Florida Department of Environmental Protection

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, FL 33637-0926

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

PERMITTEE

Pinellas County Utilities
6730 142nd Avenue North
Largo, FL 33771

Authorized Representative:
Mr. James Dulaney, Interim Director

Air Permit No. 1030234-006-AF
Federally Enforceable State Operation Permit

South Cross Bayou
Pinellas County, Florida

PROJECT

This is the final Federally Enforceable State Operation Permit, which authorizes the operation of South Cross Bayou Water Reclamation and Residuals Management Facility, which is a sewage sludge drying and pelletizing operation at a wastewater sewage treatment facility (Standard Industrial Classification No. 4952). This project is the renewal of the facility operation permit with no changes to the existing facility or emissions. The facility is located in Pinellas County at 7401 54th Avenue North in St. Petersburg, Florida. The UTM coordinates are Zone 17, 328.39 kilometers (km) East, and 3078.93 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements and Facility-wide Specific Conditions); 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 A of Section 4 of this permit.

Permitting Authority: Applications for air operation permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4 and 62-210 of the Florida Administrative Code (F.A.C.). The Permitting Authority responsible for making a permit determination for this project is the Department of Environmental Protection's Air and Solid Waste Permitting Section in the Southwest District Office. The Permitting Authority's physical address is: 13051 North Telecom Parkway, Temple Terrace, Florida 33637-0926. The Permitting Authority's mailing address is: 13051 North Telecom Parkway, Temple Terrace, Florida 33637-0926. The Permitting Authority's phone number is 813-470-5700.

Petitions. A person whose substantial interests are affected by the proposed decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, MS #35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this notice. Petitions filed by any other person must be filed within 14 days of receipt of this proposed action. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency

determination; (c) A statement of how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the permitting authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the permitting authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Effective Date: This permitting decision is final and effective on the date filed with the clerk of the Permitting Authority unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition pursuant to Rule 62-110.106, F.A.C., and the petition conforms to the content requirements of Rules 28-106.201 and 28-106.301, F.A.C. Upon timely filing of a petition or a request for extension of time, this action will not be effective until further order of the Permitting Authority.

Judicial Review: Any party to this permitting decision (order) has the right to seek judicial review of it under Section 120.68, F.S., 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.

1030234-006-AF Effective Date: May 10, 2016
Renewal Application Due Date: March 11, 2021
Expiration Date: May 10, 2021

Executed in Hillsborough County, Florida.

for

Pamala Vazquez
Program Administrator
Permitting & Waste Cleanup Program
Southwest District

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Federally Enforceable State Operation Permit package 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.

James Dulaney, Pinellas County Utilities, jdulaney@pinellascoutny.org
Mathew Busch, Synagro, mbusch@synagro.com
Sherrill Culliver, Pinellas County Air Quality Division, sculliver@co.pinellas.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.

Cathy Rodriguez May 10, 2016
(Clerk) (Date)

FACILITY DESCRIPTION

This facility consists of a sewage sludge drying and pelletizing operation at a wastewater sewage treatment facility. The existing facility consists of the following emissions units.

The existing facility consists of the following emissions units (EU).

EU No.	Emission Unit Description
002	Two (2) Dried Sewage Sludge (Pellet) Storage Silos
003	Truck Loading/Unloading Station
005	Dewatering Building
006	Sewage Sludge Dryer

APPLICABLE REGULATIONS

A summary of applicable regulations is shown in the following table.

