting periodic performance testing. The facility also continuously monitors the mass flow rate of phosphorus bearing material to each PA Plant and the influent liquid flow and pressure drop through the adsorber, pursuant to the requirements of NESHAP/MACT Subpart AA (Permit Condition No. 2.1.5 A.4.k through q). This continuous monitoring requirement is not specifically referenced in the 02D .0501(c) condition, but language will be added to the permit specifying this requirement.

As discussed in Section 4.c above, the testing requirement for these plants will be reduced from annually to once every three years.

ii. 15A NCAC 02D .0530: Prevention of Significant Deterioration

This rule applies to the PA Plant Nos. 1-4 and limits emissions of sulfur dioxide and total fluorides.

The PA Plants demonstrate continuous compliance with this rule by conducting periodic performance testing and by continuously monitoring the mass flow rate of phosphorus bearing material to the process and the influent liquid flow and pressure drop through the adsorber, as required by NESHAP/MACT Subpart AA (Permit Condition No. 2.1.5 A.4.k through q).

As discussed in Section 4.c above, the testing requirements for these plants will be reduced from annually to once every three years.

No other changes will be made to this condition.

iii. 15A NCAC 02D .1111: Maximum Achievable Control Technology(40 CFR 63 Subpart AA)

This rule applies to the PA Plants 1-4 and limits emissions of fluorides.

PA Plants 1-4 demonstrate continuous compliance with this rule by conducting periodic performance testing and by continuously monitoring the mass flow rate of phosphorus bearing material to the process and the influent liquid flow and pressure drop through the adsorber.

As discussed in Section 4.c above, the testing requirement for these plants will be reduced from annually to once every three years.

No other changes will be made to this condition.

d. PAP No. 2 Trains 3 and 4 Chiller Stack and Scrubber Stacks (EP Nos. 503, 504, and 506)

The following permit conditions apply to the PAP No. 2 Trains 3 and 4 Stacks and are affected by this permitting action:

- 15A NCAC 02D .0530: Prevention of Significant Deterioration; and
- 15A NCAC 02D .1100: Control of Toxic Air Pollutants

i. 15A NCAC 02D .0530: Prevention of Significant Deterioration

This rule applies to the PAP Plant No. 2 Trains 3 and 4 Chiller Stack (ep 503), Train 3 Scrubber Stack (ep 504), and Train 4 Scrubber Stack (ep 506) and limits emissions of total fluorides.

The PAP Plant No. 2 Trains demonstrate continuous compliance with this rule by conducting periodic performance testing. The Trains 2 and 4 Scrubber Stacks (ep 504 and 506) continuously monitor the liquid injection rate for each wet scrubber. As noted in the application, continuous monitoring is not required for the Trains 3 and 4 Chiller Stacks for fluoride emissions.

As discussed in Section 4.d above, the testing requirements for these plants will be discontinued.

No other changes will be made to this condition.

ii. 15A NCAC 02D .1100: Control of Toxic Air Pollutants

Compliance with air toxics is discussed in Section 7 below.

6. NSPS, NESHAP, PSD, CAM, and 112(r) Applicability

a. NSPS

No NSPS regulations are affected by this permitting action.

b. NESHAP

NESHAP Subparts AA and BB are both affected by this permitting action as discussed in Sections 4 and 5 above. NESHAP/MACT applicability is not affected by this permitting action.

c. PSD

There is no change in emissions associated with this application. PSD applicability is not affected by this permitting action.

d. CAM

At the last renewal, CAM applicability was determined for the entire facility (Permit No. 04176T68, issued December 22, 2022). This permitting action does not increase emissions for any PSEUs. Therefore, a revised CAM analysis is not required.

e. 112(r)

112(r) applicability is not affected by this permitting action.

7. Facility-Wide Air Toxics

PCS Phosphate is subject to Air Toxics under 15A NCAC 02D .1100 for emissions of various toxic air pollutants (TAPs) including fluorides. According to 15A NCAC 02Q .0706 for modifications, owners and operators are required to "…submit a permit application to comply with 15A NCAC 02D .1100 if the modification results in: (1) a net increase in emissions or ambient concentration of any toxic air pollutant that the facility was emitting before the modification; or (2) emissions of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711…."

