



CMP/CAM PLAN

COMPLIANCE MONITORING PLAN/COMPLIANCE ASSURANCE MONITORING PLAN

Green Circle Bio Energy, Inc.
Cottondale Wood Pellet Plant
Jackson County, Florida

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1.0 INTRODUCTION

Green Circle Bio Energy, Inc. (Green Circle) owns and operates a wood pelletizing operation located south of Cottondale, Jackson County, Florida. The address of this facility is 2500 Green Circle Parkway, Cottondale, Florida. The Florida Department of Environmental Protection (FDEP) issued an Air Construction Permit (Permit No. 0630058-001-AC) to Green Circle for construction and initial operation of the facility. Permit No. 0630058-001-AC requires submittal of a Compliance Monitoring Plan (CMP) detailing the procedures that would be used to demonstrate compliance with the production and emission limits in the permit. The initial CMP was submitted to FDEP in July 2008.

The Department issued Green Circle's initial Title V Air Operation Permit (Permit No. 0630058-005-AV) on March 16, 2011. This permit incorporated the previous four Air Construction Permits issued by the Department:

- Air Construction Permit No. 0630058-001-AC authorized the initial construction of the facility.
- Air Construction Permit No. 0630058-002-AC authorized the installation of four new hammer mills (two each on Pelleting Line Nos. 1 and 3) in an effort to attain permitted production capacity.
- Air Construction Permit No. 0630058-003-AC authorized modification of the aspiration system servicing the hammer mills and pelletizers and clarified the averaging times used to demonstrate compliance with some of the specific permit conditions in Air Construction Permit No. 0630058-001-AC.
- Air Construction Permit No. 0630058-004-AC authorized installation and temporary operation of a horizontal hammer mill on Pelleting Line No. 3 to evaluate this technology.

Additionally, the initial Title V Air Operation Permit incorporated Air Construction Permit No. 0630058-006-AC, which established an annual pellet production limit of 554,304 tons per year (TPY) and a VOC emission factor of 0.639 pound of VOCs per ton of pellets produced.

The purpose of this air construction permit was to limit facility-wide VOC emissions to 226.2 TPY (sum of the permitted annual emission rates for the dryers and pelletizing lines of 49.1 TPY and 177.1 TPY, respectively), to allow the facility to remain a minor source (annual emissions less than 250 TPY) with regard to PSD regulations. This permit was processed by the Department concurrently with the initial Title V Air Operation Permit application.

A revised CMP was submitted to FDEP in support of the initial Title V Air Operation Permit application. Some sources at the facility are subject to the U.S. Environmental Protection Agency (EPA) Compliance Assurance Monitoring (CAM) regulations, codified as part of EPA's Clean Air Act, and located in Title 40, Part 64 of the Code of Federal Regulations (40 CFR 64). A CAM Plan was submitted to FDEP in support of Green Circle's initial Title V Air Operation Permit application.

Subsequent to issuance of the initial Title V Air Operation Permit and the concurrently processed associated Air Construction Permit, the Department has issued three additional Air Construction Permits.

Since issuance of the initial Title V Air Operation Permit, Green Circle has received Air Construction Permit Nos. 0630058-008-AC, 0630058-009-AC, and 0630058-010-AC. Air Construction Permit No. 0630058-008-AC authorized the construction of a new dry wood truck dump and two new pelletizers (one each on Pelleting Line Nos. 1 and 3), allowed the horizontal hammer mill allowed by Air Construction Permit No. 0630058-004-AC to operate continuously, and allowed the use of natural gas as fuel for the regenerative thermal oxidizer (RTO) combustion chambers.

Air Construction Permit No. 0630058-009-AC increased the railcar loading rate of the Bulk Load Out System to 88.8 tons per hour (TPH) (compliance determined on a daily average basis) to make it consistent with the pellet production rate allowed by Air Construction Permit No. 0630058-008-AC.

Air Construction Permit No. 0630058-010-AC increased annual pellet production to 610,000 TPY and modified a number of permit conditions associated with the methodologies used to demonstrate compliance.

Through this application, Green Circle is revising their Title V Air Operation Permit to incorporate these Air Construction Permits. This document includes the revised CMP and CAM Plan to support Green Circle's Title V Air Operation Permit revision application.

2.0 SOURCE DESCRIPTIONS AND PERMIT LIMITS

The facility receives raw pine logs or sawmill residuals (chips, sawdust, and shavings) and processes the wood into wood pellets to be sold as product. Green Circle is currently permitted for the following emissions units (production limits set by the air construction permit are included in parentheses):

- EU 001 Wood Fiber Receiving and Storage Area [180 incoming trucks per day (monthly average)]
- EU 002 Dryer Line No. 1 [maximum heat input rate of 125 million British thermal units per hour (MMBtu/hr) daily average]
- EU 003 Dryer Line No. 2 [maximum heat input rate of 125 MMBtu/hr (daily average)]
- EU 004 Pelletizing Line No. 1 (29.6 TPH pellets)
- EU 005 Pelletizing Line No. 2 (29.6 TPH pellets)
- EU 006 Pelletizing Line No. 3 (29.6 TPH pellets)
- EU 007 Pellet Load-out Area (88.8 TPH pellets)
- EU 008 Unregulated Emissions Unit – 2,000-gallon diesel storage tank

The current Title V Air Operation Permit, as modified by subsequent Air Construction Permits, includes the following emission limits:

- EU 002 – Dryer Line No. 1
 - Nitrogen oxides (NO_x) = 122.65 tons per year (TPY) (12-month rolling total)
 - Particulate matter (PM) = 0.2 pound per million British thermal units (lb/MMBtu) = 19.90 TPY (12-month rolling total)
 - Volatile Organic Compounds (VOCs) = 24.10 TPY (12-month rolling total)
- EU 003 – Dryer Line No. 2
 - NO_x = 122.65 TPY (12-month rolling total)
 - PM = 0.2 lb/MMBtu = 19.90 TPY (12-month rolling total)
 - VOC = 24.10 TPY (12-month rolling total)
- EU 004 – Pelletizing Line No. 1
 - PM = 58.5 TPY (12-month rolling total)
- EU 005 – Pelletizing Line No. 2
 - PM = 58.5 TPY (12-month rolling total)
- EU 006 – Pelletizing Line No. 3
 - PM = 62.1 TPY (12-month rolling total; includes the Horizontal Hammer Mill)
- EU 004, 005, 006 – Pelletizing Lines
 - VOC = 194.9 TPY (Total 12-month rolling total for all three lines)