Regulation	EU No(s).
Federal Rule Citations	
40 CFR 60 Appendix A, Test Method	002, 003, 005
40 CFR 61 Subpart A, General Standards	006
40 CFR 61 Subpart E, National Emission Standards for Mercury	006
State Rule Citations	
Rule 62-4 F.A.C., General Permitting Requirements	Facility Wide
Rule 62-4.040, F.A.C., Exemptions	Facility Wide
Rule 62-4.070(3), F.A.C., Issue Permits With Specific Conditions	Facility Wide
Rules 62-204.800, F.A.C. Testing Requirements for VE	002, 003, 005, 006
Rule 62-210.200, F.A.C. Potential to Emit	Facility Wide
Rule 62-210.300(2), F.A.C. Operation Permit Requirements	Facility Wide
Rule 62-210.300(3), F.A.C. Permit and Exemption Requirements	Facility Wide
Rule 62-210.650, F.A.C. Circumvention	Facility Wide
Rule 62-210.900, F.A.C. Forms and Instructions	Facility Wide
Rule 62-297.310, F.A.C., Testing Requirements	Facility Wide
Rule 62-297.310(8)(a).1., F.A.C., Testing Frequency	Facility Wide

EXEMPT EMISSION SOURCES/ACTIVITIES

- Fugitive VOC emissions from the wastewater treatment plant.
  Previously identified as Unregulated EU 001.
  [Rule 62-210.300(3)(b)1., F.A.C.]

- Group of 11 diesel fired emergency generators and 2 emergency diesel driven blowers.
  Previously identified as Unregulated EU 007.
  [Rule 62-210.300(3)(a)35. F.A.C.]

- Digester Gas Flare
  Previously identified as Unregulated EU 008.
  [Rule 62-4.040, F.A.C.]

Exemptions under Rule 62-4.040(1)(b), F.A.C. (insignificant emissions), may be revoked if the installation is substantially modified or the basis for the exemption is determined to be materially incorrect.

FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is not a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- This facility is a synthetic non-Title V source for the pollutant particulate matter (PM).
- The sewage sludge dryer (EU 006) is regulated under National Emission Standards for Hazardous Air Pollutants (NESHAP) - 40 CFR 61, Subpart E, National Emission Standard for Mercury and the general provisions of 40 CFR 61, Subpart A, General Standards, where applicable, which has been adopted by reference in Rule 62.204-800(10), F.A.C.
- The engines that make up EU 007 were constructed or reconstructed before June 12, 2006, and are subject to Title 40, Code of Federal Regulations, Part 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. If any of these engines are replaced with one that was constructed or reconstructed on or after June 12, 2006, it will be considered a new engine and must comply with 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

PERMIT HISTORY/AFFECTED PERMITS

This permit replaces Federally Enforceable State Operation Permit No. 1030234-005-AF.

ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Southwest District of the Department of Environmental Protection (Department). The mailing address, phone number and e-mail address is:

   Florida Department of Environmental Protection
   Southwest District Office
   Air and Solid Waste Permitting Program
   13051 North Telecom Parkway
   Temple Terrace, Florida 33637-0926
   Telephone: 813-470-5700
   E-mail: SWD_Air_Permitting@dep.state.fl.us

   All documents related to applications for permits to operate an emissions unit shall be submitted to the above e-mail address and/or address.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Pinellas County Air Quality Division. The mailing address, phone number and e-mail address of the Local Air Program is:

   Pinellas County Air Quality Division
   509 East Avenue South, Suite 138
   Clearwater, Florida 33756
   Telephone: 727-464-4422
   E-mail: Airquality@pinellascounty.org

3. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); Appendix D (Common Testing Requirements); Appendix E (40 CFR 61, Subpart E – National Emission Standard for Mercury; and Appendix F (40 CFR 61, Subpart A – General Provisions).

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 new emissions unit shall be constructed and no existing emissions unit shall be 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. Renewal. Prior to sixty (60) days before the expiration date of this permit, the permittee shall apply for a renewal of the permit. A renewal application shall be timely and sufficient. If the application is submitted prior to sixty (60) days before expiration of the permit, it will be considered timely and sufficient. If the renewal application is submitted at a later date, it will not be considered timely and sufficient unless it is submitted and made complete prior to the expiration of the operation permit. When the application for renewal is timely and sufficient, the existing permit shall remain in effect until the renewal application has been finally acted upon by the Department. To properly apply for an operation permit, the applicant shall submit the following:
   a. the appropriate permit application form *(see current version of Rule 62-210.900, F.A.C. (Forms and Instructions), and/or FDEP Division of Air Resource Management website at: http://www.dep.state.fl.us/air/)*;
   b. the appropriate operation permit application fee from Rule 62-4.050(4)(a), F.A.C.;
   c. copies of the most recent compliance test reports required by Specific Condition No's. A.10., and B.13. if not previously submitted;
   d. copies of the most recent month of records/logs specified in Specific Condition No's. A.11., and B.14; and
   e. any proposed revisions to the most recently approved O & M Plan (Pinellas County Air Quality Division) see Specific Condition No. A.12.