With this application for stack test reductions, no changes are expected to the emissions from the facility. The most recent dispersion modeling analysis for fluorides was reviewed on March 26, 2021. Compliance with 02D .1100 can be determined by comparing the actual fluorides emission rate for each source to the 02D .1100 emission limit. Table 7.1 below shows compliance with 02D .1100 for each source discussed in Section 4 above.

Table 7.1: Compliance with 02D .1100

Emission Source	Emission Release Point	02D .1100 Fluorides Emission Limit[1]	Highest Fluorides Emission Rate[2]	In compliance with 02D .1100?
MAP/DAP Plant No. 2	303	0.055 lb/ton P_2O_5 feed	0.016 lb/ton P_2O_5 feed	Yes
MAP/DAP Plant No. 3	302	0.055 lb/ton P_2O_5 feed	0.005 lb/ton P_2O_5 feed	Yes
SPA Plant No. 1	330	0.196 lb/hr	0.0183 lb/hr	Yes
SPA Plant No. 2	331	0.196 lb/hr	0.007 lb/hr	Yes
SPA Plant Nos. 3 and 4	332	0.218 lb/hr	0.1485 lb/hr	Yes
PA Plant No. 1	401	0.441 lb/hr	0.051 lb/hr	Yes
	403	0.296 lb/hr	0.046 lb/hr	Yes
PA Plant No. 2	404	0.493 lb/hr	0.469 lb/hr	Yes
PA Plant No. 4	408	0.296 lb/hr	0.086 lb/hr	Yes
	409	0.507 lb/hr	0.343 lb/hr	Yes
PAP No. 2 Train 3 and 4 Chiller Stack	503	7.77E-03 lb/hr	8.10E-04 lb/hr	Yes
PAP No. 2 Train 3 Scrubber Stack	504	3.52E-02 lb/hr	3.50E-03 lb/hr	Yes
PAP No. 2 Train 4 Scrubber Stack	506	3.52E-02 lb/hr	2.20E-03 lb/hr	Yes

[1]For sources without explicit emission limits listed in the permit, the modeled emission rate from the March 26, 2021 modeling review for fluorides was used for comparison.
[2]Highest fluorides emission rates are based on data from DAQ stack test review memos and the stack testing data submitted with the application.

The data in Table 7.1 comes from nearly two decades of stack tests conducted from 2004 through 2023. During this period, no exceedances of the 02D .1100 emission rates occurred from any of the sources in question. Therefore, the requested reductions in stack testing are not expected to affect compliance with 02D .1100, and continued compliance is expected.

8. Facility Emissions Review

The table above (in the review summary) represents the criteria pollutant (plus total HAP) from the latest available reviewed facility emissions inventories (CY2018 - 2022).

No changes to the facility-wide emissions are expected with this permitting action.

9. Facility Compliance Status

DAQ has reviewed the compliance status of this facility. The most recent full facility-wide inspection, conducted on April 28, 2023 by Robert Bright of the Washington Regional Office, appears to indicate that the facility was operating in compliance at the time of the inspection.

Moreover, the facility responsible official has certified compliance with all applicable requirements through completion of form E5, signed October 9, 2023.

The facility has received only one Notice of Violation in the last five years. This NOV was sent on June 24, 2019 due to fluoride emissions from Calciner 4 exceeding the MACT emission limit during testing. This NOV was resolved on September 3, 2019.

10. Public Notice/EPA Review

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall be made. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA.

Public Notice of the DRAFT Title V Permit ran from XXXXX XX, 2024 to XXXXXX XX, 2024.

EPA's 45-day review period ran concurrent with the 30-day Public Notice, from XXXX XX, 2024 to XXXXX XX, 2024.

11. Other Regulatory Considerations

- Professional Engineer (PE) Seal Requirement – 15A NCAC 02Q .0112, Applications Requiring Professional Engineer Seal

  This regulation requires that a professional engineer (PE) licensed to practice in NC is required to seal the technical portions of air permit application for new and modified sources that involve design, determination of applicability and appropriateness, or determination and interpretation of performance of air pollution capture and control systems.

  A PE Seal was not required for this application.

- Zoning Requirement – 15A NCAC 02Q .0305(a)(1)(B) and .0304(b)(1)

  Pursuant to 15A NCAC 02Q .0507(d), a zoning consistency determination is required if expanding or adding new sources in accordance with G.S. 143-215.108(f).

  The facility is not expanding or adding any new sources with this application.

  A zoning consistency determination was not required for this application.

- An application fee of $7,764 was required and received for this application on October 9, 2023.