Some sources at the facility are subject to CAM regulations. CAM regulations have been adopted by the state of Florida in Rule 62-204, Florida Administrative Code. The CAM rule is applicable to emission units, on a pollutant-by-pollutant basis, at major sources that meet the following criteria:

- The pre-control device emissions from the emission unit are greater than major source thresholds
- The emission unit is subject to emission limits or standards
- Pollution control equipment is used to meet emission limits or standards
- The emission unit is not subject to a post-1990 New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants for a given pollutant
- The control equipment is not inherent to the process

Green Circle has made the following conclusions regarding the various emission sources at the site with regard to CAM applicability:

- The wood fiber receiving and storage area (EU 001) does not have permitted emissions limits or a control device to achieve compliance. Therefore, the wood fiber receiving and storage area is not subject to CAM.
- Dryer Line Nos. 1 and 2 (EU 002 and EU 003) are subject to air emission limits for NO_x, PM, and VOC. The dryer lines are subject to CAM regulations as electrostatic precipitators (WESPs) and RTOs are used to achieve compliance with these permitted emission limits and without these control devices emission of these pollutants would be in excess of major source thresholds.
- Pelletizing Line Nos. 1, 2, and 3 (EU 004, EU 005, and EU 006) are subject to permitted emissions limits for PM and use control devices to achieve compliance with the permitted limits (fabric filters and cyclones). The pelletizing lines would be major source of PM emissions without these controls. The pelletizing lines are therefore subject to CAM for PM.
- The Pellet Load-out Area (EU 007) does not have a permitted emission limit to achieve compliance. Therefore, the pellet load-out area is not subject to CAM.

The facility has developed this CMP in anticipation of satisfying CAM requirements for PM, NO_x, and VOCs.

Green Circle performed emissions stack testing during initial operations to establish correlations between monitored and recorded control parameters and stack emission rates. Data collected during stack testing was used to support the use of specific control parameters, control parameter ranges, and recordkeeping procedures as indicators of compliance with permitted emissions limits. The following sections describe compliance monitoring procedures established following initial stack testing. In addition, general operating condition restrictions/limitations, as described in the most recent Title V Air Operation Permit or as modified in subsequent Air Construction Permits, are addressed in the following sections.

A summary of the compliance monitoring parameters is included as Table 1.

3.0 COMPLIANCE MONITORING PLAN PARAMETERS

3.1 Wood Fiber Receiving and Storage Area

Wood fiber (pulpwood logs or sawmill residuals) is unloaded and stored on-site. Logs are chipped and stored. The bark is hammer-milled, screened, and stored as fuel supply. All trucks entering the facility and carrying a delivery of wood fiber must be weighed on scales located at the facility scale house. Scale house personnel will maintain daily, monthly, and year-to-date records of the number of trucks that enter the facility. The current Title V Air Operation Permit limits the number of incoming trucks to 180 per day on a monthly average basis, which is equivalent to 5,400 trucks per month for a 30-day month. To provide sufficient notification, the scale house personnel will notify the Wood Yard Manager if the number of trucks entering the facility for a given month exceeds 5,000 so that appropriate measures can be taken. Maintenance of these records is a requirement of the CMP and not subject to CAM.

The facility will maintain the paved and unpaved roads at the facility in good working condition. Precautions will be taken by the facility to prevent emissions of unconfined PM, including the application of water or other dust suppressants to the roads when necessary. Any actions to suppress dust being generated by the unpaved roads will be documented and recorded.

In the unlikely event that the quantity of bark in the bark storage pile becomes low, the facility will receive bark from outside sources to replenish the fuel supply. Sources of fuel will include the hog fuel (chips and bark) from local chip-n-saw mills and the like only. No treated lumber will be accepted. No municipal yard waste will be accepted.

3.2 Dryer Lines

Two rotary drum dryers (EU 002 and EU 003) are used to reduce the moisture content of the wood chips to approximately 9 percent in preparation for grinding and pelletizing. Heat for the dryers is provided by two 125-MMBtu/hr bark-fired furnaces. High-humidity exhaust gases from the dryers are returned to the secondary combustion chamber of the bark fuel combustors to temper the combustion within the chamber and control the generation of NO_x. Gases from the combustion chamber are drawn through a 6,900 pound per hour (lb/hr) steam generator. Up to 50 percent of the dryer gases leaving the dryer are re-circulated to the dryer inlet. The remaining gases are directed to a WESP for PM emissions control and an RTO to control VOC emissions.

The WESP inlet gases are quenched with a recirculating water system. Gas exiting the WESP is routed to the RTO, where exhaust gas VOC emissions are reduced by 95 percent. Natural gas or propane is used as a supplemental fuel to maintain RTO efficiency.

Exhaust gas from each RTO is vented to the atmosphere through a stack (one stack for each RTO). Each dryer includes two additional stacks used during bypass operations. Bypass operations include

periods during startup and during process malfunctions. Bypass operations during malfunctions are limited in the Air Construction Permit to 50 hours per year (hr/yr) for each dryer bypass stack and each furnace bypass stack. The permit allows the bypass stack for each furnace to operate for 1,500 hours in "idle mode," which is defined as operation up to a maximum heat input rate of 5 MMBtu/hr. If at any time during normal operations the exhaust gases to either RTO are routed to a bypass stack, the facility records the reason for the bypass conditions; the period of time when the bypass stack was used; in the case of the furnace stack, the operating mode (malfunction or idle); and the corrective action performed, if applicable.

As indicated in the Air Construction Permit, the facility is required to demonstrate compliance with PM, VOC, and NO_x emission limits established for the facility dryer lines (Dryer Nos. 1 and 2).

3.2.1 *Dryer Heat Input Rate*

Air Construction Permit 0630058-010-AC requires Green Circle to record the heat input of each dryer line. As previously indicated, each dryer line is limited to a heat input of 125 MMBtu/hr, averaged over a 24-hour period. Using an average heating value for southern yellow pine of 4,600 British thermal units per pound (Btu/lb) of fuel, as specified by FDEP, this heat input rate equates to approximately 13.6 TPH of bark fuel. In order to demonstrate compliance, the facility monitors and records the fuel delivery parameters as specified in the following paragraph.