   [Rules 62-4.090, 62-210.300(2), and 62-210.900, F.A.C.]

8. Annual Operating Report (AOR): The information required by the Annual Operating Report for Air Pollutant Emitting Facility (DEP Form No. 62-210.900(5)) shall be submitted by April 1 of each year, for the previous calendar year, to the Department of Environmental Protection's (DEP) District Office. All synthetic non-Title V sources shall submit a completed DEP Form 62-210.900(5) unless the annual operating report is submitted using the DEP's electronic annual operating report software. Emissions shall be computed in accordance with the provisions of subsection 62-210.370(2), F.A.C.

   [Rule 62-210.370(3), F.A.C.]

   {Permitting Note: Resources to help you complete your AOR are available on the electronic AOR (EAOR) website at: http://www.dep.state.fl.us/air/emission/eaor. If you have questions or need assistance after reviewing the information posted on the EAOR website, please contact the Department by phone at (850) 717-9000 or email at eaor@dep.state.fl.us.}

A. EU 002 Two (2) Dried Sewage Sludge (Pellet) Storage Silos, EU 003 – Truck Loading/Unloading Station, EU 005 – Dewatering Building

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
002	The silos each have a storage capacity of 60 tons of pellets. Each silo can receive a maximum of 1.25 dry tons/hour of pellets. They cannot be loaded simultaneously. Particulate matter emissions from filling the silos are controlled by a common baghouse, Mac 96-AVS-36, Style III, which exhausts at a design rate of 1,500 acfm to the Dewatering Building's odor control scrubber, Met-Pro PT 512-96 (EU 005). *Note: For safety reasons each silo may be purged with nitrogen from the same nitrogen storage tank used for the recycle bin.*
003	The Truck Loading/Unloading Station is located in the Dewatering Building. Pellets from the 2 storage silos (EU 002) are transferred through an elevator then through a dustless chute, which discharges into a truck at a maximum loading rate of 50 tons/hr. In order to assist in controlling particulate emissions, before the pellets enter a truck, a coating agent, such as Dustrol 3010 or similar, can be applied if necessary to the pellets at a design rate of 1 to 3 gallons per ton. The station is also used to unload dewatered residuals and load dewatered residuals from trucks at approximately 15 tons/hr. Trucks will not unload residuals from food establishments, portable toilets, or holding tanks for processing at the sewage sludge drying and pelletizing operations. Only 1 truck can be loaded or unloaded at any one time. The station's truck access doors are closed during all wet cake unloading operations and while fully loading finished product into short trailers or partially loading longer trailers. To fully load long trailers, one of the doors must be kept open to accommodate the tractor and allow the trailer to be repositioned. Coating agents can also be applied during this condition. Emissions from the elevator and trucks are vented to the same common baghouse, Mac 96-AVS-36, Style III, controlling the 2 pellet storage silos and then to the building's odor control scrubber, Met-Pro PT 512-96. Silo filling and truck loading/unloading may occur at the same time.
005	This building contains a cake receiving hopper, centrifuges, centrifuge cake screw conveyor, other associated sewage residual related handling equipment, and the Truck Loading/Unloading Station (EU 003). Odors from these activities are controlled by the Met-Pro PT 512-96 scrubber with a design airflow rate of 20,000 acfm. The Mac 96-AVS-36, Style III baghouse that controls emissions from EUs 002 and 003 exhausts through this scrubber.