- The pink sheet indicates that an appropriate number of applications were received with the initial submittal on October 9, 2023.

12. Conclusions, Comments, and Recommendations

Comments were received from Mr. Joe Sullivan of PCS Phosphate on March 8, 2024. The comments have been summarized and addressed below as follows:

Comment 1: This comment pertains to the discussion of delegation of authority to reduce stack testing requirements under NESHAP Subparts AA and BB. Mr. Sullivan provided reference to 40 CFR 63.91(g)(1)(i)(I) as well as 40 CFR 63.7(e)(2)(iv), (h)(2), and (h)(3) as the basis of the permitting determination to reduce stack testing frequencies under Part 63.

DAQ Response: Agree with comment. Language has been added to the review (see Sections 4.a, 4.b, and 4.c, above) to include the discussion of the regulatory basis for stack test reduction.

Comment 2: Mr. Sullivan requested the language in the permit for sources to be tested once every three years be updated from "triennially" to "at least once every three years".

DAQ Response: Agree with comment. The language in the permit has been updated.

Comment 3: Mr. Sullivan provided revised language for determination of "normal production" for various sources.

DAQ Response: Agree with comment. The language in the permit has been revised.

Comment 4: Mr. Sullivan requested that references to annual testing for the calciners in permit conditions 2.1.2 A.1.c and 2.1.2 A.5.h be removed since the calciners' testing frequencies were updated with the T69 revision.

DAQ Response: Agree with comment. References to annual testing have been revised in the permit.

This permit modification application has been reviewed by NC DAQ to determine compliance with all procedures and requirements. NC DAQ has determined that this facility appears to be complying with all applicable requirements. This permit engineer recommends issuance of Permit No. 04176T72.

Attachment 1: SSCB Memo

DIVISION OF AIR QUALITY
Technical Services Section
217 West Jones Street / 1641 Mail Service Center
Raleigh, NC 27699-1641

November 21, 2023

MEMORANDUM

TO: Mark Cuilla, Title V Permitting Section Chief

FROM: Steve Hall, Technical Services Section Chief SGH

SUBJECT: **Review of Request for Reduced Testing Frequencies**
PCS Phosphate Company, Inc.
Aurora, Beaufort County, North Carolina
Facility ID No. 0700071; Current Air Permit No. 04176T69

On October 25, 2023, Emily Supple of your staff forwarded to me a permit application (0700071.23B) submitted to the Division of Air Quality (DAQ) by PCS Phosphate Company – Aurora (PCS Phosphate) on October 9, 2023. On October 27, 2023, Ms. Supple forwarded to me some follow-up information submitted to DAQ by PCS Phosphate on the same day correcting some errors in the original application. On November 13, 2023, Joe Sullivan with PCS Phosphate emailed Ms. Supple and me a revised Table 1 to correct a minor error and to provide some additional, clarifying information. This permit application was essentially a request to reduce the emissions testing frequencies defined in the facility's current air permit for the two diammonium/monoammonium phosphate (DAP/MAP) plants, four superphosphoric acid (SPA) plants, four phosphoric acid plants/trains, and a purified acid plant for certain pollutants from specific emission points based on the results of multiple emission tests on these emission sources over the last 15-20 years. The company cites DAQ's delegated authority by the United States Environmental Protection Agency (US EPA) for the Title V permitting program in North Carolina and to approve testing waiver requests pursuant to 40 CFR 63.7(e)(2)(iv), (h)(2), and (h)(3). The primary basis cited for the reduced testing frequencies is that the historical test results provided in support of the request demonstrate that the current testing frequencies outlined in the facility's Title V permit for these sources are technically/economically infeasible or impractical.

In some cases, PCS Phosphate requested that the frequency of certain testing requirements in their air permit be reduced and in other cases eliminated entirely. The testing requirements in question are included in the facility's Title V permit pursuant to 15A NCAC 02D .0501(c) "Compliance with National Ambient Air Quality Standards" (NAAQS), 15A NCAC 02D .0530 "Prevention of Significant Deteriorations" (PSD) and 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT), as promulgated in 40 CFR Part 63, Subpart AA, "National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing Plants" and 40 CFR Part 63, Subpart BB, "National Emission Standards for Hazardous Air Pollutants from Phosphate Fertilizer Production Plants." US EPA Region 4 will be provided a copy of this memorandum pursuant to 40 CFR Part 63.91(g)(1)(ii) and our Section 105 Grant Air Planning Agreement.