Each of the bark fuel combustors, manufactured by Teaford, has a hydraulic ram feeder that pushes the bark fuel into the furnace. Each "stroke" of the hydraulic ram equals approximately 20 cubic feet (cf) of bark fuel. The weight of the fuel delivered to each combustor was calculated using an estimation of the bulk density for green southern yellow pine bark and chips. For the purpose of this report, bulk density calculations of the fuel supply are based on a bulk density of wood waste/bark of 11 pounds per cubic foot (lb/cf).

The number of strokes of the hydraulic ram needed to attain the maximum permitted heat input rate to the dryers of 125 MMBtu/hr is calculated as follows:

$$\begin{aligned}\text{Strokes per hour} &= 125 \text{ MMBtu/hr} / 4,600 \text{ Btu/lb} / 528.6 \text{ lb/stroke} \\ &= 51 \text{ strokes per hour}\end{aligned}$$

The facility monitors the number of strokes of the hydraulic ram feeder per hour and determines an average hourly heat input rate for each day by multiplying the number of strokes by 20 cf per stroke, by the density of 11 lb/cf, and by the heat content of the bark of 4,600 Btu/lb) and dividing by the number of hours the dryer operated during the day.

CMP requirements are summarized in Table 1.

3.2.2 Wet Electrostatic Precipitators

In an electrostatic precipitator (ESP), electric fields are established by applying a direct-current voltage across a pair of electrodes: a discharge electrode and a collection electrode. PM suspended in the gas stream is electrically charged by passing through the electric field around each discharge electrode (the negatively charged electrode). The negatively charged particles then migrate toward the positively charged collection electrodes (collection plates). The PM is separated from the gas stream by retention on the collection plates. The WESP control device uses a quench water spray to cool and saturate dryer exhaust gases prior to their entry into the electrical fields of the WESP. As particles accumulate on the collector plates of the WESP, the plates are cleaned by a spray of water.

The primary indicators of WESP performance include opacity, secondary voltage, secondary current, and secondary corona power. Other indicators of WESP performance include the spark rate, primary current, primary voltage, inlet gas temperature, gas flow rate, inlet water flow rate, solids content of flush water, and field operations.

The secondary voltage on the collector plates drops when a malfunction, such as grounded electrodes, occurs in the WESP. When the secondary voltage drops, fewer particles are charged and collected. Also, the secondary voltage can remain high but fail to perform its function if the collection plates are not cleaned. If the collection plates are not cleaned, the current drops. Since power is the product of voltage and current, monitoring the power input will provide a reasonable assurance that the WESP is functioning properly. The manufacturer of the WESP provided the following secondary voltage and current design parameters.

- Minimum secondary voltage (24-hour average): 30 kilovolts (kV)
- Minimum secondary current (24-hour average): 250 milliamps (mA)

The values for these parameters were verified during initial compliance testing. During normal drying operations, Green Circle monitors the secondary voltage and secondary current. The monitoring system consists of a voltmeter and an ammeter, parts of the WESP instrumentation.

For the WESP to operate within design parameters, the gas stream needs to be cooled in order for some of the pollutants to condense. High quench inlet temperatures can indicate the quench water spray prior to the electrostatic field is not functioning as designed. In addition, high WESP outlet temperatures can indicate that the gas stream has not been sufficiently saturated to provide for efficient particle removal. High outlet temperatures could be the result of plugged nozzles, malfunctioning pumps, or broken or plugged piping.

The manufacturer of the WESP provided the following WESP inlet and outlet quench temperatures:

- Maximum inlet quench temperature: 210 degrees Fahrenheit (°F)
- Maximum outlet quench temperature: 210°F

The values for these parameters were verified during initial compliance testing. Green Circle measures the WESP quench inlet temperature and the WESP outlet temperature to demonstrate continuous operation of the WESP in accordance with design parameters.

The WESP parameters specified above will be monitored to satisfy both CMP and CAM requirements. The CMP requirements are summarized in Table 1. CAM requirements are summarized in Table 2.

3.2.3 Regenerative Thermal Oxidizer

The facility RTO is used to control VOC emissions in the dryer exhaust gas streams by combusting emissions to carbon dioxide (CO₂) and water. Important design factors of the RTO include maintaining high enough temperatures within the RTO to ignite the organic constituents of the exhaust gas stream, residence time to allow the combustion reaction to occur, and turbulence or mixing of the combustion air with the exhaust gas stream. The rate at which VOCs are oxidized is affected by temperature; the higher the temperature, the faster the oxidation reaction proceeds. Thermal destruction of most organics occurs at combustion temperatures between 800°F and 2,000°F.

For VOC control, the primary indicators of RTO performance include the outlet VOC concentration and outlet or combustion chamber temperature. Other indicators include the outlet carbon monoxide (CO) concentration, outlet CO₂ concentration, outlet oxygen concentration, exhaust gas flow rate, and auxiliary fuel line pressure.

From normal drying operations, Green Circle established a minimum combustion chamber temperature of 1,440°F. Green Circle verified this minimum temperature during initial compliance testing. The monitoring system consists of a thermocouple device installed in the thermal oxidizer chamber as part of the RTO instrumentation. A second thermocouple device will verify accuracy of the primary thermocouple.

In addition, it is necessary to ensure a proper residence time to allow temperatures within the RTO to ignite the organic constituents of the exhaust gas stream. The RTO manufacturer's design residence time in the combustion chamber is approximately 1.39 seconds at the design gas flow rate. Each of the two RTO combustion chambers is approximately 3,377 cf in volume. The design gas flow rate through the RTO is approximately 92,797 actual cubic feet per minute (acfm) at 176°F. Fan speed and back pressure are monitored to demonstrate that this exhaust flow is not exceeded and chamber residence time is maintained.

The RTO parameters specified above will be monitored to satisfy both CMP and CAM requirements. The CMP requirements are summarized in Table 1. The CAM requirements are summarized in Table 3.