PERFORMANCE RESTRICTIONS

A.1. Permitted Capacity:

a. The maximum allowable transfer rate of dried pellets to each storage silo is 1.25 tons/hr. based on a daily average.

b. The total combined amount of dried pellets transferred to both storage silos shall not exceed 30 tons/day and 10,950 tons per any consecutive 12 month period.

c. The maximum allowable transfer rate of pellets to each truck shall not exceed 50 tons/hour.

[Rule 62-210.200 "Potential to Emit" (PTE), F.A.C.]

A.2. Methods of Operation

a. Only one silo may receive dried pellets at any one time.

b. Only one truck may be loaded with pellets at any one time.

[Rule 62-210.200 PTE, F.A.C.; Construction Permit 1030234-001-AC]

A. EU 002 Two (2) Dried Sewage Sludge (Pellet) Storage Silos, EU 003 – Truck Loading/Unloading Station, EU 005 – Dewatering Building

A.3. Odor Control Scrubber Operation: The odor control scrubber shall be operating when:

a. transferring dried pellets to the product storage silos;

b. loading or unloading trucks; and

c. when any equipment associated with the sewage residual handling equipment (such as centrifuges, primary sludge tanks, sludge blend tanks, pelletizer, all dewatering equipment, etc. that is typically in operation) is operating.

[Rule 62-210.200 PTE, F.A.C.; Construction Permit 1030234-001-AC]

A.4. Restricted Operation: The hours of operation of are not limited (8,760 hours per year).
[Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

A.5. Emissions Standards:

a. Visible Emissions: In order to provide reasonable assurance of proper operation and maintenance of the emission control devices, visible emissions from the scrubber exhaust shall not exceed 5% opacity.

[Rules 62-4.070(3) and 62-210.650, F.A.C.]

TESTING REQUIREMENTS

A.6. Compliance Tests Prior to Renewal: Except as provided in subparagraph 62-297.310(8)(b)3., F.A.C. (see Appendix D – Common Testing Requirements), compliance tests shall be performed on the Met-Pro PT 512-96 scrubber for visible emissions and odor prior to obtaining a renewed operation permit to demonstrate compliance with the emission limits in Specific Conditions **A.5.**
[Rules 62-210.300(2)(a) and 62-297.310(8)(b), F.A.C.]

(Permitting Note: The Mac 96-AVS-36, Style III common baghouse for EU Nos. 002 and 003 exhausts through this odor control scrubber.)

A.7. Additional Testing Requirements: Odor emissions testing shall be conducted as follows:

a. when the three processes described in Specific Condition No. A.3. are operating;

b. when the processes described in Specific Condition Nos. A.3.a & b., are operating at 90-100% of their associated maximum permitted operating rates; and

c. downstream of all airflows into the scrubber's stack.

[Rules 62-4.070(3) and 62-297.310(2), F.A.C.]

A.8. Test Requirements: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rule 62-297.310(9), F.A.C.]

A. EU 002 Two (2) Dried Sewage Sludge (Pellet) Storage Silos, EU 003 – Truck Loading/Unloading Station, EU 005 – Dewatering Building

A.9. Test Methods: Required tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
ASTM E679-04	Standard Practice for Determination of Odor and Taste Thresholds

The above methods are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department.

[Rules 62-204.800, F.A.C.; and Appendix A of 40 CFR 60]

RECORDS AND REPORTS

A.10. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the:

a. a copy of the daily logs/records required by Specific Condition A.11. for the test day; and

b. the actual transfer rates of dried pellets to a silo and to a truck during the test period.

[Rule 62-297.310(10), F.A.C.]

