STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ONGOING DATA REQUIREMENTS
ANNUAL REPORT

ANNUAL REVIEW OF FACILITY EMISSIONS AND REQUEST TO TERMINATE ONGOING DATA REQUIREMENTS FOR NUTRIEN WHITE SPRINGS UNDER EPA'S DATA REQUIREMENTS RULE FOR THE 2010 ONE-HOUR SO_2 NAAQS

July 1, 2020

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1. Background

On August 21, 2015, the U.S. Environmental Protection Agency (EPA) promulgated the "Data Requirements Rule" (DRR) (80 Fed. Reg. 51,052; codified at 40 C.F.R. Part 51, Subpart BB), which requires states to evaluate compliance with the 2010 one-hour sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) in areas surrounding certain large SO_2 sources. Pursuant to the DRR, states could choose to perform area characterizations around the specified sources using either air quality monitoring or air dispersion modeling. The Florida Department of Environmental Protection (Department) opted to characterize all areas of Florida using air dispersion modeling.

Pursuant to the ongoing data requirements of the DRR in 40 CFR 51.1205, the Department must submit an annual report to EPA documenting the SO_2 emissions of sources in areas that EPA designated unclassifiable/attainment based on modeling of actual SO_2 emissions resulting in maximum modeled concentrations below the one-hour SO_2 NAAQS. The four facilities still subject to the ongoing data requirements are:

- Jacksonville Electric Authority's (JEA) Northside Generating Station/St. Johns River Power Park (NGS/SJRPP);
- Nutrien (formerly PotashCorp [PCS]) White Springs Agricultural Chemicals Suwannee River/Swift Creek Complex (Nutrien);
- WestRock CP, LLC's Fernandina Beach Mill (WestRock); and
- Lakeland Electric's C.D. McIntosh Power Plant (McIntosh).

Section 2 of this report documents SO_2 emissions decreases at JEA, WestRock and McIntosh and confirms that the areas around these facilities remain in attainment of the one-hour SO_2 NAAQS.

The DRR states in 40 CFR 51.1205(c) that "[a]ny air agency that demonstrates that an area would meet the 2010 SO_2 NAAQS with allowable emissions is not required pursuant to paragraph (b) of this section to submit future annual reports for the area." **Section 3** of this report summarizes updated modeling demonstrating that with current maximum allowable SO_2 emissions, the area around Nutrien is meeting the 2010 one-hour SO_2 NAAQS. Therefore, pursuant to 40 CFR 51.1205(c), the Department is requesting EPA's approval to terminate the ongoing data requirements under the DRR for the 2010 one-hour SO_2 NAAQS for Nutrien.

2. Annual SO_2 Emissions Review

The Department's DRR modeling demonstrations for JEA, WestRock, and McIntosh, submitted to EPA on January 13, 2017, used actual SO_2 emissions from 2012 to 2014. Emissions for these facilities have substantially decreased in 2016 to 2018 compared to 2012 to 2014 (**Table 1**)[1].

[1] All emissions data is from the facility's CEMS. Hourly CEMS data for 2012 – 2014 were reported directly to the Department for DRR modeling purposes. 2016 – 2018 data are from the facility's Annual Operating Report (AOR) submissions to the Department. Rule 62-210.370, F.A.C., requires that facilities report their annual emissions using CEMS if available. 2019 AOR data is not yet available.

Table 1. Comparison of 2012 – 2014 and 2017 – 2019 SO_2 emissions (tons per year) for DRR facilities requiring annual review.

County	Facility	2012	2013	2014	2012-2014 Average	2017	2018	2019[a]	2017-2019 Average	Percent Change
Duval	JEA	13,835	16,459	20,978	17,091	4,999	2,474	1,917	3,130	-81.7%
Nassau	WestRock (Total)	3,573	3,671	3,797	3,680	2,297	1,741	989	1,676	-54.5%
Nassau	WestRock #4 Recovery Boiler[b]	101	98	103	101	2	25	13	13	-87.1%
Nassau	WestRock #5 Power Boiler[b]	82	68	73	74	47	16	13	25	-66.2%
Nassau	WestRock #5 Recovery Boiler[b]	76	103	113	97	2	54	24	27	-72.2%
Nassau	WestRock #7 Power Boiler[b]	3,314	3,402	3,507	3,408	2,241	1,641	933	1,605	-52.9%
Polk	McIntosh (Total)	5,155	5,793	2,157	4,368	1,459	1,656	848	1,321	-69.8%
Polk	McIntosh Unit 2[c]	1.88	1.34	0.77	1.33	0.34	0.0	0.01	0.12	-91.0%

[a]2019 emissions data are preliminary.
[b]In the DRR modeling for WestRock, only these units were modeled using actual emissions; all other units were modeled using maximum allowable emission rates.
[c]In the DRR modeling for McIntosh, only Unit 2 was modeled using actual emissions; all other units were modeled using maximum allowable emission rates.

In 2014, the Department permitted JEA to reintroduce fly ash into Boilers 1 and 2 at NGS, which acts as an additional SO_2 control, thus reducing emissions. In 2016, the Department incorporated MATS provisions into the facility's Title V permit. In 2018, JEA retired both units at SJRPP, reducing emissions to just those from NGS.

SO_2 emissions decreases at WestRock are primarily due to implementation of controls and limits to comply with the Nassau County Nonattainment Area State Implementation Plan (NAA SIP). In 2015, as part of the Nassau County NAA SIP, the Department issued an air construction permit to WestRock to implement a variety of controls, including improvements to the recovery boilers, installation and operation of a piping system and to transport non-condensable gases for combustion in the No. 7 Power Boiler, and a scrubber system to remove total reduced sulfur from the non-condensable gas stream prior to combustion, decreasing SO_2 emissions. **Table 1** also gives emissions at the unit level for emissions units that were modeled using actual emissions; emissions units not listed were modeled using allowable emission rates.

In 2012, the Department issued an air construction permit to McIntosh to remove petroleum coke as an authorized fuel for Unit 3 in order to reduce SO_2 emissions, and Unit 1 was retired in 2015. Additionally, in 2015, the Department issued an air construction permit to McIntosh to upgrade their wet flue gas desulfurization (FGD) system to reduce SO_2 emissions for compliance with

Mercury and Air Toxics Standards (MATS) provisions. In the original DRR modeling, only Unit 2 was modeled using actual emissions; all other units were modeled using allowable emission rates. **Table 1** shows that the emissions from Unit 2 have decreased, and the unit did not operate at all in 2018; therefore, the modeling in the DRR submittal is still valid.

The decrease in SO_2 emissions at JEA, WestRock, and McIntosh is largely due to implementation of controls and lower permitted SO_2 emission limits; therefore, SO_2 emissions would not be expected to increase back to levels seen in 2012 to 2014. As such, the Department finds the DRR modeling submitted on January 13, 2017 to be conservative and no additional modeling is needed to characterize the air quality for this area. The Department recommends that the areas around JEA, WestRock, and McIntosh retain their unclassifiable/attainment designations. These areas will continue to be subject to the ongoing data requirements under the DRR.

3. Nutrien Maximum Allowable SO_2 Emissions Modeling Demonstration

Nutrien owns and operates White Springs under Title V Permit No. 0470002-125-AV[2] issued by the Department on December 6, 2019. As part of a consent decree[3] with EPA, Nutrien was required to reduce SO_2 emissions and meet more stringent SO_2 emission limits at Sulfuric Acid Plant (SAP) C, D, E and F. Nutrien elected to permanently shut down SAPs C and D in 2014, reducing emissions from these SAPs to zero. On March 31, 2017, the Department issued permit no. 0470002-107-AC[4] (**Appendix A**) to Nutrien to complete upgrades on SAP E and SAP F, which included changing out and augmenting the converter catalyst in the SAPs, allowing them to meet new SO_2 emission limits of 2.6 lb/ton on a 3-hour rolling average (excluding startups and shutdowns) and 2.3 lb/ton on a 365 day rolling average (including startups and shutdowns), as required by the consent decree. Nutrien came into compliance with these limits on January 1, 2018 for SAP F and January 1, 2020 for SAP E. **Appendix B** includes excerpts from the Title V permit relevant to SAP E (EU066) and SAP F (EU067). Also included is page 2 of the Title V permit that states that SAP C (EU021) and SAP D (EU022) are permanently shut down.

The Department has completed a modeling demonstration that accounts for these changes with a maximum allowable SO_2 emission rate scenario for Nutrien effective January 1, 2020. This report summarizes the Department's modeling demonstration, which indicates that the area is in attainment of the 2010 SO_2 NAAQS.

3.1. Model Selection

EPA recommends the use of the American Meteorological Society/Environmental Protection Agency Regulatory Modeling System (AERMOD), including the pre-processing programs

[2] *See* Title V Permit No. 0470002-125-AV, issued by the Florida Department of Environmental Protection on December 6, 2019.
[3] United States of America and Louisiana Department of Environmental Quality v. PCS Nitrogen Fertilizer, L.P., AA Sulfuric, Inc., and White Springs Agricultural Chemicals, Inc., available at: https://www.epa.gov/sites/production/files/2014-11/documents/pcsnitrogenfertilizer-cd.pdf
[4] *See* Air Construction Permit No. 0470002-107-AC, issued by the Florida Department of Environmental Protection on March 31, 2017.

AERMET, AERMINUTE, AERMAP, and AERSURFACE, for all regulatory modeling of inert pollutants in the near field.[5] Accordingly, the Department utilized the latest version of AERMOD (v.19191) using the regulatory default options for characterizing the area around Nutrien.

3.2. Modeled Facilities

Nutrien is the only DRR-applicable facility and only source of SO_2 emissions in Hamilton County. There are, however, some small nearby SO_2 sources in neighboring Suwannee County. Appendix W states, and the Modeling TAD reiterates, that the number of sources to explicitly model should be small except in unusual cases. An analysis of emissions data and spatial proximity was performed for all nearby sources to determine which sources to explicitly include in the modeling demonstration. All sources within 20 km of the primary facility that had 2018 SO_2 emissions of at least 100 tons were automatically included. All other sources within 35 km were then subjected to a widely used screening procedure known as 20d. This method suggests that if a source's annual emissions in tons (Q) is less than its distance from the primary source in kilometers (d) multiplied by 20, then it is unlikely to have a significant concentration gradient in the area of concern. Finally, for all sources not already identified for inclusion, the Department considered emissions data, stack parameters, and spatial proximity (both to other sources and the background monitor), and used professional judgment to determine whether they should be included.

