TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

White Springs Agricultural Chemicals, Inc.-dba
PCS Phosphate, White Springs
P. O. Box 300
White Springs, Florida 32096
Suwannee River/Swift Creek Complex
Facility ID No. 0470002

PROJECT

Project No. 0470002-090-AC
Application for Air Construction Permit
Relocate the evaporator from Emissions Unit No. 036, "B" Superphosphoric Acid (SPA) Plant (Vacuum Evaporation Process)
Adding a new 54% Acid Clarifier Tank

COUNTY

Hamilton, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Waste and Air Resource Management Program
Northeast District Office
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

COMPLIANCE AUTHORITY

Florida Department of Environmental Protection
Northeast District Office
Compliance Assurance
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

August 20, 2014

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

Facility Description and Location

White Springs Agricultural Chemicals, Inc.-dba PCS Phosphate, White Springs is an existing phosphate mining and chemical production facility (Standard Industrial Classification No. 2874). The facility is located 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 site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

Facility Regulatory Categories

- The facility **is** a major source of hazardous air pollutants (HAP).
- The facility **has no** units subject to the acid rain provisions of the Clean Air Act.
- The facility **is** a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility **is** a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

This project is for an air construction permit, which authorizes the relocation of (only) the evaporator of EU036 “B” Superphosphoric Acid (SPA) Plant (Vacuum Evaporation Process, from the Suwannee River Chemical site to the existing EU070 “C” & “D” Superphosphoric Acid (SPA) Plants (Vacuum Evaporation Process) at the Swift Creek Chemical site within the same existing Title V facility. This project will also add a 54% Acid Clarifier Tank. The EU036 “B” Superphosphoric Acid (SPA) Plant (Vacuum Evaporation Process) and the 54% Acid Clarifier Tank will be vented to the existing EU070 scrubber. As part of the proposed project, EU036 will be removed from service.

Processing Schedule

7/17/14 Received the application for an air pollution construction permit.

SITE PLAN

FLOW DIAGRAM

- EU070 will now have three evaporators with the relocation of the evaporator from EU036. This addition will allow the facility the flexibility to occasionally operate all three, but mostly to operate two evaporators while one is down for cleaning.
- The new 54% Acid Clarifier Tank, the product of which will go to the 70% feed tank and the resulting sludge will be recycled back to the process.

2. PSD APPLICABILITY

General PSD Applicability

For areas currently in attainment with the state and federal AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the potential emission exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

PSD Applicability for this Project

TABLE 1 - BASELINE ACTUAL EMISSIONS
C and D SPA PLANT - PCS PHOSPHATE, WHITE SPRINGS, FLORIDA

Year	Production (Tons/P2O5)	Emission Factor 5-yr F (lb/ton P2O5)	Fluoride Emissions (Ton/yr)
2009	274,875	0.0042	0.58
2010	362,308	0.0042	0.77
2011	421,468	0.0042	0.89
2012	377,428	0.0042	0.80
2013	373,997	0.0042	0.79
2011-2012 Average	399,448		0.85

NOTES:
1. Production and F emissions are from the historical data presented in Table 3.
2. F emissions tested at 0.43 lb/hr, at 101.3 tph P2O5, equivalent to 0.00424 lb/ton P2O5.
3. The baseline period of CYs 2011-2012 was selected given the production during those years.

TABLE 2 - PROJECTED ACTUAL EMISSIONS
C and D SPA PLANT - PCS PHOSPHATE, WHITE SPRINGS, FLORIDA

Emissions	Fluoride Emissions Ton/yr
Baseline Actual (1)	0.85
Future Actual (2)	1.272
Demand Growth Exclusion (3)	0.16
Projected Actual (4)	1.11
Net Increase (5)	0.26
PSD Significant Emission Rate (6)	3
Subject to PSD?	NO

NOTES:
1. Baseline actual emissions from Table 1 are for CYs 2011 and 2012.
2. Future actual emissions based on 5 year optimistic market conditions at 600,000 TPY P2O5 and the baseline EF.
3. The demand growth exclusion/capable of accommodating emissions are based upon the unrealized capacity of the emissions unit prior to the project, estimated at 476,292 TPY P2O5, and which are unrelated to the project. Calculation: DG Excl. F = (476,292 - 399,448) tpy x 0.00424 lb F/ton x ton/2000 lbs = 0.16 tpy
4. The projected actual emissions are based on the maximum projected production rate of 600,000 TPY P2O5, emission factor, with demand growth/capable of accommodating emissions excluded.
5. Net Increase is the Projected Actual – Baseline Actual emissions.
6. PSD Significant Emission Rate per Rule 62-210.200, FAC.

TABLE 3 - BASELINE PERIOD ANNUAL PRODUCTION
C and D SPA PLANT - PCS PHOSPHATE, WHITE SPRINGS, FLORIDA

YEAR	TONS P2O5
2009	274,875
2010	362,308
2011	421,468
2012	377,428
2013	373,997
2011-2012 Avg.	399,448

NOTE:
1. Stack test on 9/30/10, at 101.3 tph P2O5, F emissions at 0.43 lb/hr.
2. Stack testing required every 5 years.
3. Maximum monthly production was 39,691 tons P2O5 in 3/12.
4. Maximum annualized production is 12 x 39,691 tons = 476,292 tpy P2O5.

3. APPLICATION REVIEW

EU070 "C" & "D" Superphosphoric Acid (SPA) Plants (Vacuum Evaporation Process). The emissions from EU 036 evaporator and EU070 **shall not** exceed the current permitted limit for EU070 as stated below:

Discussion of Emissions

Permitted Capacity. This permit does not modify or add any new permitted capacities. The combined operation rate shall not exceed the Maximum Daily 1-Hour Average Rate = 110 tons of 100% P_2O_5 input. The operation rate shall not exceed 876,000 tons during any 12 consecutive months of 100% P_2O_5 input.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; Construction Permit No. 0470002-034-AC, and PSD-FL-297]

Emissions Standards. This permit does not modify or add any new emission standards. Total Fluoride emissions at the sample port shall not exceed 0.0087 lb/ton of equivalent P_2O_5 feed; 0.96 lbs/hr and 3.8 TPY.

[Rule 62-204.800(7)(b), F.A.C.; 40 CFR 60.212; 40 CFR 63.602(b)(1), and PSD-FL-297]

Other Draft Permit Requirements

No additional production, operation limitations or monitoring requirements, etc. This project does not trigger any new rule applicability. A construction permit was issued because it meets the definition of construction as per Rule 62-210.200(88), F.A.C.

NSPS Requirements

This EU is not subject to any **new** NSPS requirements.

NESHAPS

This EU is not subject to any **new** NESHAPS requirements.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Leslie Maybin is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Northeast District Office's address at 8800 Baymeadows Way West, Suite 100, Jacksonville, Florida 32256, (904) 256-1700.