A.11. Daily and Monthly Log for: The permittee shall at a minimum maintain the following logs/records at the facility when the applicable emission unit is operating:

DAILY

a. EU 002
   1. date and emission unit ID number;
   2. pressure drop across the baghouse;
   3. total amount of dried pellets transferred to a silo, in tons;
   4. total hours of transferring dried pellets to the silos, in tons; and
   5. average hourly transfer rate of dried pellets to the silos, tons/hour.

b. EU 003
   1. date and emission unit ID number;
   2. pressure drop across the baghouse;
   3. amount of dried pellets loaded in each truck, in tons;
   4. the elapsed loading time as determined from the start and end time for loading each truck, in hours;
   5. hourly loading rate for each truck, in tons/hour; and
   6. chemical coating name and coating rate in gallons per ton.

c. EU 005
   1. date and emission unit ID number;
   2. pressure drop across the scrubber;

3. name of the scrubbing liquid(s);
4. pH of the scrubbing liquid; and
5. scrubbing liquid flow rate (gpm).

MONTHLY

d. EU 002

1. most recent cumulative consecutive 12 month total of dried pellets transferred to the silos, in tons.

Monthly records shall be completed by the end of the following month. Daily records shall be completed within seven (7) business days. The records shall be maintained in a form suitable for inspection by the Department upon request and shall be kept at the facility for a minimum of the most recent three (3) year period.

[Rule 62-4.070(3), F.A.C.]

A.12. Operation and Maintenance (O & M) Plan for Particulate Matter Control: For air pollution control devices and collection systems, the permittee shall maintain and implement an O & M Plan to include a schedule for the maintenance and inspection of each control device, collection systems, and auxiliary equipment. Records of inspections, maintenance, and performance data of control devices and auxiliary equipment shall be retained by the emissions unit for a minimum of two (2) years and shall be made available to the Compliance Authority upon request. The O & M Plans for the Mac 96-AVS-36, Style III baghouse and the Met-Pro PT 512-96 scrubber were attached to the permit application dated October 15, 2010. The plans may be modified with prior approval from the Compliance Authority. The performance parameters shall include operating rates and efficiencies. Such parameters and records shall include, at a minimum, that shown below.

a. The operating parameters.
b. Time table for the routine maintenance as specified by the manufacturer.
c. Time table of routine weekly, quarterly, semi-annual, and annual observations as described in the O&M Plan.
d. A list of the type and quantity of required spare parts, which are stored on the premises. Alternatively, should any part of a pollution control device fail that prevents the control device from operating properly and that part cannot be replaced using best operational practices, all processes associated with that control device must be shut-down until the control device can be returned to its normal operational mode.
e. A record log, which will indicate at a minimum:
    1. When maintenance and observations were performed;
    2. What maintenance and observations were performed;
    3. Why the maintenance was performed;
    4. Who performed said maintenance and observations; and
    5. Parameter(s) for each operational check, to show within acceptable parameter range(s), if applicable.

[Pinellas County Code, Section 58-128]

B. EU 006-Sewage Sludge Dryer

This section of the permit addresses the following emissions unit.