The Department determined that there are no other sources of SO_2 emissions that have the potential to cause a significant concentration gradient in the area of interest (**Figure 1**). All other sources within 35 km of Nutrien emitted less than one ton of SO_2 in 2018 (**Table 2**) and are represented in the added monitored background concentrations discussed in **Section 3.9**.

[5] *See* Appendix W to 40 C.F.R. 51, Section 3.2.

Figure 1: 2018 SO_2 emission sources in and around Hamilton County, Florida.

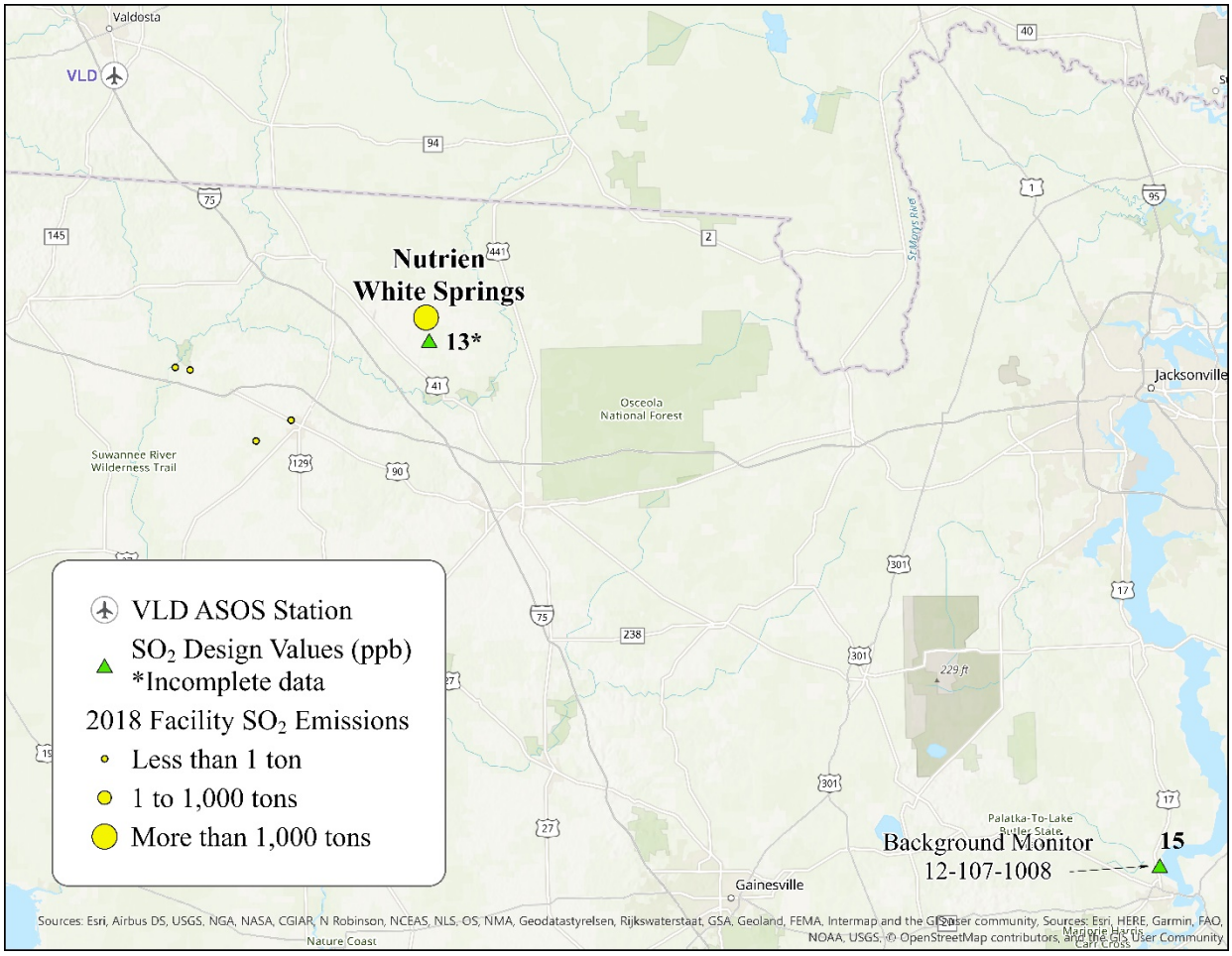


Table 2: 2018 sources of SO_2 emissions within 35 kilometers of Nutrien.

Facility ID	Facility Name	Distance from PCS (km) (d)	20d	2018 SO_2 Emissions (tons) (Q)	Q > 20d
047-0002	Nutrien White Springs	0	0	1,982.11	Yes
121-0007	Pilgrim's Pride Live Oak Feed Mill	21	420	0.02	No
121-0018	Pilgrim's Pride Live Oak Poultry Plant	30	600	0.03	No
121-0468	Klausner Suwannee Mill	27	600	0.17	No
121-0003	Duke Energy Suwannee River Plant	32	640	0.74	No

3.3. Meteorological Input Data

Florida has a relatively dense network of high-quality National Weather Service (NWS) Automated Surface Observing System (ASOS) stations for use in air dispersion modeling demonstrations. Hourly meteorological surface observations for 2016-2018 from the nearest representative NWS ASOS station at Valdosta Regional Airport (VLD) in Valdosta, Georgia were processed with AERMET v.18081. The raw data were retrieved from the National Climatic Data Center's (NCDC) file transfer protocol site in the standard integrated surface hourly data

format (ISHD) along with the TD-6405 ASOS 1-minute wind data. Upper air parameters were derived from twice daily radiosonde observations (RAOB) from the nearest NWS atmospheric sounding location in Tallahassee, Florida (TAE) downloaded from the National Oceanic and Atmospheric Administration's (NOAA) Earth System Research Laboratory (ESRL) website. Missing 12Z soundings were filled with archived modeled soundings from NOAA's Air Resources Laboratory (ARL) website prior to processing in AERMET.

Default options and settings were used when processing AERMET with the exception of the following:

- ASOS1MIN – Include ASOS 1-minute wind data processed by AERMINUTE v.15272
- THRESH_1MIN 0.5 – Minimum wind speed threshold: 0.5 m/s
- METHOD WIND_DIR RANDOM – Wind directions are randomized to correct rounding
- NWS_HGT WIND 10 – Sets ASOS anemometer height to 10 m

EPA has established criteria for the use of meteorological data for modeling purposes that states that meteorological data should be 90% complete on a quarterly basis.[6] The 2016-2018 VLD dataset satisfies this completeness requirement.

3.3.1. Surface Characteristics

AERMET requires information about the surface characteristics of the land surrounding the meteorological station. The Department used the recommended AERMET preprocessing program AERSURFACE v.13016 to extract estimates of the Bowen ratio, surface roughness, and albedo from the 1992 National Land Cover Dataset (NLCD) for Florida. Per EPA guidance, because the Bowen ratio is dependent upon surface moisture and precipitation patterns, each year was classified as wet, dry, or average by comparing the annual precipitation to the 1981-2010 climatological record at the site. The default seasonal categories for each month were changed to reflect the subtropical climate of Hamilton County. All inputs to AERSURFACE are summarized in **Table 3**.

[6] Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, EPA-454/R-99-005, *Meteorological Monitoring Guidance for Regulatory Modeling Applications,* (February 2000).

Table 3: AERSURFACE inputs for 2016-2018 VLD AERMET dataset.

Parameter	Value
Coordinate System	LATLON
Meteorological Station Latitude (Degrees)	30.7830
Meteorological Station Longitude (Degrees)	-83.2770
Horizontal Datum	NAD83
Radius of Study Area for Surface Roughness (km)	1
Number of Sectors	12
Temporal Resolution	Monthly
Continuous Snow Cover for at Least One Month	No
Late Autumn or Winter Without Snow	1,2
Transitional Spring	3,4
Midsummer	5,6,7,8,9
Autumn	10,11,12
Located at an Airport	Yes
Arid Region	No
Average Surface Moisture 2016	Wet
Average Surface Moisture 2017	Wet
Average Surface Moisture 2018	Wet

3.3.2. Site Representativeness

The surface characteristics were also extracted for the area around Nutrien so that a comparison could be done to determine if the meteorological data recorded at VLD are representative of the meteorological conditions in the modeling domain. The resulting average surface characteristics at both sites are similar and are summarized in **Table 4**. Based on this analysis and the aforementioned geographical influences, the VLD meteorological dataset was considered to be representative of the domain for this modeling demonstration.

Table 4: Average surface characteristics from AERSURFACE for Hamilton County.