3.2.4 Nitrogen Oxide Emissions Control

As previously stated, up to 50 percent of the exhaust gases from the dryers are returned to the secondary combustion chamber of the bark fuel combustor, tempering the combustion and controlling the generation

of NO_x. During initial stack emissions testing, Green Circle intends to collect data to demonstrate the effectiveness of this process, and to make a correlation between actual NO_x emissions from the RTO exhaust stacks and the heat input rate, in pounds of NO_x emissions per ton of wood combusted in the furnace. Emission factors will be used to account for NO_x emissions during malfunction and idle mode use of the bypass stacks.

To demonstrate compliance with annual emission limits, the Green Circle records the monthly heat input rate of each furnace and the monthly chip production. Using the NO_x emission factor developed during initial compliance testing, 0.331 lb NO_x per ton of dry chips (approximately 9 percent moisture, by weight) and the appropriate emission factors for malfunction and idle mode operation, Green Circle calculates a monthly NO_x emissions rate and adds it to the previous 11 months' emissions for comparison to the annual emission limit.

Demonstrating compliance with the permitted NO_x emission limit is a CMP-only requirement since neither the WESP nor the RTO are used to control NO_x emissions. CMP requirements are summarized in Table 1.

3.2.5 Bypass Stacks

As previously discussed, the bypass stacks are used during periods of startup and during process malfunctions. The number of hours the bypass stacks can be used are limited by the current Title V Air Operation Permit to 50 hours for malfunction operation of the dryer and furnace bypass stack and 1,500 hours of operation for the furnace bypass stack during idle mode.

Green Circle monitors the use of the bypass stacks and records the reason for the bypass conditions, the period of time and duration when the bypass stack was used, the operating mode during the time the bypass stack was operating, and the corrective action performed, if applicable.

Monitoring the use of the bypass stacks is a CMP-requirement only. CMP requirements are summarized in Table 1.

3.3 Pelletizing Lines

Dry wood chips (approximately 9 percent moisture, by weight), stored in the Grinding Storage Bin, are conveyed to the Grinding Building along three incline conveyors. From the incline conveyors, the wood chips are metered to three grinding infeed conveyors that feed the three hammer mill lines. The aspiration systems for these infeed conveyors consisting of spot filters mounted directly on the conveyors were removed as part of the facility modifications allowed by Air Construction Permit No. 0630058-010-AC. The three conveyors exiting the hammer mill lines each have separate aspiration systems to remove excess moisture and separate dust collectors. These three outfeed conveyors transport the ground wood to the three Pelletizing Storage Bins.

Three incline conveyors are used to transport ground wood from the Pelleting Storage Bins to the Pelleting Building. From the incline conveyors, the ground wood is transferred to three conveyors that feed the three Pelletizing Lines. The aspiration systems for these infeed conveyors, consisting of spot filters mounted directly on the conveyors, were removed as part of the facility modifications allowed by Air Construction Permit No. 0630058-010-AC. Three conveyors are used to transport the pellets from the Pelletizing Lines to a bucket elevator. Each bucket elevator is used to transfer the pellets to the top of a counter current flow Pellet Cooler. PM emissions from each cooler are controlled by two parallel high-efficiency cyclones. From the Pellet Coolers, the flows of pellets merge and are fed to a single bucket elevator and vibrating screen. From the vibrating screens the pellets are transferred to the railcar loading system.

3.3.1 Production Quantities

Total pellet production from Pelletizing Line Nos. 1, 2, and 3 are limited in Air Construction Permit No. 0630058-010-AC to 88.8 TPH (daily average). Each pellet line consists of five pellet mills (15 total pellet mills). Green Circle will demonstrate compliance with this production limit by recording the weight of pellets loaded into railcars as recorded at the bulk load-out system and dividing it by the number of hours the pellet mills were operated during the day.

Monitoring of the production limit is a CMP requirement. CMP requirements are summarized in Table 1.

3.3.2 Aspiration Dust Collectors

The best indicators of fabric filter performance are the outlet PM concentration and a filter leak detection system. Other indicators include the pressure differential across each filter, the inlet temperature, and the exhaust gas flow rate.

To demonstrate the dust collectors are operating properly, Green Circle monitors the differential pressure across each unit using magnehelic gauges. Although the manufacturers were able to provide a range of pressure differentials for normal operation of their dust collectors when handling dry products, their experience when handling wet products, as is the case for the aspiration systems, is limited. Accordingly, it was necessary for Green Circle to use their operational experience to supplement the information provided by the manufacturers of the dust collectors to establish acceptable pressure differential ranges. This information is summarized in Table 1. Green Circle confirmed that the pressure differential ranges presented in Table 1 were suitable during initial compliance testing.

During normal operations, Green Circle measures and records the pressure differential across the dust collectors once per shift. A reading below the lower end of the range may indicate a malfunction of the filter system (broken bag) or a decrease in filter permeability. A reading in excess of the upper end of the range indicates the filter bags need to be either cleaned or changed. Green Circle has established action

values requiring inspection of the dust collectors when the pressure differential is observed within 1 millibar of either the minimum or maximum compliance values.

Monitoring of the pressure differential of these dust collectors is both a CMP and CAM requirement. CMP requirements are summarized in Table 1. CAM requirements for the dust collectors associated with the hammer mills and pellet mills are summarized in Tables 4 and 5, respectively.

3.3.3 Pellet Cooler High-Efficiency Cyclones

The exhaust from the coolers is routed to two high-efficiency cyclones for each line. Cyclone control efficiency is a function of the inlet velocity. As the velocity within the cyclone increases, the inertial forces acting on particles in the gas stream increase, separating the particles from the stream. As the particles impact the cyclone walls, they are collected in a hopper or storage bin. As velocity increases, turbulence forms within the gas stream and disrupts gas flow.

For the cyclones, Green Circle established an acceptable pressure differential range of 1 to 4 inches of water (in. H₂O), based on operational experience and manufacturer's recommendations. This information is included in Table 1.

The pressure differential across the cyclones is primarily a function of the inlet velocity. During normal operations, Green Circle measures and records the pressure differential across the inlet and outlet of each cyclone. Any measurement outside of the established range will indicate potential inefficiency in the cyclone system in removing PM from the exhaust gas stream.

