Title V Air Operation Permit Revision
DRAFT/PROPOSED Permit No. 0570057-036-AV

APPLICANT

The applicant for this project is EnviroFocus Technologies dba Gopher Resources, LLC. The applicant's responsible official and mailing address are: Angela Fogarty, 6505 Jewel Ave., Tampa, FL 33619.

FACILITY DESCRIPTION

EnviroFocus Technologies recycles spent automotive and industrial lead-acid batteries as well as lead scrap to produce lead ingots. Batteries arrive at the facility by truck and are off-loaded directly to the battery process area. Pallets or skids are used as separators for stacking of batteries that are received. When batteries are removed from the pallets or skids they are no longer used and become spent materials generated on-site. The clean pallets or skids are normally stored outside or in the plastics area. The clean pallets or skids will then be shredded in a hammer mill and used as raw material feed to the furnace to aid in the drying of chipped battery material or shipped off-site for recycling.

In the battery breaker area, spent batteries are conveyed to a hammer mill where they are crushed into primarily metallic lead, lead salts and plastics. After desulfurization, the lead salts are transferred to the material charging storage area along with the metallic lead. The separated plastic is loaded into truck via a pneumatic conveying system and shipped off-site for recycling. Emissions from the hammer mill (primarily of PM (including SAM) and Pb) and the future plastic plant (PM and VOC) are routed to a wet impingement scrubber and exhausted via a 130 foot stack.

The metallic lead and desulfurized lead salts from the battery breaker area are conveyed to the 40 TPH feed dryer to remove most of the moisture prior to being fed into the reverb furnace. The feed dryer is fueled by 10 MMBtu per hour (MMBtu/hr) natural gas burners (with propane as a backup fuel). PM and Pb emissions from the feed dryer are controlled by a shaker type baghouse (Foster Wheeler) with a design flow rate of 18,000 acfm at approximately 200 degrees Fahrenheit (°F) before being ducted to the process stack.

The material from the feed dryer is conveyed to the reverb furnace which is heated using natural gas. Molten soft lead from the reverb furnace will be conveyed through channels called launders directly to the refining kettles. The reverb furnace is fired by 23 MMBtu/hr burners. The facility also operates a blast furnace. Slag from the reverb furnace and other lead bearing scrap materials are fed to the blast furnace that produces hard lead. Other non-lead bearing fluxes and associated materials, including but not limited to coke, cast iron, silica, limerock, and shredded steel, are also added to the furnace as needed. Metallurgical coke will be combined with slag to help supply fuel for the blast furnace smelting process. Coke breeze may also be added to the slag as a reductant.

The blast furnace produces a by-product slag which will be either reused or reclaimed in the furnace. The slag is first tested using the EPA Methods 1311, 3005a and 6010b for sampling, preparation, digestion and analysis of Toxic Chemical Leaching Procedure extracts. If the slag is characteristically hazardous for lead, the material is brought back into the containment building for treatment with a stabilizing agent or returned to the furnaces for further reclamation. When the treatment process is chosen, the slag is tested again using the TCLP Methods 1311, 3005a and 6010b. The stabilizing agent is either brought in by a portable Tilt-up Pre-Filled Vertical Silo or pre-filled super sacs from the supplier.

Blast and Reverb Operating Collocated: Exhaust gases from both furnaces are ducted to an afterburner, followed by a shaker type baghouse and a wet scrubber before being combined with the exhaust gases from the feed dryer for final discharge through the 130 foot process stack.

Blast Operation Only Mode: Exhaust gases from the blast furnace are ducted to a blast only dedicated afterburner. The dedicated afterburner will require a startup period where the dedicated afterburner burners will be firing while the reverb burners are in high or low fire (dedicated afterburner standby mode). Once the dedicated afterburner reaches required temperature for operating, the reverb burners will be placed in banked mode (no charging of lead bearing or waste material).

Furnace tapping, charging and lead refining generate emissions that are termed as process fugitive emissions in the lead recycling process. This emissions unit includes the operations related to charging and tapping from the collocated reverb and blast furnaces, as well as the direct exhaust from the 10 refining kettles that receive and process lead from the furnaces. These emissions are captured and routed to a 72,000 acfm process fugitive emissions (hygiene) baghouse and exhausted via the 130 foot hygiene stack.

The refining kettles are indirectly heated by natural gas burners (EU ID 034). Alloying and fluxing agents such as sulfur and niter (sodium nitrate) are mixed in to produce lead alloys that meet predetermined specifications. The pollutant emissions consist of PM, Pb, NOX, VOC, SO2 and trace metal HAP. The PM and metals HAP, including Pb, are controlled by the hygiene baghouse.