Location	Albedo	Bowen Ratio	Surface Roughness (z_o)
Valdosta Regional Airport	0.16	0.42	0.240
PCS White Springs	0.15	0.42	0.234

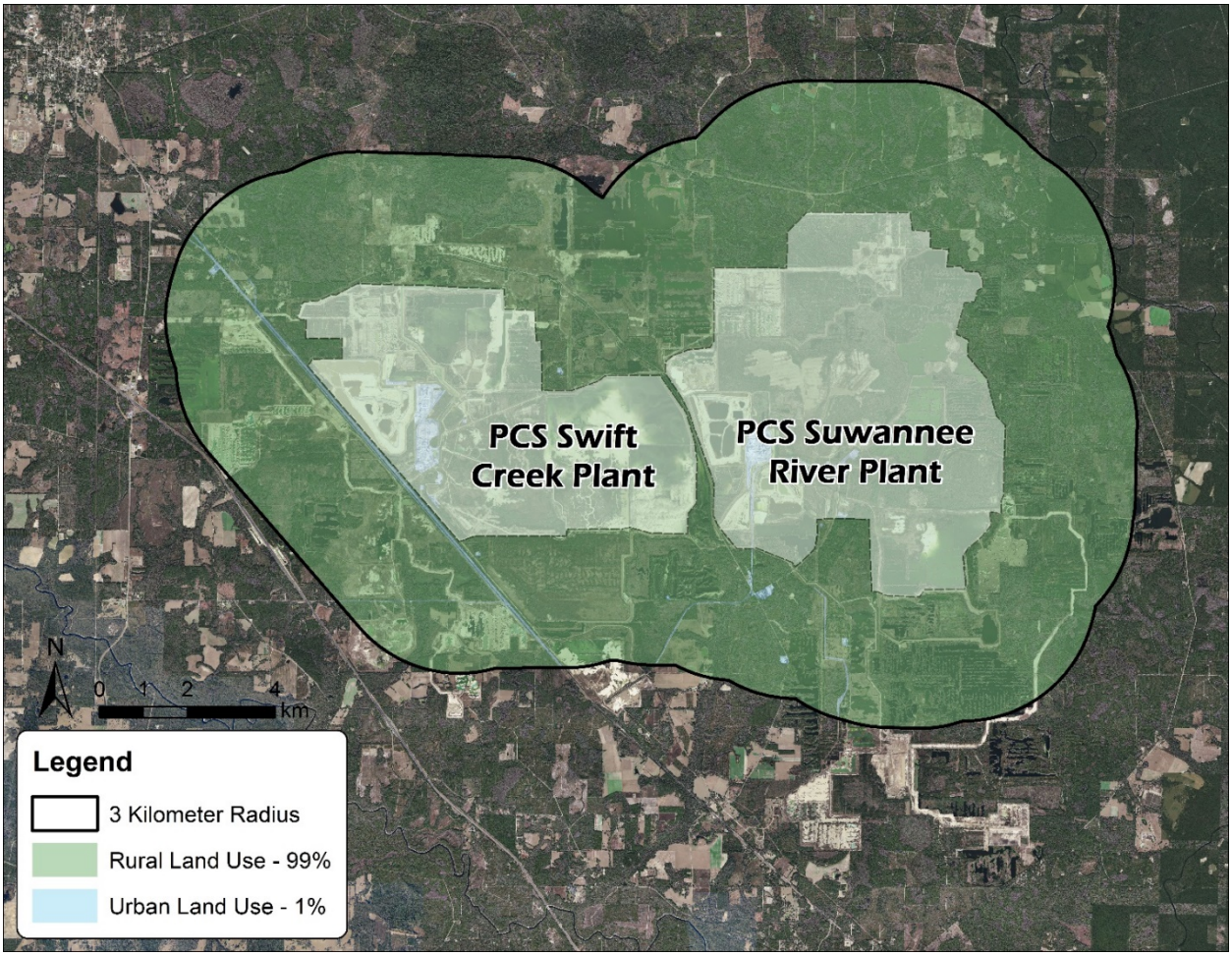
3.4. Rural/Urban Determination

AERMOD contains different dispersion coefficients for rural and urban settings. Appendix W outlines two methods for determining whether the area should be considered rural or urban. The Department chose the land-use classification approach employing Auer's method.[7] Auer's method requires an analysis of the land use within a 3-km radius around a facility to determine whether the majority of the land is classified as rural or urban. If more than fifty percent of the area consists of Auer land-use industrial, commercial, or residential land types, then urban dispersion coefficients are used in the model; otherwise, rural dispersion coefficients are used.

[7] Auer, Jr., A.H. "Correlation of Land Use and Cover with Meteorological Anomalies," Journal of Applied Meteorology, 17:636-643 (1978).

As shown in **Figure 2** below, rural land use constitutes a majority (99 percent) of the 3-km radius around Nutrien.

Figure 2: Land use classification around Nutrien in Hamilton County.



3.5. Terrain Elevations

Terrain elevations were determined using the AERMOD terrain preprocessor AERMAP v.18081. AERMAP extracted elevations and hill heights for all sources, buildings, and receptors from the United States Geological Survey (USGS) National Elevation Dataset (NED) with a 10-meter horizontal resolution.

3.6. Receptor Placement

According to EPA's March 2011 Memo *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard* and reiterated in the Modeling TAD, it is expected that the distance from the source to the area of the maximum ground-level one-hour impact of SO_2 will be approximately 10 times the source

release height.[8] Based on this guidance, the Department developed a uniform method for receptor grid placement for all DRR sources in Florida. As a conservative approach, a dense grid of receptors was placed from the primary facility's tallest stack (if multiple stacks are the tallest, the most centrally located was chosen) to the greater of 20 times the tallest stack height at the primary facility or 2,500 meters. Receptor density then decreased in 2,500-meter intervals. Receptors located within Nutrien's fence line were removed and receptors were placed with 50-meter spacing along the fence line.

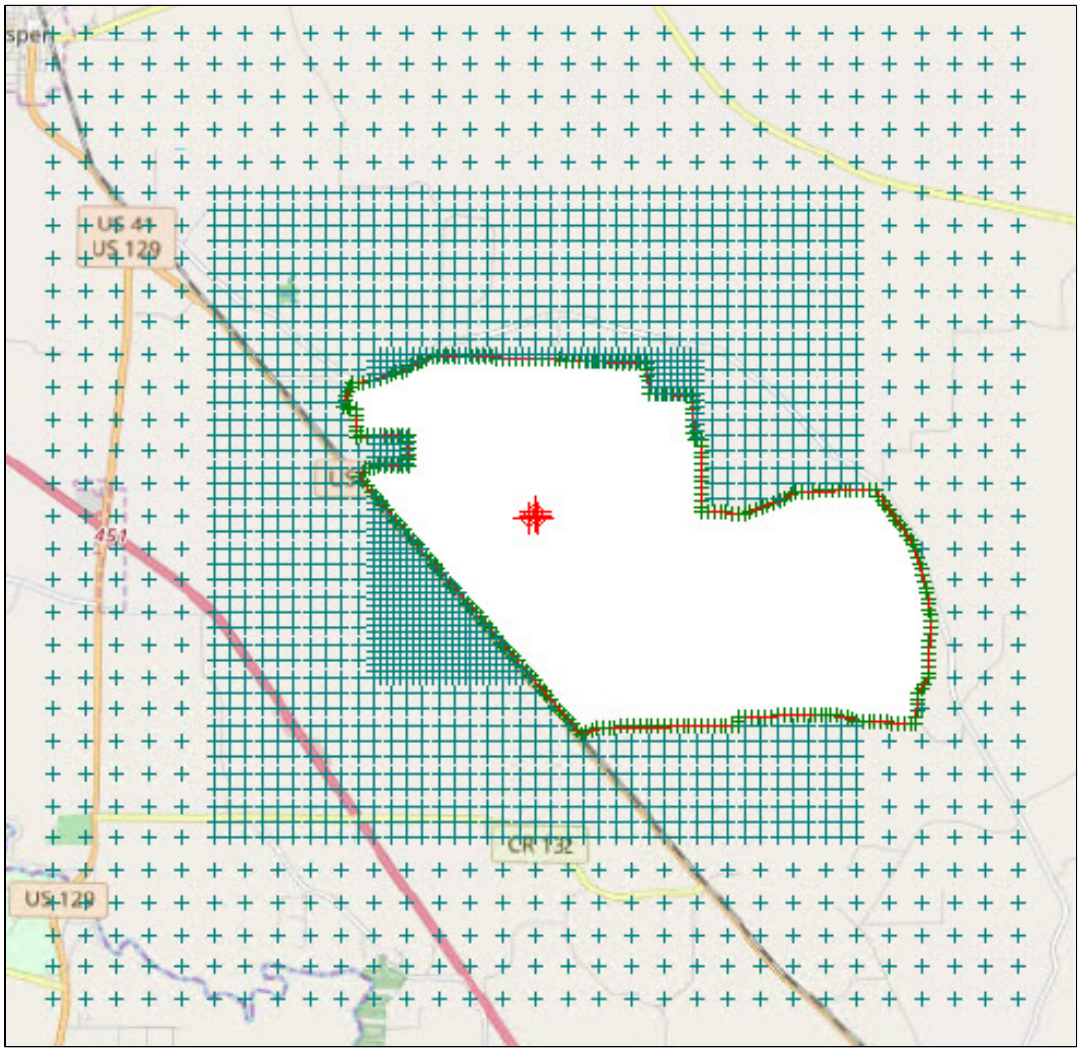
The Modeling TAD describes a process for removing receptors placed in areas that it would not be feasible to place an actual monitor, such as bodies of water, that is unique to the DRR. The Department chose not to employ this process. The receptor grid used in the modeling demonstration is described below in **Table 5** and **Figure 3**.

Table 5: Modeling demonstration receptor grid description.

Receptor Grid Parameter	Value/Description
Description of Unit at Grid Center	Sulfuric Acid Plant E
Unit UTM Zone	17N
Unit UTM Easting (m)	321,089.70
Unit UTM Northing (m)	3,370,331.20
Actual Stack Height (m)	59.50
Expected Distance to Max Concentration (m)	595
20 Times Stack Height (m)	1,190
100 m Receptor Spacing - Extent from the Origin (m)	2,500
250 m Receptor Spacing - Extent from the Origin (m)	5,000
500 m Receptor Spacing - Extent from the Origin (m)	7,500
Plant Boundary Receptor Spacing (m)	50
Total Receptors	4,662

[8] Applicability of Appendix W Modeling Guidance for the 1-hr NO_2 National Ambient Air Quality Standard. Tyler Fox Memorandum dated June 28, 2010, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency Research Triangle Park, North Carolina 27711, available at: http://www.epa.gov/ttn/scram/ClarificationMemo_AppendixW_Hourly-NO2-NAAQS_FINAL_06-28-2010.pdf.

Figure 3: Receptor grid placement for the modeling demonstration.



3.7. Building Downwash

Building downwash effects on emitted plumes were simulated using the Plume Rise Model Enhancements (PRIME) algorithm v.04274 in AERMOD. PRIME predicts concentrations in both the near and far wake regions, with the plume mass captured by the near wake treated separately from the uncaptured primary plume, and reemitted to the far wake as a volume source. Seventeen significant structures at the Swift Creek and Suwannee River Plants were included in the downwash analysis. Direction-specific downwash parameters for all stacks at Nutrien were calculated and input to AERMOD by EPA's Building Profile Input Program for PRIME (BPIPPRM).