Green Circle has established action values requiring inspection of the cyclones if the observed pressure differential for the cyclones is less than 1.5 in. H₂O or above 3.5 in. H₂O as summarized in Table 1.

The monitoring of the pressure differential across the cyclones is both a CMP and CAM requirement. The CMP requirements are summarized in Table 1. The CAM requirements are summarized in Table 6.

3.3.4 Volatile Organic Compound Emissions

Green Circle established an emission factor for VOCs for the pelletizing lines of 0.639 lb of VOC emissions per ton of pellets produced during the initial compliance testing. This factor is used to calculate monthly VOC emissions, which will be added to the previous 11 months' emissions for comparison to the emission limit of 194.9 TPY on a rolling 12-month total basis.

As there is no VOC control equipment associated with the pelletizing lines, this is a CMP-only requirement. CMP requirements are summarized in Table 1.

3.4 Bulk Load-Out Area

Pellets are transported to two sets of storage bins, each set with a capacity of 94 tons, and located above the rail car loading area. The bins provide up to approximately 2 hours of pellet storage and uniformly meter the pellets out for rail car loading. The pellet conveyors are sealed and equipped with continuous air aspiration for dust control. All aspirated air is drawn through dust filters that are designed with an air-to-cloth ratio less than 15 actual cubic feet per minute per square foot (acfm/sf).

3.4.1 Production Quantities

The maximum rate of pellets processed by the Load-Out Area is limited in by Air Construction Permit No. 0630058-009-AC to 88.8 TPH (24-hour average). The load-out area is equipped with two load-out lines; each line is equipped with four storage bins. In addition, each line includes a scale. One line at a time will receive pellets for load-out. Once the four bins are filled, the load-out equipment switches to the second line and starts filling the second four bins. The filled bins are weighed before discharging into the rail car. Once the weight has been recorded, the scales are reset to zero. Green Circle records the weight of each load-out bin and at the end of the day will compute an hourly average to ensure compliance with the conditions of the permit.

This is a CMP-only requirement, as pre-control emissions from the Bulk Load-Out System are not in excess of major source thresholds, and therefore, are not subject to CAM. CMP requirements are summarized in Table 1.

TABLES

TABLE 1
COMPLIANCE MONITORING PLAN SUMMARY
GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
001	Wood Fiber Receiving and Storage Area	A.1.	The maximum allowable process rate is 180 incoming trucks per day on a rolling monthly average to be calculated monthly.	NA	Record number of trucks entering the facility.	5,400 trucks per month (180 trucks per day multiplied by 30 days per month) on a daily average basis	5,000 trucks per month recorded at gate.	Front gate notifies the Wood Yard Manager that allowable number of trucks is being approached.	
002	Dryer Line No. 1	B.2.	The maximum operation capacity for each Dryer Line combustor shall not exceed 125 MMBtu/hr heat input averaged over a 24-hour period.	NA	Number of strokes of hydraulic ram feeder to combustor.	51 strokes/hr on a daily average basis.	51 strokes on an hourly basis.	Operations Manager notified that continued operation at or above this rate may exceed allowable heat input limit of 125 MMBtu calculated on a daily average basis.	Based on 4,600 Btu per pound of wood and 2.43 MMBtu/stroke as determined during compliance testing. Compliance is demonstrated when the result of dividing the daily number of strokes by 24 hours is less than or equal to 51 strokes.
		B.7.	NO _x emissions in each Dryer Line shall not exceed 122.65 tons per 12-month rolling total.	N	Monthly chip production, hours of the operation of the bypass stacks at full capacity and in idle mode.	12-month rolling total NO _x emission rate of 122.65 TPY or less (see comment).	12-month rolling total NO _x emission rate in excess of 100 TPY (see comment).	Operations Manager notified that 12-month rolling total NO _x emissions are approaching permit limit.	In accordance with Rule 62-210.370, F.A.C., a NO _x emissions factor of 0.331 lb NO _x per ton of wood chips was developed from stack test results at normal operating mode. Each month, the weight of wood chips produced from the dryer will be calculated by subtracting the weight of dry shavings used to produce wood pellets from the weight of wood pellets produced as measured at the railcar loadout and half this result (assuming each dryer produced half the wood chips) multiplied by the emission factor with adjustments for moisture content, as necessary. For malfunction modes, the emission factors 26.3 lb/hr for the Dryer Bypass Stack Operation, and 0.22 lb/MMBtu furnace bypass stack operation (while operating at either full capacity or in idle mode), as presented in the permit application, will be used. Compliance is demonstrated when annual NO _x emissions on a 12-month rolling total basis from the RTO stack, Dryer Bypass Stack, and the Furnace Bypass Stack, at each operating mode, are 122.65 tons, or less.
		B.8.	PM emissions from each Dryer Line shall not exceed 0.1 lb/MMBtu or 19.9 TPY on a 12-month rolling total calculated monthly.	Y	Stack testing to demonstrate compliance with 0.1 lb/MMBtu limit. WESP Secondary voltage, secondary current, and quench inlet and outlet temperature.	Secondary Voltage: minimum of 30 kV (1-hr avg.) Secondary Current: minimum of 250 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 210°F Quench Outlet Temperature: Maximum of 210°F	Secondary Voltage: minimum of 40 kV (1-hr avg.) Secondary Current: minimum of 325 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 200°F Quench Outlet Temperature: Maximum of 200°F	Operations Manager notified that WESP operating parameters are approaching design limits for proper operation. Should consider increased unit flushing, cleaning, and inspection of the flow line.	Compliance demonstrated when indicated parameters are within the specified ranges.
		B.9.	VOC emissions from each Dryer Line shall not exceed 24.10 TPY per 12-month rolling total.	Y	Temperature of RTO chamber, flow rate through the RTO chamber (fan speed), back pressure, and residence time.	Temperature: Minimum of 1,440°F (when operating); Fan Speed: ≤99% with corresponding back pressure of less than 10 inches of water (1-hour average).	Temperature: Minimum of 1,475°F (when operating); Fan Speed: ≤95% with corresponding back pressure of less than 8 inches of water (1-hour average).	Operations Manager notified that RTO operating parameters are approaching design limits for proper operation. Should consider checking the quench water flow, RTO fan speed, propane supply, dryer recirculation rate and the thermocouple used to measure quench water temperature.	The RTO is designed for 1.39 second residence time at 100% fan speed. At stated fan speeds, back pressures in excess of those presented can indicate plugging of RTO chambers and require investigation. Compliance is demonstrated when the temperature of the RTO chamber is greater than 1,440°F, the fan speed and corresponding back pressures are within the specified parameters, which indicate the minimum residence time is met.
		B.14.	Excess emissions resulting from startup, shutdown, or malfunctions, using the Dryer Line and furnace bypass stacks shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed 2 hours in any 24-hour period, nor exceed 50 hours per 12-month rolling total for each Dryer Line.	N	Number of hours of operation where dryer and furnace bypass stacks are utilized, and for the furnace, whether the bypass stack is being used during malfunction or idle mode operation.	Dryer Bypass Stack: 50 hours Furnace Bypass Stack (malfunction): 50 hours Furnace Bypass Stack (idle mode): 1,500 hours	Dryer Bypass Stack: 12-month rolling total exceeds 40 hours Furnace Bypass Stack (malfunction): 12-month rolling total exceeds 40 hours Furnace Bypass Stack (idle mode): 12-month rolling total exceeds 1,400 hours	Operations Manager notified that permit limits are being approached for operation of the bypass stacks.	Compliance is demonstrated when the dryer bypass stack are used 50 hours or less on a 12-month rolling total basis, and the furnace bypass stack are used no more than 50 hours at full capacity, or no more than 1,500 hours in idle mode.