EU No.	Emission Unit Description
006	The sewage sludge drying train is located in the Dryer/Pelletizer Building, which is located to the east of the Dewatering Building (EU 005). Heat to the dryer is supplied by a furnace, which is fired with natural gas and/or digester gas. The digester gas may contribute up to 100% of the total gas demand of the dryer. The maximum total combined heat input rate to the furnace is 16.0 MMBtu/hr. (based on a monthly average). The dryer's maximum total material input rate is 21.0 tons/hr. (42,000 lbs./hr.) based on a daily average, which is comprised of approximately 65%-75% total solids (11,000 lbs./hr. dewatered wet cake + 31,000 lbs./hr. recycled material). Although the maximum total design material output rate of the dryer is 24,583 dry lbs./hr., the maximum final material (production) rate of the process is 2,500 dry lbs./hr., 30 dry tons/day, and 10,950 dry tons/year. The dried sludge exiting the dryer first passes through a 2-stage air/solid separation process (pre-separator & poly cyclone). The **airflow** exiting the dryer at a minimum design temperature of 200 °F passes through a pre-separator & poly cyclone then enters a sub-cooler saturator and is divided into 2 air streams. The first air stream, which is approximately 75% of the total airflow is recycled back to the furnace. The second air stream, which is approximately 25% of the total airflow continues through a Hydro Mist venturi scrubbing system. The airflow exiting the Hydro Mist venturi scrubbing system, then joins an air stream from the 96 AVR 32, Style III baghouse (part of the fugitive dust control system for the building) before it enters a CECO regenerative thermal oxidizer (RTO). The RTO, which is located outside the dryer/pelletizer building, has a design minimum volatile organic compound destruction efficiency of 98% and is fired with only natural gas at a maximum heat input rate of 2.0 MMBtu/hr. (based on a monthly average). The RTO also functions to reduce emissions of ammonia and odors. Air in the RTO's combustion chamber has a design minimum residence time of 1 second and is maintained at a minimum temperature of 1400 °F before being exhausted through a 50-foot high stack. The **solid material** from the 2-stage separation process then passes through a vibrating screen, which separates the material into 4 streams. The 4 streams are: 1) trash; 2) recycled undersized material; 3) recycled oversized material; and 4) the final product material (2,500 dry lbs./hr. & 30 dry tons/day, maximum). The oversized material is passed through an enclosed crusher before it is combined with the undersized material. The combined crushed oversized material and undersized material are then passed through an elevator before being loaded into a "recycle bin". Material exiting the recycle bin enters a mixer where it is combined with unprocessed wet cake/sludge, which comes from a wet cake storage bin. The final product material (correct sized material) exiting the vibrating screen is conveyed via an elevator before passing through a pellet cooler. From the cooler the cooled material (pellets) is then pneumatically conveyed to 1 of 2 product storage silos (EU 002). The recycle bin, 2 elevators, pellet cooler, and pneumatic conveying system are located in the Dryer/Pelletizer Building. Displaced air from these activities is controlled by the 96 AVR 32, Style III baghouse (as mentioned above). The air exhausting from the baghouse, at a design rate of 2,500 acfm, is then vented to the CECO RTO. If the amount of undersized and crushed oversized material is insufficient to sustain the level in the recycle bin, final product material may be temporarily diverted through the crusher and on to the recycle bin. *Note: for safety reasons the recycle bin may be purged with nitrogen from a nitrogen storage tank located outside the dryer/pelletizer building*

FEDERAL REGULATIONS

B.1. Federal Regulatory Requirements: This emission unit is subject to 40 CFR 61, Subpart A – General Provisions, and 40 CFR 61 Subpart E – National Emission Standards for Mercury which are adopted by reference in Rule 62-204.800, F.A.C.

40 CFR 61, Subpart E Applicable Provision References

(*Note: Entire section applies unless otherwise noted with specific applicable subsection references)*

§ 61.50 Applicability.

§ 61.51 Definitions.

§ 61.52 Emission standard.

§ 61.52(b)

§ 61.53 Stack sampling.

§ 61.53(d)

§ 61.54 Sludge sampling.

§ 61.55 Monitoring of emissions and operations.

§ 61.55(a)

§ 61.56 Delegation of authority.

[Rule 62-204.800(10), F.A.C.]

PERFORMANCE RESTRICTIONS

B.2. Permitted Capacity: The dryer's maximum total material input rate is 21.0 tons/hr. (42,000 lbs./hr.) based on a daily average, which is comprised of approximately 65%-75% total solids (11,000 lbs./hr. dewatering wet cate + 31,000 lbs./hr. recycled material). The total material input rate of the dryer shall be determined by the following:

$$M = \frac{C(\%R - \%C)}{(\%R - \%M)}$$

Where: M = Dryer Total Material Input Rate (lbs/hour)
C = Wet Sludge Feed Cake to Mixer (lbs/hour)
C to be determined by weighing the quantity of sludge pumped during a known time interval.
%M = Percent Solids of Dryer Feed (after mixing)
%C = Percent Solids of Wet Sludge Feed Cake
%R = Percent Solids of Recycled Dry Material (prior to mixing)

Determine %M, %C, and %R at least once per day. These values shall be entered into the dryer's system operating program to provide real time indication of the dryer's material input rate. C (lbs/hr. cake feed to mixer) shall be determined by the operating speed of the pump feeding sludge cake to the mixer. This pump is a positive displacement pump and will deliver repeatable and precise quantities of sludge with a linear relationship to the speed of the pump rotor. The pump shall be calibrated and flow rates confirmed prior to the start of emission testing. Additionally, the daily dry solids output of the pump shall be compared to the quantity of dried product delivered to the product storage silos. In the event that quantities of dry solids pumped and dry product stored vary by more than 10%, the pump shall be recalibrated.