3.8. Source Parameters and Emissions Data

The Department's modeling demonstration accounts for the SAP shutdowns, upgrades, and reduced limits required by the consent decree with EPA and represents a maximum allowable

emission rate scenario for Nutrien effective January 1, 2020, as summarized in **Table 6**. The emission rate for SAP E and SAP F is the maximum potential to emit based on a maximum permitted emission rate of 2.3 lbs of SO_2 per ton of H_2SO_4 based on a 365-day rolling average (including startup and shutdown periods) as established in the Air Construction Permit 0470002-107-AC and a production rate not to exceed 2,500 tons per day (104.17 tons per hour) of H_2SO_4 per Title V permit 047002-087-AV. The No. 2 (Z) DAP/MAP is the last remaining unit at the Suwannee River Plant and was modeled at its maximum allowable emission limit, although emissions at this unit have decreased to 0.02 tons per year SO_2 for the last two years. All other units that were included in the original modeling demonstration that are not listed below have been shut down. Any short-term variability in emissions has already been accounted for using the equivalency ratio as discussed below.

Table 6: Nutrien units maximum permitted modeling parameters.

Unit Description	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)	SO_2 Emission Rate (lb/hr)
SAP E	59.50	2.59	10.54	342.0	354.56
SAP F	59.50	2.59	10.54	342.0	381.23
Aux Boiler E	15.24	1.62	15.42	466.48	0.15
Molten Sulfur Handling System	7.62	0.18	0.64	366.48	2.4
No. 2 (Z) DAP/MAP	42.67	2.44	9.45	322.04	11.8

3.8.1. Modeled Emission Rate Averaging Times

If a compliance averaging time for an emission limit is longer than the averaging time for the applicable NAAQS (here, one hour), EPA guidance provides a method of calculating an "equivalent" longer-term emission limit where appropriate.[9] The adjustment method suggested by EPA is to scale the longer-term average emission limit by the ratio of each source's historic 99th percentile one-hour average emission rate to its 99th percentile longer-term average emission rate. The premise of this method is that a longer-term emission limit allows a higher level of emissions variability than the short-term limit. Thus, a larger short-term limit needs to be input to the model in order to account for this variability. The SO_2 emission limits on both SAP E and SAP F are based on 365-day rolling averaging periods, so this adjustment process was used. The analysis was performed using CEMS data from 2012-2014 and is summarized in **Table 7.** There were no physical changes or changes to method of operation for either SAP with the new permitted limit; therefore, the new permit limit is not expected to affect variability in the emissions distributions from these units.

[9] Guidance for 1-Hour SO_2 Nonattainment Area SIP Submissions, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, available at: http://www.epa.gov/ttn/oarpg/t1pgm.html

Table 7: Emissions variability analysis and equivalent emission rate calculations.

Unit Description	99th Percentile Rate (lb/hr)		Ratio 1-hr/365-day	Permitted Limit (lb/hr)	Equivalent Limit (lb/hr)
	1-hr	365-day			
SAP E	375.25	254.29	0.678	239.58	353.56
SAP F	405.94	255.08	0.628	239.58	381.23

3.9. Background Concentrations

A set of background concentrations to account for all SO_2 sources not explicitly modeled was developed for each hour of the day by season from local monitoring data.[10]

In the original DRR modeling, the Department used monitoring data from monitoring station No. 12-047-0015, which is a representative monitor located 9 km southeast of Nutrien. However, this monitor is currently missing data for 2016 and therefore only has two years of recent data available (2017-2018). Although monitor 12-107-1008 is located farther from Nutrien, this monitor is still representative of the area around Nutrien and has more conservative SO_2 measurements than monitor 12-047-0015. Monitor 12-107-1008 is in the Palatka area, which is more representative of the area around Nutrien compared to the monitors of a similar distance in the more urban Jacksonville area. Therefore, in order to have three full years of monitoring data for the 2016-2018 period, the Department chose to use monitoring station No. 12-107-1008 to develop background concentrations. The data used were obtained from the Florida Air Monitoring and Assessment System (FAMAS) for the period of January 2016 to December 2018. The Department included all measurements in developing the background concentrations.

The 99th percentile (2nd high) concentration for each hour by season was averaged across the three years and the resulting array was input to AERMOD with the BACKGRND SEASHR keyword. The final set of background concentrations is summarized in **Table 8**.

[10] *See* Modeling TAD, Section 8.1

Table 8: 2016-2018 SO_2 background concentrations (ppb) by hour-of-day by season for the modeling demonstration.

Hour	Winter	Spring	Summer	Autumn	Hour	Winter	Spring	Summer	Autumn
0:00	6.4	2.9	2.6	2.15	12:00	9.05	5.5	6.8	9.1
1:00	8.65	3	3.05	2.05	13:00	7.1	5	3.8	7.85
2:00	8.55	3.2	3.15	2.2	14:00	5.3	6.35	2.7	10.1
3:00	9.25	3.6	3.1	1.7	15:00	5	3.4	2.65	7.1
4:00	9.7	3.25	3.45	2.3	16:00	7.5	4.15	2.6	4.9
5:00	9.4	2.7	3.6	2.3	17:00	4.9	3	2.95	3.35
6:00	9.05	2.7	3.5	2.35	18:00	4.65	2.7	2.85	2.9
7:00	11.1	2.9	2.9	2.35	19:00	7	3	3.1	2.65
8:00	13.15	2.7	2.7	1.75	20:00	6.25	2.3	2.55	2.55
9:00	10.55	2.65	3.3	5.15	21:00	6.55	2.35	2.55	2.55
10:00	9.3	4.55	3.7	5.65	22:00	6.9	2.55	2.55	2.25
11:00	8.85	4.55	4.6	11.8	23:00	6	3.2	2.7	2.25

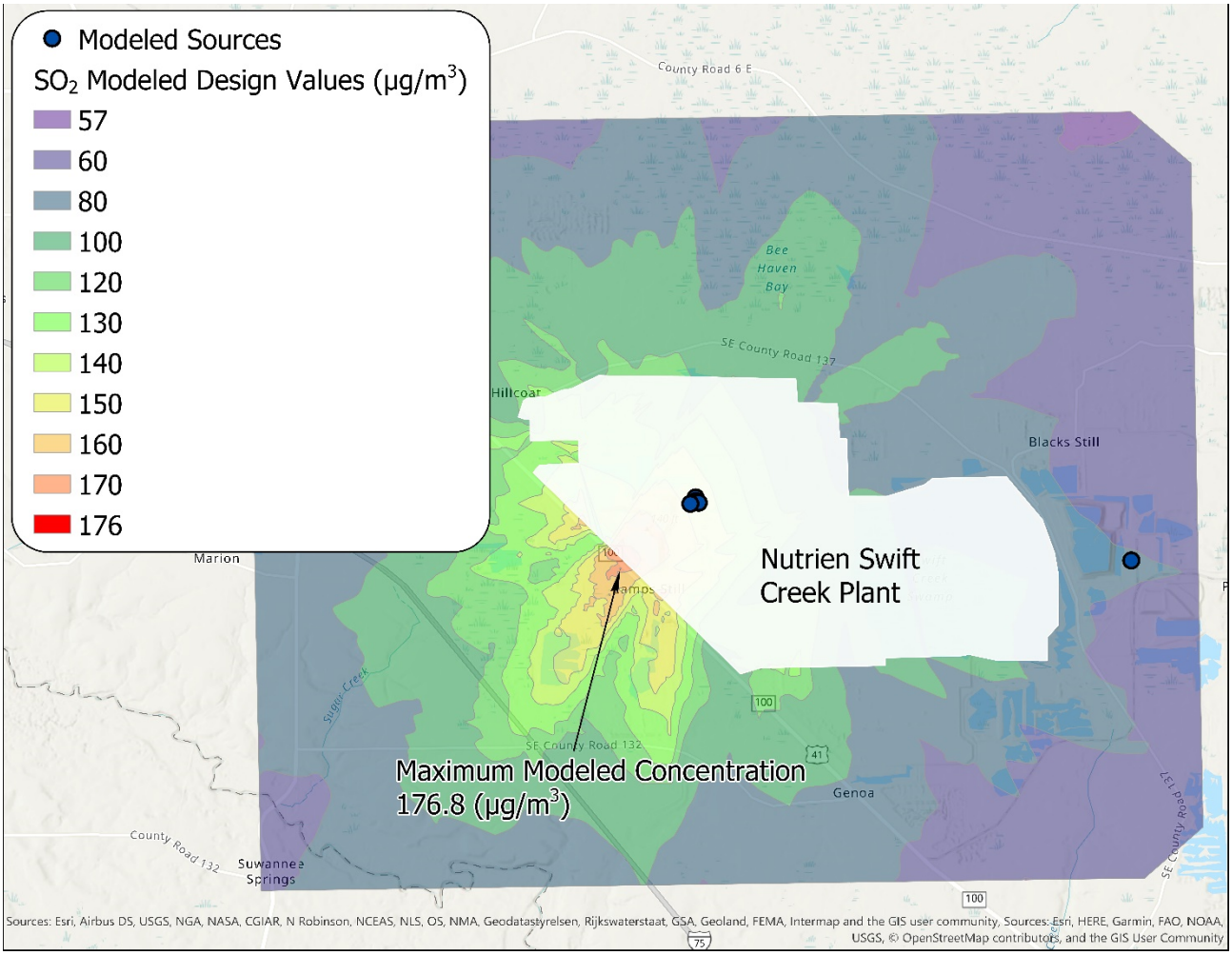
3.10. Modeling Summary and Results

The results of the maximum allowable SO_2 emissions modeling demonstration are summarized in and **Figure 4** and indicate that all areas around Nutrien are in attainment of the one-hour SO_2 NAAQS. As this modeling demonstration uses maximum allowable emission rates, the Department is no longer required to submit annual reports for this facility and requests EPA's approval to terminate the ongoing data requirements under the DRR for Nutrien.

Table 9: Maximum modeled SO_2 design value for Nutrien's consent decree emission limits, effective January 1, 2020.

UTM 17N Easting (m)	UTM 17N Northing (m)	Max Modeled Design Value ($\mu g/m^3$)			1-Hour SO_2 NAAQS	Percent of NAAQS
		Nutrien	Background	Total		
319,789.69	3,369,031.25	164.6	12.2	176.8	196.4	90.0%

Figure 4: Modeled SO_2 design values in the modeling demonstration.