The ten refining kettles are indirectly fired (i.e., the combustion products do not contact the process) utilizing individual oxygen enhanced burners. Therefore, the stacks that exhaust these combustion products are identified as a separate emission unit from the process fugitive emissions (EU ID No. 033). The kettles' in-direct combustion emissions are vented to the atmosphere through ten separate stacks.

The alkaline reagents is received and stored in the alkaline reagents process silo. The alkaline reagents are then transferred from the process silo to the desulfurization process and the sulfur dioxide scrubber used to control SO2 emissions from the reverb and blast furnaces. Emissions from the silo consist of PM and are controlled by bin vent filter (fabric filter) atop the silo that filters the air displaced from the silo loading operation.

Vehicular traffic movement on plant roads and in parking areas produce fugitive emissions of PM and Pb. These fugitive emissions from paved areas at the plant are controlled by a variety of work practice standards, including vacuum sweeping and wet suppression contained in Appendix FDCO. Also, as required by the Secondary Lead Maximum Achievable Control Technology (MACT), (40 CFR 63, Subpart X, see Appendix X) the building has two mobile wheel wash stations to remove lead contamination from the vehicles prior to exiting the building.

All process areas of the facility are enclosed within one building structure and the air from the building ventilates through two large 195,000 (Torits A, B and C combined into a common stack) and 160,000 acfm (Torits D and E combined into a common stack) Torit cartridge collectors identified as Torit filters. The 160,000 acfm Torit collector has a high efficiency particulate air (HEPA) filter downstream of the cartridge collector. This air flow produces an inward draft velocity at all openings in the building to prevent PM and Pb emissions from escaping uncontrolled. The filtered gases are emitted from two new stacks identified as the Torit stacks.

A diesel-fired emergency generator with a capacity of 1,000 kW also exists on site. The generator is only used when power is not available from the local utility. The maximum hours of operation are not to exceed 100 hours per year.

The facility is subject to PM and Pb RACT, NSPS requirements of 40 CFR 60 – Subpart L, and the MACT requirements of Subpart X of the NESHAP for Pb, VOC and Dioxins and Furan. Also, the emergency generator is subject to 40 CFR 60, Subpart IIII.

This facility also includes miscellaneous unregulated/insignificant emissions units and/or activities.

REGULATED EMISSIONS UNIT IDENTIFICATION NUMBERS AND DESCRIPTIONS

EU ID No.	Description
026	**Battery breaking area** including a 1,440 TPD hammer mill, separation equipment, wet impingement scrubber and a 130 ft stack.
028	**Alkaline reagent silo** with a bin filter
030	**Feed dryer** fueled by natural gas (propane backup) to remove moisture from lead and lead salts prior to introduction into the reverb furnace. Includes an 18,000 acfm baghouse that is vented through the combined process (blast and reverb furnace) stack.
031	**Collocated reverb furnace**. Direct emissions controlled by a common: afterburner, process

EU ID No.	Description
	baghouse and SO_2 scrubber exhausting through the 130-ft process stack.
032	**Collocated blast furnace**. Direct emissions controlled by a dedicated afterburner and a common: afterburner, process baghouse and SO_2 scrubber exhausting through the 130-ft process stack.
033	**Furnace tapping, charging and refining**. Process fugitive emissions from the furnace tapping and charging and the 10 refining kettles. Emissions are controlled by the 72,000 acfm (hygiene) baghouse exhausting through the 130-ft hygiene stack.
034	**Combustion gases from Refining Kettles**. (10) natural gas burners with a total capacity of 40 MMBtu per hour providing heat to the refining kettles. Exhaust is vented to 10 small stacks.
035	**Building ventilation** of the totally enclosed lead recycling process to maintain the key operations at a lower than ambient pressure ensuring in-draft through any doorway opening. Emissions are controlled by a 195,000 acfm cartridge collector and exhausted through a 130 ft stack.
036	**Facility grounds and roadways**. Controlled by wet suppression, vacuum sweeping and wheel wash stations.
037	**Emergency generator** rated at 1,000 kilowatts (kW).
038	**Additional building ventilation** that is vented to the 160,000 acfm cartridge collector with secondary HEPA filter to increase the negative pressure within the building exhausting through a 90 ft stack.

APPLICABLE REGULATIONS.

Based on the Title V air operation permit revision application received March 5, 2019, this facility is not a major source of hazardous air pollutants (HAP). The existing facility is a PSD major source of air pollutants in accordance with Rule 62-212.400, F.A.C. A summary of applicable regulations is shown in the following table.