The Stationary Source Compliance Branch (SSCB) has reviewed PCS Phosphate's request and agrees that the testing frequencies for specific pollutants and emissions points (ep) at the Aurora facility can be reduced or eliminated as detailed below. All specific condition references are from Air Permit No. 04176T69.

- Specific Condition 2.1.3.A.4.c. requires annual testing for total particulate matter (PM) and particulate matter less than 10 microns (PM_{10}) emissions from the DAP/MAP Plant No. 2 (ep303) pursuant to 15A NCAC 02D .0530.
    - Based on the annual test results dating back to 2009 which have consistently demonstrated a large margin of compliance (all test results less than 35% and most less than 10% of the applicable emission standard), the company requests that this testing requirement be reduced to once every three years.
        - SSCB agrees that the testing frequency for these requirements can be reduced to once every three years.
- Specific Conditions 2.1.3.A.4.c. and 2.1.3.A.7.h. require annual testing for total fluoride emissions from the DAP/MAP Plant No. 2 (ep303) pursuant to 15A NCAC 02D .0530 and 15A NCAC 02D .1111 / 40 CFR Part 63, Subpart BB.
    - Based on the annual test results dating back to 2009 which have consistently demonstrated a large margin of compliance (all test results less than 30% and most less than 10% of the applicable emission standard), the company requests that this testing requirement be reduced to once every three years.
        - SSCB agrees that the testing frequency for these requirements can be reduced to once every three years provided that the MACT-required continuous parametric monitoring systems (CPMS) are maintained.
- Specific Conditions 2.1.3.B.4.c. and 2.1.3.B.7.h. annual testing for total fluoride emissions from the DAP/MAP Plant No. 3 (ep302) pursuant to 15A NCAC 02D .0530 and 15A NCAC 02D .1111 / 40 CFR Part 63, Subpart BB.
    - Based on the annual test results dating back to 2009 which have consistently demonstrated a large margin of compliance (all test results less than 10% and most less than 2% of the applicable emission standard), the company requests that this testing requirement be reduced to once every three years.
        - SSCB agrees that the testing frequency for these requirements can be reduced to once every three years provided that the MACT-required CPMS are maintained.
- Specific Condition 2.1.4.B.1.c. requires annual testing for sulfur dioxide (SO_2) emissions from SPA Plants Nos. 1 and 2 (ep331 and ep332) pursuant to 15A NCAC 02D .0501(c).
    - Based on the annual test results dating back to 2009 which have consistently demonstrated a large margin of compliance (all test results less than 39% of the applicable emission standard for SPA No. 1 with most less than 10% and all less than 2% for SPA No. 2), the company requests that this testing requirement be reduced to once every three years.
        - SSCB agrees that the testing frequency for these requirements can be reduced to once every three years.
- Specific Conditions 2.1.4.B.4.h. and 2.1.4.C.4.h. require annual testing for total fluoride emissions from SPA Plant Nos. 1, 2, 3, and 4 (ep330, ep331, and ep332) pursuant to 15A NCAC 02D .1111 / 40 CFR Part 63, Subpart AA.
    - Based on the annual test results dating back to 2009 which have consistently demonstrated a large margin of compliance (outside of one test result for SPA Plant Nos. 3 and 4 in 2018 of 51% of the applicable emission standard, all other test results for all plants were less than 20% of the standard with most less than 5%), the company requests that this testing requirement be reduced to once every three years.
        - SSCB agrees that the testing frequency for these requirements can be reduced to once every three years provided that the MACT-required CPMS are maintained.