Appendix A – Nutrien White Springs Air Construction Permit (0470002-107-AC)

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
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Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Ryan E. Matthews
Interim Secretary

PERMITTEE

Suwannee River/Swift Creek Complex
White Springs Agricultural Chemicals, Inc.
dba PCS Phosphate, White Springs
P. O. Box 300
White Springs, Florida 32096

Authorized Representative:
William L. Donohue, General Manager

Permit No. 0470002-107-AC
Permit Expires: December 31, 2020
Suwannee River/Swift Creek Complex
Sulfur Dioxide Emission Reduction Project
Sulfuric Acid Plants E and F
Hamilton County

PROJECT

This is the final air construction permit that authorizes a Sulfur Dioxide Emission Reduction Project at the Suwannee River/Swift Creek Complex. The project involves work, such as catalyst change and augmentation, on Sulfuric Acid Plants (SAPS) E and F. The Suwannee River/Swift Creek Complex is an existing phosphate fertilizer manufacturer categorized under Standard Industrial Classification Number (No.) 2874. This existing facility is in Hamilton county at 15843 SE 78th Street, White Springs, Florida. The UTM Coordinates are: Zone 17, 328.3 km East and 3368.8 km North; and, Latitude: 30° 26' 27" North and Longitude: 82° 47' 16" West.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix CF of Section 4 of this permit

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction requirements for major new source review in Chapter 62-212, F.A.C.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

David Lyle Read, P.E.
2017.03.31 08:18:42 -04'00'

For:
Syed Arif, P.E., Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

SA/dlr

www.dep.state.fl.us

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this final air permit package (including the Final Determination and Final Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the following persons.

William L. Donohue, General Manager- PCS Phosphate, White Springs (bdonohue@pcsphosphate.com)
Pradeep Raval, Koogler and Associates (praval@kooglerassociates.com)
John Koogler, Ph.D., P.E. -Koogler and Associates (jkoogler@kooglerassociates.com)
David Still - PCS Phosphate, White Springs (DAStill@potashcorp.com)
EPA Region 4 NSR/PSD: NSRsubmittals@epa.gov
Ms. Julie Hudson., Northeast District: Julie.Hudson@dep.state.fl.us
Ms. Lynn Scearce, DEP OPC: lynn.scearce@dep.state.fl.us

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Lynn Scearce

2017.03.31 08:36:10 -04'00'

FACILITY DESCRIPTION

This existing facility processes phosphate rock to produce several products at the Suwannee River/Swift Creek Complex (two plants). The facility consists of two phosphoric acid plants, one monocal/dical process, two monoammonium/diammonium phosphate (MAP/DAP) plants, one Storage and Shipping building, one screening/shipping building, two sulfuric acid (SAP) plants, two phosphoric acid filters, three superphosphoric acid plants, one green superphosphoric plant, and one acid clarification plant. The facility also has storage silos associated with the Swift Creek Mine. The emission units affected by this permitting action is highlighted in yellow.

LIST OF EMISSION UNITS.

Sub-section	E.U. ID No.	Brief Description
A.	004	"X"-Train (Monocal/Dical process)
B.	008	"Y" Train-#1 MAP/DAP Plant
C.	010	#1 Storage and Shipping Building
D.	015	Granular Product Shipping and Screening Facility
E.	020	"B" Phosphoric Acid Plant
F.	032	"Z"-Train #2 MAP/ DAP
G.	034	South Phosphoric Acid Filter
H.	035	North Phosphoric Acid Filter
I.	036	"B" Superphosphoric Acid Plant
J.	039	"C" Auxiliary Boiler
K.	040	"D" Auxiliary Boiler
L.	054	Molten Sulfur System
M.	061	Green Superphosphoric Plant
N.	066	"E" Sulfuric Acid Plant
O.	067	"F" Sulfuric Acid Plant
P.	068	"E" Auxiliary Boiler
Q.	069	"D" Phosphoric Acid Plant
R.	070	"C" and "D" Superphosphoric Acid Plants
S.	071	Acid Clarification Plant
T.	072	Molten Sulfur System for "E" & "F" Sulfuric Acid Plants
U. V. W. X. Y.	075 076 077 080 081, 082	Relocatable Concrete Batch Plant 13 Emergency Engines Emergency Rental Boiler (Two) 4.25 MMBtu/hr Boilers Gypsum Dewatering Stack, and Cooling Ponds

PROPOSED PROJECT

The purpose of this project is to authorize the changing and augmentation of the converter catalyst along with other work for SAPs E and F in forthcoming scheduled turnarounds. In addition, new SO_2 emission limits will be established for the two SAPs. These new SO_2 emission limits are the result of a Federal Consent Decree No. 14-707-BAJ-SCR entered between White Springs Agricultural Chemicals, Inc. dba PCS Phosphate, White Springs and the Environmental Protection Agency (EPA). To meet the new emission standards and maintain currently permitted operating rates, some process and equipment changes will also be required in each of the two SAPs.

FACILITY REGULATORY CLASSIFICATION

- The existing facility is a major source of HAP.
- The existing facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The existing facility is a major stationary source in accordance with Rule 62-212.400 (PSD), F.A.C.

- This facility does not operate units subject to the acid rain provisions of the Clean Air Act (CAA)
- The facility operates units that are subject to the New Source Performance Standards (NSPS) at 40 Code of Federal Regulations, Part 60 (40 CFR 60), and the National Emissions Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance, Division of Air Resource Management, Florida Department of Environmental Protection (Department). The mailing address for the Office of Permitting and Compliance is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Compliance Authority, the Department's Southwest District (SWD). The Compliance Authority's mailing address is:

   Florida Department of Environmental Protection
   Northeast District Office
   Compliance Assurance
   8800 Baymeadows Way West, Suite 100
   Jacksonville, Florida 32256
   Telephone: 904/256-1700
   Fax: 904/256-1590

3. Appendices: The following Appendices are attached as a part of this permit and the permittee must comply with the requirements of the appendices:
   a. Appendix A. Citation Formats and Glossary of Common Terms;
   b. Appendix B. General Conditions;
   c. Appendix C. Common Conditions;
   d. Appendix D. Common Testing Requirements;
   e. Appendix E. Applicable Requirements of Federal Consent Decree No. 14-707-BAJ-SCR; and
   f. Appendix F. CEMS Plan for SO_2 Emissions.

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Title V Permit: This permit authorizes specific modifications and new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. Title V operation permits are required for regular operation of the permitted emissions units. The permittees shall apply for Title V operation permits at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V operation permit, the applicants shall submit the appropriate application forms, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to each Compliance Authority. [Rules 62-4.030, 62-4.050 and Chapter 62-213, F.A.C.]

   {Permitting Note: Construction authorized by this permit will be completed in phases. Worked will first be completed on SAP F in the 2017 maintenance turnaround. When the work on SAP F is completed, the

permittee shall apply for a Title V revision per ***Specific Condition 7*** *of this section no later than 180 days after completing the required work and commencing operation. When the work on SAP E is completed in the 2019 maintenance turnaround, the permittee shall again apply for a Title V revision per* ***Specific Condition 7*** *of this section no later than 180 days after completing the required work and commencing operation.}*

8. Objectionable Odors Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 62-296.320(2), F.A.C.]

   {Permitting Note: An objectionable odor is defined in Rule 62-210.200(Definitions), F.A.C., as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance.}

9. Unconfined Emissions of Particulate Matter: No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter. General reasonable precautions include the following: a. Paving and maintenance of roads, parking areas and yards; b. Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing; c. Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities; d. Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent re-entrainment, and from buildings or work areas to prevent particulates from becoming airborne; e. Landscaping or planting of vegetation; f. Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter; g. Confining abrasive blasting where possible; and h. Enclosure or covering of conveyor systems.
   [Rule 62-296.320(4)(c), F.A.C.]

PREVIOUS APPLICABLE REQUIREMENTS

10. Effect on Other Permits: The conditions of this permit supplement and or replace all previously issued air construction and operation permits for these emissions unit. Unless otherwise specified, these conditions are in addition to all other applicable permit conditions, rules and regulations. Regarding the SO_2 emission limits associated with these emission units, the phased SO_2 emissions limits in the permit upon date of compliance (see **Specific Condition 4** of subsection 3.A) will supersede the SO_2 emissions limits stated in the previously issued active construction permits. The potential equipment changes to coolers (see **Specific Condition 2.b** of subsection 3.A) authorized by the by this permit project involves equipment previously identified in active construction permits (Permit No. 0470002-065-AC, extended in 094-AC, affects "F" SAP coolers and Permit No. 0470002-096-AC, extended in 101-AC, affects "E" and "F" SAPs coolers).

    [Rule 62-4.070(1) & (3), Reasonable Assurance, F.A.C.]

SECTION 3. EMISSION UNIT SPECIFIC CONDITIONS

This subsection of the permit addresses the following emission units:

EU No.	Brief Description
066	"E" Sulfuric Acid Plant
067	"F" Sulfuric Acid Plant

Sulfuric Acid Plants E and F utilize a double absorption process that produces sulfuric acid and controls sulfur dioxide (SO_2) emissions. Both emissions units use a Brinks mist eliminator to control sulfuric acid mist (SAM).