Regulation	EU No(s).
40 CFR 60, Subpart A, NSPS General Provisions	031, 032, 033
40 CFR 60, Subpart L	031, 032, 033
40 CFR 60, Subpart IIII	037
40 CFR 63, Subpart X	026, 030, 031, 032, 033, 034, 035, 036, 038
Rule 62-296.600, 601, and 603, F.A.C. – Pb RACT	026, 030, 031, 032, 033, 035, 036, 038
Rule 62-296.700 and 712, F.A.C. – PM RACT	030, 032, 033, 036
Rule 62-296.320(2), F.A.C. – Objectionable Odor	Facility-wide

PROJECT DESCRIPTION

The purpose of this project is to revise the Title V Air Operation Permit No. 0570057-033-AV to incorporate the modifications authorized under Permit No. 0570057-035-AC (PSD-FL-404D). These completed modifications included the following:

1. *Reverb Furnace* (EU 031):
   a. Replacement of the current 23 million British thermal units per hour (MMBtu/hr) reverb furnace burner with a 30 MMBtu/hr burner.
   b. Addition of copper cooling panels behind the refractory in several high-wear areas in the reverb furnace. The water flowing through copper blocks shall be used to cool the refractory.

2. *Furnace Afterburner Burner*: Replacement of the burner of the common blast and reverb furnaces afterburner chamber with a like-kind replacement from a heat capacity standpoint (maximum of 10 MMBtu/hr).

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Title V Air Operation Permit issued November 24, 2015
Title V Air Operation Permit Revision issued March 6, 2017
Title V Air Operation Permit Revision Application received March 5, 2019

PRIMARY REGULATORY REQUIREMENTS

Standard Industrial Classification (SIC) Code: 3341 – Secondary Nonferrous Metals.

North American Industry Classification System (NAICS): 331492 – Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum).

HAP: The facility is not identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility does operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility does operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

CAM: Compliance Assurance Monitoring (CAM) does not apply to any of the units at the facility, since the facility demonstrates compliance with the standards by the use of CEMS.

GHG: The facility is not identified as a major source of greenhouse gas (GHG) pollutants.

PROJECT REVIEW

Changes to the permit made as part of this revision are shown in strike through format for deletions and in double underline format for additions. For ease of identification, all changes have also been highlighted in yellow within the permit document.

1. The permit has been updated to reflect the most recent TV permit formatting (including Facility-Wide conditions, rules and appendices).
2. The process description has been updated to reflect the new heat input rating of the reverb furnace burner to be 30 MMBtu/hr.

3. Specific Condition B.2. - Reverb Furnace Burner Capacity: The maximum heat input rating of the reverb furnace burner is ~~23~~ 30 MMBtu/hr. [Rules 62-210.200(PTE) and 62-212.400(10)(c), F.A.C.; and Permit No. 0570057-035-AC]

4. Specific Condition B.6. - Reverb Furnace Fuel: Natural gas is the primary fuel for the reverb furnace burners. Propane may be used as a backup fuel. A combination of the fuels shall not exceed a total heat input of ~~201,480~~ 262,800 MMBtu to the reverb furnace burners during any consecutive twelve month period. [Permit No. 0570057-020-AC; Rules 62-210.200(PTE) and 62-212.400(10)(c), F.A.C.]

5. Specific Condition B.13. - NOX Emission Standard: NOX emissions from the feed dryer shall not exceed 0.21 lb/MMBtu and 2.1 pounds per hour (lb/hr) as demonstrated by a combined 42.2 lb/hr 30-day rolling CEMS average on the process stack. NOX emissions from the blast furnace and reverb furnace shall not exceed 0.80 lb/ton and 0.80 lb/ton of material charged, respectively, as demonstrated by a combined 42.2 lb/hr 30-day rolling CEMS average on the process stack. NOX emissions from the process stack shall not exceed 158 tons per year (tpy) on a 12-month rolled month CEMS average basis. [Permit No. 0570057-035-AC; Rules 62-4.070(3), 62-210.200(PTE), and 62-212.400(10)(c), F.A.C.; and PSD Avoidance]

6. Specific Condition B.14. - CO Emission Standard: CO emissions from the feed dryer and blast furnace and reverb furnace shall not exceed 204.7 lb/hr as demonstrated by a combined 30-day rolling CEMS average on the process stack. CO emissions from the process stack shall not exceed 464 tpy on a 12-month rolled month CEMS average basis. [Permit No. 0570057-035-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.; and PSD Avoidance]

7. Specific Condition B.15. - SO2 Emission Standard: SO2 emissions from the feed dryer, blast furnace and reverb furnace combined with SO2 emission from the hygiene stack shall not exceed 202.24 lb/hr as demonstrated by a combined 30-day rolling CEMS averages on the hygiene and process stacks. SO2 emissions from the process stack shall not exceed 202 tpy on a 12-month rolled month CEMS average basis. [Permit No. 0570057-035-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.; and PSD Avoidance]

CONCLUSION

This project revises the Title V Operation Permit No. 0570057-031-AV, which was effective on November 24, 2015. This Title V air operation permit revision is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.