TABLE 1
COMPLIANCE MONITORING PLAN SUMMARY
GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
003	Dryer Line No. 2	B.2.	The maximum operation capacity for each Dryer Line combustor shall not exceed 125 MMBtu/hr heat input averaged over a 24-hour period.	NA	Number of strokes of hydraulic ram feeder to combustor.	51 strokes/hr on a daily average basis.	51 strokes on an hourly basis.	Operations Manager notified that continued operation at or above this rate may exceed allowable heat input limit of 125 MMBtu calculated on a daily average basis.	Based on 4,600 Btu per pound of wood and 2.43 MMBtu/stroke as determined during compliance testing. Compliance is demonstrated when the result of dividing the daily number of strokes by 24 hours is less than or equal to 51 strokes.
		B.7.	NO _x emissions in each Dryer Line shall not exceed 122.65 tons per 12-month rolling total.	N	Monthly chip production, hours of the operation of the bypass stacks at full capacity and in idle mode.	12-month rolling total NO _x emission rate of 122.65 TPY or less (see comment).	12-month rolling total NO _x emission rate in excess of 100 TPY (see comment).	Operations Manager notified that 12-month rolling total NO _x emissions are approaching permit limit.	In accordance with Rule 62-210.370, F.A.C., a NO _x emissions factor of 0.331 lb NO _x per ton of wood chips was developed from stack test results at normal operating mode. Each month, the weight of wood chips produced from the dryer will be calculated by subtracting the weight of dry shavings used to produce wood pellets from the weight of wood pellets produced as measured at the railcar loadout and half this result (assuming each dryer produced half the wood chips) multiplied by the emission factor with adjustments for moisture content, as necessary. For malfunction modes, the emission factors 26.3 lb/hr for the Dryer Bypass Stack Operation, and 0.22 lb/MMBtu furnace bypass stack operation (while operating at either full capacity or in idle mode), as presented in the permit application, will be used. Compliance is demonstrated when annual NO _x emissions on a 12-month rolling total basis from the RTO stack, Dryer Bypass Stack, and the Furnace Bypass Stack, at each operating mode, are 122.65 tons, or less.
		B.8.	PM emission from each Dryer Line shall not exceed 0.1 lb/MMBtu or 19.9 TPY on a 12-month rolling total calculated monthly.	Y	Stack testing to demonstrate compliance with 0.1 lb/MMBtu limit. WESP Secondary voltage, secondary current, and quench inlet and outlet temperature.	Secondary Voltage: minimum of 30 kV (1-hr avg.) Secondary Current: minimum of 250 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 210°F Quench Outlet Temperature: Maximum of 210°F	Secondary Voltage: minimum of 40 kV (1-hr avg.) Secondary Current: minimum of 325 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 200°F Quench Outlet Temperature: Maximum of 200°F	Operations Manager notified that WESP operating parameters are approaching design limits for proper operation. Should consider increased unit flushing, cleaning, and inspection of the flow line.	Compliance demonstrated when indicated parameters are within the specified ranges.
		B.9.	VOC emissions from each Dryer Line shall not exceed 24.10 TPY per 12-month rolling total.	Y	Temperature of RTO chamber, flow rate through the RTO chamber (fan speed), back pressure, and residence time.	Temperature: Minimum of 1,440°F (when operating); Fan Speed: ≤99% with corresponding back pressure of less than 10 inches of water (1-hour average).	Temperature: Minimum of 1,475°F (when operating); Fan Speed: ≤95% with corresponding back pressure of less than 8 inches of water (1-hour average).	Operations Manager notified that RTO operating parameters are approaching design limits for proper operation. Should consider checking the quench water flow, RTO fan speed, propane supply, dryer recirculation rate and the thermocouple used to measure quench water temperature.	The RTO is designed for 1.39 second residence time at 100% fan speed. At stated fan speeds, back pressures in excess of those presented can indicate plugging of RTO chambers and require investigation. Compliance is demonstrated when the temperature of the RTO chamber is greater than 1,440°F, the fan speed and corresponding back pressures are within the specified parameters, which indicate the minimum residence time is met.
		B.14.	Excess emissions resulting from startup, shutdown, or malfunctions, using the Dryer Line and furnace bypass stacks shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed 2 hours in any 24-hour period, nor exceed 50 hours per 12-month rolling total for each Dryer Line.	N	Number of hours of operation where dryer and furnace bypass stacks are utilized, and for the furnace, whether the bypass stack is being used during malfunction or idle mode operation.	Dryer Bypass Stack: 50 hours Furnace Bypass Stack (malfunction): 50 hours Furnace Bypass Stack (idle mode): 1,500 hours	Dryer Bypass Stack: 12-month rolling total exceeds 40 hours Furnace Bypass Stack (malfunction): 12-month rolling total exceeds 40 hours Furnace Bypass Stack (idle mode): 12-month rolling total exceeds 1,400 hours	Operations Manager notified that daily production limits are being approached.	Compliance is demonstrated when the dryer bypass stack are used 50 hours or less on a 12-month rolling total basis, and the furnace bypass stack are used no more than 50 hours at full capacity, or no more than 1,500 hours in idle mode.