- Specific Condition 2.1.4.C.3.c. requires annual testing for SO_2 emissions from SPA Plant Nos. 3 and 4 (ep332) pursuant to 15A NCAC 02D .0530.
    - Based on the annual test results dating back to 2009 which have consistently demonstrated a large margin of compliance (all test results less than 11% and most less than 5% of the applicable emission standard), the company requests that this testing requirement be reduced to once every three years.
        - SSCB agrees that the testing frequency for these requirements can be reduced to once every three years.
- Specific Condition 2.1.5.A.2.c. requires annual testing for SO_2 emissions from the crossflow packed scrubber serving either Phosphoric Acid Train No. 1 or 2 (ep401 or ep404) and from the crossflow packed scrubber serving either Phosphoric Acid Train No. 3 or 4 (ep406 or ep409) pursuant to 15A NCAC 02D .0530.
    - Based on the annual test results dating back to 2009 which have consistently demonstrated a reasonable margin of compliance considering the number of tests performed (all test results less than 59% and most less than 30% of the applicable emission standard), the company requests that this testing requirement be reduced to once every three years.
        - SSCB agrees that the testing frequency for these requirements can be reduced to once every three years.
- Specific Condition 2.1.5.A.4.h. requires annual testing for total fluoride emissions from Phosphoric Acid Train Nos. 1, 2, 3, and 4 (ep401 through ep409) pursuant to 15A NCAC 02D .1111 / 40 CFR Part 63, Subpart AA. Note that the company is only requesting reduced testing frequency for ep401, ep403, ep404 and ep409, because the other emission points either already have reduced testing frequencies built into the air permit or the company does not believe that historical test results for the emission points support reduced testing frequency at this time.
    - Based on the annual test results for Train Nos. 1, 2 and 4 dating back to 2009 which have consistently demonstrated a reasonable margin of compliance considering the number of tests performed (all test results less than 64% and most less than 32% of the applicable emission standard), the company requests that this testing requirement be reduced to once every three years.
        - SSCB agrees that the testing frequency for these requirements can be reduced to once every three years provided that the MACT-required CPMS are maintained.
- Specific Conditions 2.1.6.D.1.c. and 2.1.6.H.1.c. require once every five years testing for total fluorides emissions from Purified Acid Plant No. 2, Trains 3 and 4 chiller (ep503) pursuant to 15A NCAC 02D .0530.
    - Based on five previous tests on this emission source dating back to 2004 which have demonstrated a significant margin of compliance (all test results less than 6% of the applicable emission standard), the company requests that this testing requirement be removed from their air permit due to the high unlikelihood of an exceedance of the applicable emission standard.
        - SSCB agrees that this testing requirement can be removed from the permit.
- Specific Condition 2.1.6.E.1.c. requires once every five years testing for total fluorides emissions from Purified Acid Plant No. 2, Train 3 scrubber (ep504) pursuant to 15A NCAC 02D .0530.
    - Based on four previous tests on this emission source dating back to 2004 which have demonstrated a significant margin of compliance (all test results less than 6% of the applicable emission standard), the company requests that this testing requirement be removed from their air permit due to the high unlikelihood of an exceedance of the

applicable emission standard.
    - SSCB agrees that this testing requirement can be removed from the permit.
- Specific Condition 2.1.6.I.1.c. requires once every five years testing for total fluorides emissions from Purified Acid Plant No. 2, Train 4 scrubber (ep506) pursuant to 15A NCAC 02D .0530.
    - Based on four previous tests on this emission source dating back to 2007 which have demonstrated a significant margin of compliance (all test results less than 4% of the applicable emission standard), the company requests that this testing requirement be removed from their air permit due to the high unlikelihood of an exceedance of the applicable emission standard.
        - SSCB agrees that this testing requirement can be removed from the permit.

PCS Phosphate also proposed "trigger" thresholds for the reduced testing frequencies that would require the facility to resume annual testing on the applicable emission sources if the threshold is ever exceeded for a pollutant in any individual test. The proposed "trigger" threshold of 80% of the applicable standard. SSCB agrees that 80% is a good "trigger" threshold in general to include in the facility's permit to require the facility to resume annual testing.

In summary, SSCB agrees that the large amount of emissions test data collected by PCS Phosphate over the last two decades supports their request for reduced testing frequencies for specific pollutants and emissions points at the Aurora facility as detailed above. We agree with the company's claim that continuing to test these emission sources at the frequencies currently specified in their air permit is impractical and unnecessary due to the large margins of compliance demonstrated by the historical test results. Additionally, the company's use of CPMS as required by various regulations will help ensure continuous compliance with the applicable emission standards. Per a note in revised Table 1 of the company's request, it is recommended that a requirement to continuously monitor the scrubber inlet flow rate be added to the facility's permit for SPA Plants Nos. 1 and 2. Finally, we agree with the company's proposed "trigger" thresholds are reasonable.

If you have any questions, please feel free to contact me or Taylor Fort of my staff.

cc: Emily Supple, Permit Engineer (e-copy)
Rahul Thaker, Permit Engineer (e-copy)
Samir Parekh, SSCB Supervisor (e-copy)
Taylor Fort, SSCB Engineer (e-copy)
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