{Permitting Note: This emissions unit is regulated under NSPS - 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid, adopted and incorporated by reference in Rule 62-204.800(8)(b)12., F.A.C.; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD): Permit No. PSD-FL-082; and Rule 296.402, F.A.C., Sulfuric Acid Plants.}

{Permitting Note: The work authorized to be done on SAPs E and F authorized by the permit, along with the imposition of new SO_2 emission limits on the SAPs are the result of Federal Consent Decree, No. 14-707-BAJ-SCR entered between White Springs Agricultural Chemicals, Inc. dba PCS Phosphate, White Springs and the Environmental Protection Agency (EPA). In addition, the Federal Consent Decree requires a CEMS Plan for SO_2 Emissions that is given in Appendix F. Portions of the Federal Consent Decree applicable to SAPs E and F SAPs are given in Appendix E.}

Federal Consent Decree, No. 14-707-BAJ-SCR

1. Federal Consent Decree (CD): The permittee shall follow all applicable terms and conditions contained in the CD as they relate to SAPs E and F. The portions of the CD applicable to SAPs E and F are given in Appendix E of this permit. [Application No. 0470002-107-AC]

Authorized Physical Changes

2. SAPs E and F: In accordance with the work schedule given in **Specific Condition 3** of this subsection, the following work shall be accomplished on SAPs E and F. The permitted capacity of each SAP after the change/augmentation of the converter catalyst and other work authorized by this permit shall remain unchanged and no emission limits shall be increased. Within 45 days of commencing operation following the turnaround (including catalyst installation and arrangement for each SAP), the permittee shall provide the following information to the Division and the Compliance Authority: the type of catalyst; the amount of catalyst and the catalyst arrangement within the convertor.
   a. *Catalyst.* The permittee is authorized to change out and augment the converter catalyst as well as a change the type of catalyst in the SAPs. In addition, minor changes to the converter to include, but are not limited to, modified inlet nozzle diffusers are authorized.
   b. *Acid Coolers.* The permittee is authorized, as needed, change out the acid cooler to allow operating at higher temperatures and with greater cooling capacity. The coolers to be replaced include, but are not limited to, the existing drying and interpass coolers. Minor changes to the piping, pumps and foundations are also be authorized.
   c. *Acid Tower.* The permittee is authorized, as needed, to do maintenance and/or replacement the acid tower and interpass mist eliminators.
   d. *SO_2 Monitoring System.* The permittee shall install a dual range SO_2 monitoring system on each SAP.
   e. *Flow Meters.* If needed, the permittee is authorized to install, maintain and/or replace the existing product flow meters.

   [Rules 62-4.070(1) and (3) and 62-4.080, F.A.C.; and Application No. 0470002-107-AC]

3. Work Schedule: The permittee shall conduct the required work in accordance with the following schedule, which is based on the facility's planned turnaround.

Turnaround Date	SAP Number, EU No.	Modification
Year 2017	SAP No. F, EU 067	See **Specific Condition 2**
Year 2019	SAP No. E, EU 066	See **Specific Condition 2**

[Application No. 0470002-107-AC]

New Emission Limits

4. SO_2 Emission Limits: The new SO_2 emission limits along with the required compliance date required by the CD for each SAP are given below:

SAP	Emission Limit	CD Compliance Date
Phase 1 – SAP F	2.6 lb/ton, 3-hr rolling average [1]	January 1, 2018
Phase 1 – SAP F	2.3 lb/ton, 365 day rolling average [2]	January 1, 2018
Phase 2 – SAP E	2.6 lb/ton, 3-hr rolling average [1]	January 1, 2020
Phase 2 – SAP E	2.3 lb/ton, 365 day rolling average [2]	January 1, 2020

1. Not including startup and shutdown periods.
2. Including startup and shutdown periods.

[Application No. 0470002-107-AC]

CEMS Plan for SO_2 Emissions

5. CEMS Plan: The permittee shall follow all applicable terms and conditions contained in the CEMS Plan for SO_2 Emissions as they relate to SAPs E and F. The CEMS Plan for SO_2 Emissions is given in Appendix F of this permit. [Application No. 0470002-107-AC]

Notifications

6. Work Status: The permittee shall notify the Compliance Authority within 5 business days prior to starting the catalyst replacement/augmentation and other authorized work on each SAP. The permittee shall notify the Compliance Authority within 5 business days after the turnaround (including catalyst installation and arrangement for each SAP) is completed. [Rules 62-4.070(1) and (3) and 62-4.080, F.A.C.; and Application No. 0470002-107-AC]

White Springs Agricultural Chemicals, Inc.
d.b.a. PCS Phosphate, White Springs
Suwannee River/Swift Creek Complex

Facility ID No.: 0470002
Hamilton County

Title V Air Operation Permit Revision
Permit No. 0470002-125-AV
(Revision of Title V Air Operation Permit No. 0470002-120-AV)

Permitting Authority:
State of Florida
Department of Environmental Protection
Division of Air Resource Management
Office of Permitting and Compliance
2600 Blair Stone Road
Mail Station #5505
Tallahassee, Florida 32399-2400
Telephone: 850/717-9000
Fax: 850/717-9097
Email: DARM_Permitting@dep.state.fl.us

Compliance Authority:
State of Florida
Department of Environmental Protection
Northeast District
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256
Telephone: 904/256-1700
Fax: 904/256-1590

FLORIDA DEPARTMENT OF Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

PERMITTEE:
White Springs Agricultural Chemicals, Inc.
d.b.a. PCS Phosphate, White Springs
15843 SE 78th Street
White Springs, Florida 32096

Permit No. 0470002-125-AV
Suwannee River/Swift Creek Complex
Facility ID No. 0470002
Title V Air Operation Permit Revision

The purpose of this permit revision is to incorporate the terms and conditions of Permit No. 0470002-119-AC (extended by Project No. 0470002-123-AC) as they pertain to changes to the existing Emissions Unit Number (EU No.) 008 "Y" Train (#1 MAP/DAP Plant). The existing Suwannee River/Swift Creek Complex is located in Hamilton County at 15843 SE 78th Street, White Springs, Florida. UTM Coordinates are: Zone 17, 328.3 km East and 3368.8 km North; and, Latitude: 30° 26' 27" North and Longitude: 82° 47' 16" West.

The Title V air operation permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-213. The above named permittee is hereby authorized to operate the facility in accordance with the terms and conditions of this permit.

0470002-125-AV Effective Date: **December 6, 2019**
0470002-120-AV Effective Date: **July 26, 2018**
0470002-112-AV Effective Date: **April 24, 2018**
0470002-110-AV Effective Date: **August 29, 2017**
Renewal Application Due Date: **August 29, 2021**
Expiration Date: **April 11, 2022**

David Lyle Read, P.E.
Digitally signed by David Read
Date: 2019.12.06 08:25:22 -05'00'

For:
Syed Arif, P.E., Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

SA/dlr/sms

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SECTION I. FACILITY INFORMATION.

Subsection A. Facility Description.

This facility processes phosphate rock to produce several products at the Suwannee River/Swift Creek Complex (two plants). The facility consists of two phosphoric acid plants, one monocal/dical process, two monoammonium/diammonium phosphate (MAP/DAP) plants, one Storage and Shipping building, one screening/shipping building, two sulfuric acid plants, two phosphoric acid filters, three superphosphoric acid plants, one green superphosphoric plant, and one acid clarification plant. The facility also has storage silos associated with the Swift Creek Mine.

Subsection B. Summary of Emissions Units.

Sub-section	E.U. ID No.	Brief Description
A.	004	"X"-Train (Monocal/Dical process)
B.	008	"Y" Train-#1 MAP/DAP Plant
C.	010	#1 Storage and Shipping Building
D.	015	Granular Product Shipping and Screening Facility
E.	020	"B" Phosphoric Acid Plant
F.	032	"Z"-Train #2 MAP/ DAP
G.	034	South Phosphoric Acid Filter
H.	035	North Phosphoric Acid Filter
I.	036	"B" Superphosphoric Acid Plant
J.	039	"C" Auxiliary Boiler
K.	040	"D" Auxiliary Boiler
L.	054	Molten Sulfur System
M.	061	Green Superphosphoric Plant
N.	066	"E" Sulfuric Acid Plant
O.	067	"F" Sulfuric Acid Plant
P.	069	"D" Phosphoric Acid Plant
Q.	070	"C" and "D" Superphosphoric Acid Plants
R.	071	Acid Clarification Plant
S.	072	Molten Sulfur System for "E" & "F" Sulfuric Acid Plants
T.	075	Relocatable Concrete Batch Plant
U.	076	13 Emergency Engines
V.	077	Emergency Rental Boiler
W.	079	Natural Gas 230 MMBtu/ hour Auxiliary Boiler
X.	080	(Two) 4.25 MMBtu/hr Boilers
Y	081, 082	Gypsum Dewatering Stack, and Cooling Ponds
Z.	083	50 MMBtu/hour Boiler

Permitting Note: The following emissions units are permanently shut-down: EU001 (#2 Phosphate Rock Grinder); EU003 "A" Defluorinated Phosphate (DFP) Plant; EU021 ("C" Sulfuric Acid Plant); EU006 (SRM silos), EU009 (SRM East Dryer), EU013 (SRM Rock Grinder), EU016 (#1 SRCC Phosphate Rock Grinder, EU017 (SRM West Rock Dryer); EU022 ("D" Sulfuric Acid Plant); EU038 ("B" Defluorinated Phosphate (DFP) Plant);EU044 (Defluorinated Phosphate (DFP) Coolers); EU062 (Defluorinated Phosphate (DFP) Product Silos); EU064 (Swift Creek Mine Rock Dryer); and EU065 (Swift Creek Mine Silos); EU068 ("E" Auxiliary Boiler).

Also, included in this permit are miscellaneous insignificant emissions units and/or activities (see Appendix I, List of Insignificant Emissions Units and/or Activities).

Table of Contents

Subsection N. This section addresses the following emissions unit(s).

E.U. ID No.	Brief Description
066	"E" Sulfuric Acid Plant

"E" Sulfuric Acid Plant is a double absorption process that produces sulfuric acid and controls sulfur dioxide (SO_2) emissions. The emissions unit uses a Brinks mist eliminator to control sulfuric acid mist (SAM). CAM does not apply for sulfur dioxide for this emissions unit. The Drying Tower is an all-alloy tower, and this unit has a single Heat Exchanger (as per the changes in Permit No. 0470002-065-AC).

{Permitting note(s): This emissions unit is regulated under NSPS - 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid, adopted and incorporated by reference in Rule 62-204.800(8)(b)12., F.A.C.; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD): Permit No. PSD-FL-082; and Rule 296.402, F.A.C., Sulfuric Acid Plants.}

The following specific conditions apply to the emissions unit(s) listed above:

ESSENTIAL POTENTIAL TO EMIT (PTE) PARAMETERS

N.1. **Permitted Capacity**. The production rate shall not exceed 2500 TPD, expressed as 100 percent H_2SO_4 or 104.20 TPH.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; Construction Permit No. AC24-56211, PSD-FL-082]

N.2. **Hours of Operation**. This emissions unit is allowed to operate continuously 8760 hours/year (8784 in any Leap Year).

[Permit No. 0470005-004-AO and Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.]