TABLE 1
COMPLIANCE MONITORING PLAN SUMMARY
GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
004	Pellet Line No. 1	C.1.	The maximum pellet production process rate for all three pellet lines is 88.8 tons per hour on a 24-hour average basis calculated daily.	NA	The daily average hour pellet production rate for all three pellet lines as measured at the bulk load out system.	Total pellet production rate for all three pellet lines of 88.8 tons per hour on a 24-hour average basis calculated daily.	Total hourly pellet production rate for all three pellet lines of 88.8 tons per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	
		C.3.	PM emissions from Pellet Line No. 1 shall not exceed 58.5 TPY based on a 12-month rolling total.	Y	Monitor pressure differential, for the Grinding Aspiration System dust collector, for the Pelleting Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System dust collector, and for the twin cyclones.	Grinding Aspiration System dust collector - 1.0 to 10.0 mb Pelleting Outfeed Conveyor Aspiration System dust collector - 0.5 to 6.0 mb Cyclones - 1.0 to 4.0 inches of water	Grinding Aspiration System dust collector - 2.0 to 9.0 mb Pelleting Outfeed Conveyor Aspiration System dust collector - 1.5 to 5.0 mb Cyclones - 1.5 to 3.5 inches of water	Operations Manager notified that dust collectors and/or cyclones are approaching design limits for proper operation.	Compliance values based on vendor design information for proper operation of the control device. Compliance is demonstrated when pressure differentials are measured within the range specified.
		C.5.	VOC emissions from all three pellet lines shall not exceed 194.9 TPY on a 12-month rolling total basis.	N	Monthly pellet production.	Total pellet production of all three pellet lines of 610,000 TPY on a 12-month rolling total basis.	Total pellet production of all three pellet lines of 600,000 TPY on a 12-month rolling total basis.	Operations Manager notified that annual production limits are being approached.	An emission factor of 0.639 pounds of VOCs per ton of pellets produced was determined during stack testing. Compliance will be demonstrated when annual VOC emissions are calculated by multiplying the monthly number of tons of pellets produced by the established emission factor and the result added to the previous total for the previous 12 months and the 12-month rolling total is 194.9 tons or less.
005	Pellet Line No. 2	C.1.	The maximum pellet production process rate for all three pellet lines is 88.8 tons per hour on a 24-hour average basis calculated daily.	NA	The daily average hour pellet production rate for all three pellet lines as measured at the bulk load out system.	Total pellet production rate for all three pellet lines of 88.8 tons per hour on a 24-hour average basis calculated daily.	Total hourly pellet production rate for all three pellet lines of 88.8 tons per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	
		C.3.	PM emissions from Pellet Line No. 2 shall not exceed 58.5 TPY based on a 12-month rolling total.	Y	Monitor pressure differential, for the Grinding Aspiration System dust collector, for the Pelleting Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System dust collector, and for the twin cyclones.	Grinding Aspiration System dust collector - 1.0 to 10.0 mb Pelleting Outfeed Conveyor Aspiration System dust collector - 0.5 to 6.0 mb Cyclones - 1.0 to 4.0 inches of water	Grinding Aspiration System dust collector - 2.0 to 9.0 mb Pelleting Outfeed Conveyor Aspiration System dust collector - 1.5 to 5.0 mb Cyclones - 1.5 to 3.5 inches of water	Operations Manager notified that dust collectors and/or cyclones are approaching design limits for proper operation.	Compliance values based on vendor design information for proper operation of the control device. Compliance is demonstrated when pressure differentials are measured within the range specified.
		C.5.	VOC emissions from all three pellet lines shall not exceed 194.9 TPY on a 12-month rolling total basis.	N	Monthly pellet production.	Total pellet production of all three pellet lines of 610,000 TPY on a 12-month rolling total basis.	Total pellet production of all three pellet lines of 600,000 TPY on a 12-month rolling total basis.	Operations Manager notified that annual production limits are being approached.	An emission factor of 0.639 pounds of VOCs per ton of pellets produced was determined during stack testing. Compliance will be demonstrated when annual VOC emissions are calculated by multiplying the monthly number of tons of pellets produced by the established emission factor and the result added to the previous total for the previous 12 months and the 12-month rolling total is 194.9 tons or less.

TABLE 1
COMPLIANCE MONITORING PLAN SUMMARY
GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
006	Pellet Line No. 3	C.1.	The maximum pellet production process rate for all three pellet lines is 88.8 tons per hour on a 24-hour average basis calculated daily.	NA	The daily average hour pellet production rate for all three pellet lines as measured at the bulk load out system.	Total pellet production rate for all three pellet lines of 88.8 tons per hour on a 24-hour average basis calculated daily.	Total hourly pellet production rate for all three pellet lines of 88.8 tons per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	
		C.3.	PM emissions from Pellet Line No. 3 shall not exceed 62.1 TPY based on a 12-month rolling total.	Y	Monitor pressure differential, for the Grinding Aspiration System dust collector, for the Pelleting Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System dust collector, for the twin cyclones, and for the horizontal hammer mill.	Grinding Aspiration System dust collector - 1.0 to 10.0 mb Pelleting Outfeed Conveyor Aspiration System dust collector - 0.5 to 6.0 mb Cyclones - 1.0 to 4.0 inches of water Horizontal Hammer Mill - 2.0 to 8.0 mb	Grinding Aspiration System dust collector - 2.0 to 9.0 mb Pelleting Outfeed Conveyor Aspiration System dust collector - 1.5 to 5.0 mb Cyclones - 1.5 to 3.5 inches of water Horizontal Hammer Mill - 3.0 to 7.0 mb	Operations Manager notified that dust collectors and/or cyclones are approaching design limits for proper operation.	Compliance values based on vendor design information for proper operation of the control device. Compliance is demonstrated when pressure differentials are measured within the range specified.
		C.5.	VOC emissions from all three pellet lines shall not exceed 194.9 TPY on a 12-month rolling total basis.	N	Monthly pellet production.	Total pellet production of all three pellet lines of 610,000 TPY on a 12-month rolling total basis.	Total pellet production of all three pellet lines of 600,000 TPY on a 12-month rolling total basis.	Operations Manager notified that annual production limits are being approached.	An emission factor of 0.639 pounds of VOCs per ton of pellets produced was determined during stack testing. Compliance will be demonstrated when annual VOC emissions are calculated by multiplying the monthly number of tons of pellets produced by the established emission factor and the result added to the previous total for the previous 12 months and the 12-month rolling total is 194.9 tons or less.
007	Bulk Load-Out Area	D.1.	The maximum process rate for bulk load out is 88.8 tons of pellets per hour on a daily average basis.	N	Weight of each load-out storage bin discharge, and record cumulative amount each day.	Total pellet production for all three pellet lines of 88.8 TPH on a 24-hour average basis calculated daily.	Total pellet production rate for all three pellet lines of 88.8 TPH.	Operations Manager notified that continued operation at this rate will exceed the permitted daily production limit of 88.8 TPH on a 24-hour average basis calculated daily.	Compliance is demonstrated when the result of dividing the daily amount of pellets loaded by 24 hours is 88.8 tons or less.