The 24-hour average of percent solids and the wet cake feed to the mixer shall be applied to the above formula and a daily dryer input rate determined. An hourly dryer input rate shall be determined from the daily rate to ensure compliance.

During emissions compliance testing, the above procedure shall be used to determine dryer input rate for the actual period of the test and not the entire day.

[Rule 62-4.160(2) and 62-210.200(PTE), F.A.C.; Construction Permit 1030234-001-AC]

B.3. Authorized Fuel:

a. The furnace for the dryer shall be only fired with natural gas and/or digester gas at a maximum combined total heat input rate of 16.0 MMBtu/hr. (based on a monthly average).

b. The regenerative thermal oxidizer (RTO) shall be only fired with natural gas at a maximum heat input rate of 2.0 MMBTU/hr. (based on a monthly average).

c. The air exiting the RTO's combustion chamber is maintained at a minimum temperature of 1400 °F.

[Construction Permit 1030234-001-AC and Rule 62-210.200(PTE), F.A.C.]

B.4. Restricted Operation: The hours of operation of are not limited (8,760 hours per year).
[Rule 62-210.200 (PTE), F.A.C.; Construction Permit 1030234-001-AC]

EMISSIONS STANDARDS

B.5. Emissions Standards: In order to provide reasonable assurance of proper operation and maintenance of the pollution control devices, visible emissions from the RTO shall not exceed 5% opacity.
[Rules 62-4.070(3) and 62-210.650, F.A.C.]

B.6. Mercury Emission Limitation: Mercury emissions from the sludge drying facility (exit of RTO) shall not exceed 3200 grams/24 hour period as specified in 40 CFR 61.52(b).
[40 CFR Part 61, Subpart E adopted by reference in Rule 62-204.800(10), F.A.C.; Construction Permit 1030234-001-AC]

TESTING REQUIREMENTS

B.7. Annual Compliance Tests: During each calendar year (January 1st to December 31st), the RTO exhaust from the emissions unit shall be tested to demonstrate compliance with the emissions standards for visible emissions.
[Rule 62-297.310(8)(a)1, F.A.C.; Construction Permit 1030234-001-AC]

B.8. Compliance Tests Prior to Renewal: Except as provided in subparagraph 62-297.310(8)(b)3., F.A.C. (see Appendix D – Common Testing Requirements), in addition to the annual compliance test specified above, compliance tests shall also be performed on the sludge drying train for mercury prior to obtaining a renewed operation permit to demonstrate compliance with the emission limits in Specific Conditions **B.5.** & **B.6**. If the test shows mercury emissions exceed 1600 g per 24-hour period, demonstrated either by stack sampling according to 40 CFR 61.53 or sludge sampling according to 40 CFR 61.54, the permittee shall monitor mercury emissions at intervals of at least once per year by use of EPA Method 105 or the procedures specified in 40 CFR 61.53(d)(2) and (4). The results of monitoring shall be reported and retained according to 40 CFR 61.53(d)(5) and (6) or 40 CFR 61.54(f) and (g).
[Rules 62-204.800(10) and 62-297.310(7), F.A.C.]

B.9. Test Requirements: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rule 62-297.310(9), F.A.C.]

B.10. Additional Testing Requirements: Odor emissions testing shall be conducted downstream of all airflows into the common 50 foot stack.
[Rules 62-297.310(2) and 62-297.310(7), F.A.C.]

B.11. Test Methods: Required tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
EPA Method 101A or EPA Method 105	Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators Determination of Mercury in Wastewater Treatment Plant Sewage Sludges
ASTM E679-04 or more recent version	Standard Practice for Determination of Odor and Taste Thresholds

The above methods are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C., and in the ASTM E679-04 Standard. No other methods may be used unless prior written approval is received from the Department.