EMISSION LIMITATIONS AND STANDARDS

{Permitting note: Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

{Permitting Note: Unless otherwise specified, the averaging times for these conditions are based on the specified averaging time of the applicable test method.}

N.3. **Sulfur Dioxide**. Sulfur Dioxide Emissions shall not exceed 2 kg per metric ton of acid produced (4 lb per ton), the production being expressed as 100 percent H_2SO_4, and 416.7 lb per hour, and 1,820.00 TPY.

[Rule 62-204.800(8)(b)12, F.A.C.; 40 CFR 60.82(a); Construction Permit No. AC24-56211, PSD-FL-082]

N.4. **Sulfuric Acid Mist (SAM)**. SAM Emissions shall not exceed 0.075 kg per metric ton of acid produced (0.15 lb per ton), the production being expressed as 100 percent H_2SO_4, and 15.62 lbs/hr and 68.20 TPY.

[Rule 62-204.800(8)(b)12, F.A.C.; 40 CFR 60.83(a)(1); Construction Permit No. AC24-56211, PSD-FL-082]

N.5. **Visible Emissions**. Visible Emissions shall not exceed 10% opacity.

[Rule 62-204.800(8)(b)12, F.A.C.; 40 CFR 60.83(a)(2); Construction Permit No. AC24-56211, PSD-FL-082]

TEST METHODS AND PROCEDURES

{Permitting note: Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

N.6. **Sulfur Dioxide**. The following procedures and test methods shall be used to determine sulfur dioxide emissions. A compliance test shall be conducted once every calendar year (January 1 – December 31):

(a) The test methods in 40 CFR Appendix A or other methods and procedures as specified in this condition, except as provided in 40 CFR 60.8(b).

(b) (1) The emission rate (E) of sulfur dioxide shall be computed for each run using the following equation:

$E = (CQsd)/(PK)$

where:

E = emission rate of SO_2 kg/metric ton (lb/ton) of 100 percent H_2SO_4 produced.
C = concentration of SO_2, g/dscm (lb/dscf).
Qsd = volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).
P = production rate of 100 percent H_2SO_4, metric ton/hr (ton/hr).
K = conversion factor, 1000 g/kg (1.0 lb/lb).

(1) Method 8 shall be used to determine the Sulfur Dioxide concentration I and the volumetric flow rate (Qsd) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

(2) Suitable methods shall be used to determine the production rate (P) of 100 percent H_2SO_4 for each run. Material balance over the production system shall be used to confirm the production rate.

The following may be used as alternatives to the reference methods and procedures specified in this condition:

(a) If a source processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:

(i) The integrated technique of Method 3 is used to determine the O_2 concentration and, if required, CO_2 concentration.

(ii) The SO_2 emission rate is calculated as described in **Condition N.12.** substituting the acid mist concentration for Cs as appropriate.

[40 CFR 60.85(a), (b), (c); Rule 62-204.800(8)(b)12, F.A.C.; and Rule 62-297.310(8)(a), F.A.C.; Construction Permit No. AC24-56211, PSD-FL-082]

N.7. **Sulfuric Acid Mist**. The following procedures and test methods shall be used to determine sulfuric acid mist. A compliance test shall be conducted once every calendar year (January 1 – December 31).

(a) The test methods in 40 CFR Appendix A or other methods and procedures as specified in this condition, except as provided in 40 CFR 60.8(b).

(b) (1) The emission rate (E) of sulfuric acid mist shall be computed for each run using the following equation:

E=(CQsd)/(PK)

where:

E = emission rate of acid mist kg/metric ton (lb/ton) of 100 percent H_2SO_4 produced.
C = concentration of acid mist, g/dscm (lb/dscf).
Qsd = volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).
P = production rate of 100 percent H_2SO_4, metric ton/hr (ton/hr).
K = conversion factor, 1000 g/kg (1.0 lb/lb).

(2)Method 8 shall be used to determine the Sulfuric Acid Mist concentration (C) and the volumetric flow rate (Qsd) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

(3)Suitable methods shall be used to determine the production rate (P) of 100 percent H_2SO_4 for each run. Material balance over the production system shall be used to confirm the production rate.

(4)N/A

(c) The following may be used as alternatives to the reference methods and procedures specified in this condition:

(1) If a source processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:

(i) The integrated technique of Method 3 is used to determine the O_2 concentration and, if required, CO_2 concentration.

(ii) The acid mist emission rate is calculated as described in **Condition N.12.** substituting the acid mist concentration for C as appropriate.

[40 CFR 60.85(a),(b),(c); Rule 62-204.800(8)(b)12., F.A.C.; Construction Permit No. AC24-56211, PSD-FL-082]

N.8. **Visible Emissions**. Visible Emissions test method shall be EPA Method 9 incorporated and adopted by reference in Chapter 62-297, F.A.C. and be performed once every calendar year (January 1 – December 31).

[Rule 62-204.800(8)(b)12., F.A.C.; Rule 62-297.310(7)(b)., F.A.C.; 40 CFR 60.85(b)(4); Construction Permit No. AC24-56211, PSD-FL-082]

CONTINUOUS MONITORING REQUIREMENTS

N.9. **Sulfur Dioxide**. A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated. The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 and for calibration checks under 40 CFR 60.13(d), shall be sulfur dioxide (SO_2).

Method 8 shall be used for conducting monitoring system performance evaluations under 40 CFR 60.13(c) except that only the sulfur dioxide portion of the Method 8 results shall be used. The span value shall be set at 1000 ppm of sulfur dioxide.

[40 CFR 60.84(a); Construction Permit No. AC24-56211, PSD-FL-082]

N.10. **Conversion Factor**. A conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton) shall be established. The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999–AP–13) and calculating the appropriate conversion factor for each eight-hour period as follows:

$$CF = k[(1.000 - 0.015r)/(r - s)]$$

where:

CF = conversion factor (kg/metric ton per ppm, lb/ton per ppm).
k = constant derived from material balance. For determining CF in metric units, k=0.0653. For determining CF in English units, k=0.1306.
r = percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection plants subject to the Administrator's approval.
s = percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under **Condition N.9.**

[40 CFR 60.84(b); Construction Permit No. AC24-56211, PSD-FL-082]

N.11. All conversion factors and values under **Condition N.10.** from which they were computed (i.e., CF, r, and s) shall be recorded.

[40 CFR 60.84(c)]

N.12. **Sulfur Dioxide Alternative**. Alternatively, a source that processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen may use the following continuous emission monitoring approach and calculation procedures in determining SO_2 emission rates in terms of the standard. This procedure is not required, but is an alternative that would alleviate problems encountered in the measurement of gas velocities or production rate. Continuous emission monitoring systems for measuring SO_2, O_2, and CO_2 (if required) shall be installed, calibrated, maintained, and operated by the owner or operator and subjected to the certification procedures in Performance Specifications 2 and 3. The calibration procedure and span value for the SO_2 monitor shall be as **specified in Condition N.9.** The span value for CO_2 (if required) shall be 10 percent and for O_2 shall be 20.9 percent (air). A conversion factor based on process rate data is not necessary. Calculate the SO_2 emission rate as follows:

$$Es = (CsS)/[0.265 - (0.0126\ \%O_2) - (A\ \%CO_2)]$$

where:

N.12. Continued:

Es = emission rate of SO_2, kg/metric ton (lb/ton) of 100 percent of H_2SO_4 produced.
Cs = concentration of SO_2, kg/dscm (lb/dscf).
S = acid production rate factor, 368 dscm/metric ton (11,800 dscf/ton) of 100 percent H_2SO_4 produced.
$\%O_2$ = oxygen concentration, percent dry basis.
A = auxiliary fuel factor,
= 0.00 for no fuel.
= 0.0226 for methane.
= 0.0217 for natural gas.
= 0.0196 for propane.
= 0.0172 for No 2 oil.
= 0.0161 for No 6 oil.
= 0.0148 for coal.
= 0.0126 for coke.
$\%CO_2$ = carbon dioxide concentration, percent dry basis.

NOTE: It is necessary in some cases to convert measured concentration units to other units for these calculations: Use the following table for such conversions:

From—	To—	Multiply by—
g/scm	kg/scm	10^{-3}
mg/scm	kg/scm	10^{-6}
ppm (SO_2)	kg/scm	2.660×10^{-6}
ppm (SO_2)	lb/scf	1.660×10^{-7}

[40 CFR 60.84(d)]

N.13. Sulfur Dioxide Excess Emissions. For the purpose of reports under 40 CFR 60.7(c), periods of excess emissions shall be all three-hour periods (or the arithmetic average of three consecutive one-hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards under **Condition N.3.**

[40 CFR 60.84(e); Construction Permit No. AC24-56211, PSD-FL-082]

F.A.C. TEST REQUIREMENTS

N.14. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit.

[Rule 62-297.310, F.A.C.]

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Subsection O. This section addresses the following emissions unit(s).

E.U. ID No.	Brief Description
067	"F" Sulfuric Acid Plant

"F" Sulfuric Acid Plant is a double absorption process that produces sulfuric acid and controls sulfur dioxide (SO_2) emissions. The emissions unit uses a Brinks mist eliminator to control sulfuric acid mist (SAM). CAM does not apply for sulfur dioxide for this emissions unit.

{Permitting note(s): This emissions unit is regulated under NSPS - 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid, adopted and incorporated by reference in Rule 62-204.800(8)(b)12., F.A.C.; Rule 62-212.300, F.A.C., General Preconstruction Review Requirements; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) [PSD-FL-082]; Rule 296.402, F.A.C., Sulfuric Acid Plants; and, the Federal U.S. EPA Consent Decree, No. 14-707-BAJ-SCR entered between White Springs Agricultural Chemicals, Inc. d.b.a. PCS Phosphate-White Springs and the U.S. Environmental Protection Agency (U.S. EPA).}

The following specific conditions apply to the emissions unit(s) listed above:

ESSENTIAL POTENTIAL TO EMIT (PTE) PARAMETERS

O.1. **Permitted Capacity**. The production rate shall not exceed 2500 TPD, expressed as 100 percent H_2SO_4 or 104.20 TPH.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; Construction Permit No. AC24-56209, PSD-FL-082]

O.2. **Hours of Operation**. This emissions unit is allowed to operate continuously 8760 hours/year (8784 in any Leap Year).

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.]

