

NARRATIVE

TO: Wendy Troemel
FROM: Cassie Smith
DATE: March 18, 2024

Facility Name: **Rainbow Fertilizer, LLC**
AIRS No.: 261-00004
Location: Americus, GA (Sumter County)
Application #: 29060
Date of Application: October 9, 2023

Background Information

Rainbow Fertilizer, LLC ("RFLLC") operates a granular fertilizer plant in Americus. The facility is considered a synthetic minor source and currently operates under Air Quality Permit No. 2874-261-0004-S-05-0, issued April 22, 2022.

Purpose of Application

RFLLC submitted Application No. 29060 for the purpose of updating the permit to be consistent with current facility operations and recent changes that have taken place. The following revisions are proposed:

Removal of Condition 2.1

This condition limits the facility to 7,000 hours of operation during any 12 months of operation. Upon completion of an updated emissions inventory (included in Appendix A of Application No. 29060), RFLLC has concluded that the facility is capable of remaining below the Title V threshold at 8,760 hours of operation. Therefore, the facility is requesting that this condition be removed.

Revisions to Conditions 2.3, 2.4, and 2.5

These conditions reference a boiler (Kewanee) that is no longer operated at the facility. It was replaced prior to Rainbow's acquisition. The current boiler only fires natural gas and has a heat capacity of 16.738 MMBtu/hr. RFLLC requests that all references to "Kewanee" be removed. They also request that Condition 2.3(a) include a rule citation for 391-3-1-.02(2)(d)2(ii); the boiler will meet compliance requirements by only firing natural gas.

Revisions to Conditions 5.1, 5.2, and 7.3

The process venting to the wet scrubber was previously permitted (approximately 1998) using fan curves to demonstrate proper control efficiencies. RFLLC has recently upgraded the control technology with the addition of baghouses, in place of cyclones, that are designed for the full capacity of the fans. Dust loading to the wet scrubber is anticipated to be less than 0.005 grains/ft³. This can be demonstrated by performance testing. Based this information, the facility is requesting the removal of the requirement to determine, record, and report fan motor amps.

Revision of Condition 5.3

Air Quality Amendment No. 2847-261-0004-S-04-1 was issued in January 2022 which revised the time frame of scrubber maintenance (cleanout) from once every 10 days to once every 200 hours. RFLLC is now installing a continuous density monitor (Coriolis meter) for monitoring the wet scrubber slurry solids concentration. The density of the slurry reflects the solids content with a relationship of approximately 27% solids equal to a slurry-specific gravity of approximately 1.3. Tests have shown that a wet scrubber density below 1.3 produces stack test results below the permitted limits at this solids concentration. Therefore, RFLLC is requesting to remove the 200-hour cleanout requirement in favor of a requirement to maintain a specific gravity of 1.3 or less, based on weekly laboratory analyses. These analyses will be maintained in a form suitable for inspection.

Facility emissions will not be affected by these changes.

Permit Conditions

Condition 2.1 was removed as requested.

Conditions 2.3, 2.4, and 2.5 were revised as requested.

New Condition 2.6 was added to include applicability of 40 CFR 60 Subpart Dc for the boiler.

Condition 5.1 was revised as requested.

Condition 5.2 was removed as requested.

Condition 5.3 was modified to remove the outdated language as discussed above, but now requires the facility to maintain a specific gravity of 1.3 or less for the wet scrubber slurry. The facility is also required to maintain records of laboratory analyses of the scrubber slurry solids concentration.

Condition 7.3 was modified to remove the outdated language as discussed above, but now requires the facility to report any exceedance of the specific gravity limit per Condition 5.3 requirements.

New Condition 7.4 was added to include fuel usage requirements per 40 CFR 60 Subpart Dc for the boiler.

Summary & Recommendations

The facility will continue to be a synthetic minor source as a result of this modification. I recommend that Air Quality Permit No. 2847-261-0004-S-05-1 be issued to Rainbow Fertilizer, LLC in Americus, Georgia.