[Rules 62-204.800, F.A.C.; and Appendix A of 40 CFR 60; and ASTM E679-04 Standard]

MONITORING REQUIREMENTS

B.12. Continuous Monitoring Requirements: The permittee shall continuously monitor and record the temperature of the RTO's combustion chamber.
[Rule 62-4.070(3), F.A.C.; Construction Permit 1030234-001-AC]

RECORDS AND REPORTS

B.13. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the following:

a. the normal operating parameters of air pollution control devices installed on the emission unit (e.g., pressure drop, scrubber liquid flow rate, scrubber liquid pressure, total current, etc.), and the operating parameters of air pollution control devices during each test run;

b. the hourly material input rate to the dryer during the test period;

c. the type of fuels used to fire the furnace during the test period;

d. the hourly total heat input rate to the furnace during the test period;

e. the hourly heat input rate to the RTO during the test period;

f. a copy of the RTO's continuous temperature monitor recording for the test day(s); and

g. a copy of the daily logs required by Specific Condition B.15., for the test day(s).

[Rules 62-4.070(3) and 62-297.310(8), F.A.C.; Construction Permit 1030234-001-AC]

B.14. Daily and Monthly Log for: The permittee shall at a minimum maintain the following logs/records at the facility when the applicable emission unit is operating:

DAILY

a. date and emission unit ID number;
b. total material input to the dryer, in tons;
c. total operating hours of the dryer;
d. daily average total material input rate to the dryer, in tons/hr.;
e. pressure drop across the baghouse controlling the recycle bin, 2 elevators, pellet cooler, and pneumatic conveying system;
f. scrubber liquid flow rate (gpm) for the venturi scrubber;
g. pressure drop across the venturi scrubber;

MONTHLY

h. month and emission unit ID number;
i. total amount of natural gas used in the furnace, in cubic feet;
j. total amount of digester gas used in the furnace, in cubic feet;
k. total operating hours of the dryer;
l. monthly average heat input rate to the furnace, in MMBtu/hr. based on the heat content of natural gas and digester gas;
m. total amount of natural gas used in the RTO, cubic feet;
n. total operating hours of the RTO; and
o. monthly average heat input rate to the RTO, in MMBTU/hr. based on the heat content of the natural gas.

[Rule 62-4.070(3), F.A.C.]

B.15. Operation and Maintenance (O & M) Plan for VOC, PM and Odor Control: For air pollution control devices and collection systems, the permittee shall maintain and implement an O & M Plan to include a schedule for the maintenance and inspection of each control device, collection systems, and auxiliary equipment. Records of inspections, maintenance, and performance data of control devices and auxiliary equipment shall be retained by the emissions unit for a minimum of two (2) years and shall be made available to the Compliance Authority upon request. The O & M Plans for the 96 AVR 32, Style III baghouse, Hydro Mist venturi scrubbing system, and the CECO regenerative thermal oxidizer were submitted previously (October 15, 2010). The plans may be modified with prior approval from the Compliance Authority. The performance parameters shall include operating rates and efficiencies. Such parameters and records shall include, at a minimum, that shown below.

a. The operating parameters.
b. Time table for the routine maintenance as specified by the manufacturer.
c. Time table of routine weekly, quarterly, semi-annual, and annual observations as described in the O&M Plan.
d. A list of the type and quantity of required spare parts, which are stored on the premises. Alternatively, should any part of a pollution control device fail that prevents the control device from operating properly and that part cannot be replaced using best operational practices, all processes

associated with that control device must be shut-down until the control device can be returned to its normal operational mode.

e. A record log, which will indicate at a minimum:

1. When maintenance and observations were performed;
2. What maintenance and observations were performed;
3. Who performed said maintenance and observations; Why the maintenance was performed; and
4. Parameter(s) for each operational check, to show within acceptable parameter range(s), if applicable.

[Pinellas County Code, Section 58-128]