EMISSION LIMITATIONS AND STANDARDS

{Permitting note: Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

{Permitting Note: Unless otherwise specified, the averaging times for these conditions are based on the specified averaging time of the applicable test method.}

O.3. **Sulfur Dioxide**. Sulfur Dioxide Emissions shall not exceed:

a. 2.6 lb/ton, 3-hr rolling average (not including startup and shutdown periods) {equivalent to 270.92 lbs/hr}; and,

b. 2.3 lb/ton, 365 day rolling average (including startup and shutdown periods) {equivalent to 1,049.38 TPY}.

"lb/ton" refers to pounds of sulfur dioxide emitted per ton of 100% sulfuric acid produced.

{Permitting Note: The 2.6 lb/ton & 2.3 lb/ton SO_2 emission limits are from Permit No. 0470002-107-AC which superseded the SO_2 emission limits stated in previously issued active construction permits.}

[Rule 62-204.800(8)(b)12., F.A.C.; 40 CFR 60.82(a); Construction Permit No. AC24-56209, PSD-FL-082; and, Specific Conditions 2.10. & 3.3., Permit No. 0470002-107-AC]

O.4. **Sulfuric Acid Mist (SAM).** SAM emissions, expressed as H_2SO_4, shall not exceed 0.075 kg per metric ton of acid produced (0.15 lb per ton), the production being expressed as 100 percent H_2SO_4, 15.62 lbs/hr and 68.20 TPY.

[Rule 62-204.800(8)(b)12., F.A.C.; 40 CFR 60.83(a)(1); Construction Permit No. AC24-56209, PSD-FL-082]

O.5. **Visible Emissions.** Visible Emissions shall not exceed 10% opacity.

[Rule 62-204.800(8)(b)12., F.A.C.; 40 CFR 60.83(a)(2); Construction Permit No. AC24-56209, PSD-FL-082]

TEST METHODS AND PROCEDURES

{Permitting note: Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

O.6. **Sulfur Dioxide.** The following procedures and test methods shall be used to determine sulfur dioxide emissions. A compliance test shall be conducted once every calendar year (January 1 – December 31):

(a) The test methods in 40 CFR Appendix A or other methods and procedures as specified in this condition, except as provided in 40 CFR 60.8(b).

(b) (1) The emission rate (E) of sulfur dioxide shall be computed for each run using the following equation:

$E=(CQsd)/(PK)$

where:

E = emission rate of SO_2 kg/metric ton (lb/ton) of 100 percent H_2SO_4 produced.

C = concentration of SO_2, g/dscm (lb/dscf).

Qsd = volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).

P = production rate of 100 percent H_2SO_4, metric ton/hr (ton/hr).

K = conversion factor, 1000 g/kg (1.0 lb/lb).

(2) Method 8 shall be used to determine the Sulfur Dioxide concentration (C) and the volumetric flow rate (Qsd) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

(3) Suitable methods shall be used to determine the production rate (P) of 100 percent H_2SO_4 for each run. Material balance over the production system shall be used to confirm the production rate.

(4) N/A

(c) The following may be used as alternatives to the reference methods and procedures specified in this condition:

(1) If a source processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:

(i) The integrated technique of Method 3 is used to determine the O_2 concentration and, if required, CO_2 concentration.

(ii) The SO_2 emission rate is calculated as described in **Condition O.12.** substituting the acid mist concentration for Cs as appropriate.

[40 CFR 60.85(a),(b),(c); Rule 62-204.800(8)(b)12., F.A.C.; Rule 62-297.310(8)(a), F.A.C.; Construction Permit No. AC24-56209, PSD-FL-082]

O.7. Sulfuric Acid Mist. The following procedures and test methods shall be used to determine sulfuric acid mist. A compliance test shall be conducted once every calendar year (January 1 – December 31):

(a) The test methods in 40 CFR Appendix A or other methods and procedures as specified in this condition, except as provided in 40 CFR 60.8(b).

(b) (1) The emission rate (E) of sulfuric acid mist shall be computed for each run using the following equation:

E=(CQsd)/(PK)

where:

E = emission rate of acid mist kg/metric ton (lb/ton) of 100 percent H_2SO_4 produced.
C = concentration of acid mist, g/dscm (lb/dscf).
Qsd = volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).
P = production rate of 100 percent H_2SO_4, metric ton/hr (ton/hr).
K = conversion factor, 1000 g/kg (1.0 lb/lb).

(2) Method 8 shall be used to determine the Sulfuric Acid Mist concentration (C) and the volumetric flow rate (Qsd) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

(3) Suitable methods shall be used to determine the production rate (P) of 100 percent H_2SO_4 for each run. Material balance over the production system shall be used to confirm the production rate.

(4) N/A

(c) The following may be used as alternatives to the reference methods and procedures specified in this condition:

(1) If a source processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:

(i) The integrated technique of Method 3 is used to determine the O_2 concentration and, if required, CO_2 concentration.

(ii) The acid mist emission rate is calculated as described in **Condition O.12.** substituting the acid mist concentration for C as appropriate.

[40 CFR 60.85(a),(b),(c); Rule 62-204.800(8)(b)12., F.A.C.; Rule 62-297.310(8)(a), F.A.C.; Construction Permit No. AC24-56209, PSD-FL-082]

O.8. Visible Emissions. Visible Emissions test method shall be EPA Method 9 incorporated and adopted by reference in Chapter 62-297, F.A.C. and be performed every calendar year (January 1 – December 31).

[Rule 62-204.800(8)(b)12., F.A.C.; Rule 62-297.310(7)(b)., F.A.C.; 40 CFR 60.85(b)(4); and Rule 62-297.310(8)(a), F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

O.9. **Sulfur Dioxide**. A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated. The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 and for calibration checks under 40 CFR 60.13(d), shall be sulfur dioxide (SO_2). Method 8 shall be used for conducting monitoring system performance evaluations under 40 CFR 60.13(c) except that only the sulfur dioxide portion of the Method 8 results shall be used. The span value shall be set at 1000 ppm of sulfur dioxide.

[40 CFR 60.84(a); Construction Permit No. AC24-56209, PSD-FL-082]

O.9.1. **SO_2 Monitoring System**. The permittee shall operate, calibrate and maintain a dual range SO_2 monitoring system on the SAP.

[Specific Conditions 3.1., Permit No. 0470002-107-AC.]

O.9.2. **CEMS for SO_2 Emissions**. The permittee shall follow all applicable terms and conditions contained in the CEMS Plan for SO_2 emissions as they relate to SAP F. The CEMS Plan for SO_2 Emissions is in Appendix SO_2, CEMS Plan for SO_2 Emissions of this permit.

[Specific Conditions 3.4., Permit No. 0470002-107-AC.]

O.10. **Conversion Factor**. A conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton) shall be established. The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999–AP–13) and calculating the appropriate conversion factor for each eight-hour period as follows:

$$CF = k[(1.000 - 0.015r)/(r - s)]$$

where:

CF = conversion factor (kg/metric ton per ppm, lb/ton per ppm).
k = constant derived from material balance. For determining CF in metric units, k=0.0653. For determining CF in English units, k=0.1306.
r = percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection plants subject to the Administrator's approval.
s = percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under **Condition O.9.**

[40 CFR 60.84(b); Construction Permit No. AC24-56209, PSD-FL-082]

O.11. All conversion factors and values under **Condition O.10.**, from which they were computed (i.e., CF, r, and s) shall be recorded.

[40 CFR 60.84(c); Construction Permit No. AC24-56209, PSD-FL-082]

O.12. **Sulfur Dioxide Alternative**. Alternatively, a source that processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen may use the following continuous emission monitoring approach and calculation procedures in determining SO_2 emission rates in terms of the standard. This procedure is not required, but is an alternative that would alleviate problems encountered in

the measurement of gas velocities or production rate. Continuous emission monitoring systems for measuring SO_2, O_2, and CO_2 (if required) shall be installed, calibrated, maintained, and operated by the owner or operator and subjected to the certification procedures in Performance Specifications 2 and 3. The calibration procedure and span value for the SO_2 monitor shall be as **specified in Condition O.9.** The span value for CO_2 (if required) shall be 10 percent and for O_2 shall be 20.9 percent (air). A conversion factor based on process rate data is not necessary. Calculate the SO_2 emission rate as follows:

$$Es=(CsS)/[0.265 - (0.0126\ \%O_2) - (A\ \%CO_2)]$$

where:

Es = emission rate of SO_2, kg/metric ton (lb/ton) of 100 percent of H_2SO_4 produced.

Cs = concentration of SO_2, kg/dscm (lb/dscf).

S = acid production rate factor, 368 dscm/metric ton (11,800 dscf/ton) of 100 percent H_2SO_4 produced.

$\%O_2$ = oxygen concentration, percent dry basis.

A = auxiliary fuel factor,
- = 0.00 for no fuel.
- = 0.0226 for methane.
- = 0.0217 for natural gas.
- = 0.0196 for propane.
- = 0.0172 for No 2 oil.
- = 0.0161 for No 6 oil.
- = 0.0148 for coal.
- = 0.0126 for coke.

$\%CO_2$ = carbon dioxide concentration, percent dry basis.

NOTE: It is necessary in some cases to convert measured concentration units to other units for these calculations: Use the following table for such conversions:

From—	To—	Multiply by—
g/scm	kg/scm	10^{-3}
mg/scm	kg/scm	10^{-6}
ppm (SO_2)	kg/scm	2.660×10^{-6}
ppm (SO_2)	lb/scf	1.660×10^{-7}

[40 CFR 60.84(d)]

O.13. Sulfur Dioxide Excess Emissions. For the purpose of reports under 40 CFR 60.7(c), periods of excess emissions shall be all three-hour periods (or the arithmetic average of three consecutive one-hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards under **Condition O.3.**

[40 CFR 60.84(e); Construction Permit No. AC24-56209, PSD-FL-082]

COMMON CONDITIONS - F.A.C. TEST REQUIREMENTS

O.14. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit.

[Rule 62-297.310, F.A.C.]

FEDERAL U.S. EPA CONSENT DECREE REQUIREMENTS

O.15. **Federal U.S. EPA Consent Decree (CD).** The permittee shall follow all applicable terms and conditions contained in the CD as they relate to SAP F. The portions of the CD applicable to SAP F are contained in Appendix CD, Consent Decree No. 14-707-BAJ-SCR of this permit.

[Specific Condition 2.1., Permit No. 0470002-107-AC]

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