NA = not applicable.

Table 2 - Wet Electrostatic Precipitator				
	Indicator No. 1	Indicator No. 2	Indicator No. 3	Indicator No. 4
Indicator	Secondary Voltage.	Secondary Current.	Quench Air Inlet Temperature.	Quench Air Outlet Temperature.
Measurement Approach	Continuous measurement of secondary voltage.	Continuous measurement of secondary current.	Continuous measurement of the quench air inlet temperature.	Continuous measurement of the quench air outlet temperature.
Indicator Range	An excursion is defined as an average measured secondary voltage for the three chambers of less than 30 kilovolts (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as an average measured secondary current of less than 250 milliamps (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as a measured air temperature greater than 210 deg. F (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as a measured air temperature greater than 210 deg. F (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The secondary voltage is measured using a volt meter.	The secondary current is measured using an amp meter	The inlet quench air temperature is measured with a thermocouple.	The outlet quench air temperature is measured with a thermocouple.
Verification of Operational Status	NA	NA	NA	NA
QA/QC Practices and Criteria	Confirm the volt meter reads zero when the unit is not operating. Calibrate unit annually.	Confirm the amp meter reads zero when the unit is not operating. Calibrate unit annually.	Calibrate the thermocouple unit annually.	Calibrate the thermocouple unit annually.
Monitoring Frequency	The voltage will be measured every 5 seconds.	The current will be measured every 5 seconds.	The temperature will be measured every 5 seconds.	The temperature will be measured every 5 seconds.
Data Collection Procedures	Hourly averages are computed for each chamber from readings every hour and then averaged together.	Hourly averages are computed for each chamber from readings every hour and then averaged together.	Hourly averages are computed from readings every hour.	Hourly averages are computed from readings every hour.
Averaging Period	1-hour block average.	1-hour block average.	1-hour block average.	1-hour block average.

Table 3 - Regenerative Thermal Oxidizer		
	Indicator No. 1	Indicator No. 2
Indicator	Combustion Chamber Temperature.	Fan Speed
Measurement Approach	Continuous measurement of the combustion chamber temperature.	Continuous measurement of fan speed as a percent (1-hr avg.) with a corresponding measurement of back pressure as an indicator that the proper residence time for the RTO of 1.39 seconds is maintained by not exceeding the design air flow.
Indicator Range	An excursion is defined as an average temperature for the four combustion chambers of less than 1,440 deg. F (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as a measured fan speed greater than 99% (1-hr avg.) with a corresponding back pressure of less than 10 inches of water (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The combustion chamber temperature is measured with a thermocouple.	The frequency of the variable frequency drive of the fan is measured, where 60 hertz is equivalent to 100% fan speed. The back pressure the RTO is also simultaneously measured with a pressure transmitter as a back pressure greater than 10 inches of water, could incorrectly indicate that the fan is operating at >99%, but in actuality the fan is unable to overcome the back pressure to pull sufficient air through the RTO to result in a drop in residence time.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	Calibrate the thermocouple unit annually.	Calibrate the variable frequency drive and pressure transmitter annually.
Monitoring Frequency	The temperature is measured every 5 seconds.	The fan capacity will be measured every 5 seconds.
Data Collection Procedures	Measure temperature continually recorded hourly.	1-hour averages are computed from readings every hour.
Averaging Period	1-hour block average.	1-hour block average.

Table 4 - Grinding Aspiration System Dust Collector	
	Indicator No. 1
Indicator	Pressure Differential
Measurement Approach	Once per shift measurement of the dust collector pressure differential.
Indicator Range	An excursion is defined as a measured pressure differential outside the range of 1.0 to 10.0 millibars. Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The pressure differential is measured by a magnehelic.
Verification of Operational Status	NA
QA/QC Practices and Criteria	Verify magnehelic unit reads zero when not operating and calibrate the magnehelic annually.
Monitoring Frequency	The pressure differential is measured once per shift.
Data Collection Procedures	The pressure differential is recorded once per shift.
Averaging Period	No averaging period.

Table 5 - Pelleting Outfeed Conveyor/Cooler Bucket Elevator Aspiration System Dust Collector	
	Indicator No. 1
Indicator	Pressure Differential
Measurement Approach	Once per shift measurement of the dust collector pressure differential.
Indicator Range	An excursion is defined as a measured pressure differential outside the range of 0.5 to 6.0 millibars. Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The pressure differential is measured by a magnehelic.
Verification of Operational Status	NA
QA/QC Practices and Criteria	Verify magnehelic unit reads zero when not operating and calibrate the magnehelic annually.
Monitoring Frequency	The pressure differential is measured once per shift.
Data Collection Procedures	The pressure differential is recorded once per shift.
Averaging Period	No averaging period.

Table 6 - Twin Cyclones	
	Indicator No. 1
Indicator	Pressure Differential
Measurement Approach	Once per shift measurement of the cyclone pressure differential.
Indicator Range	An excursion is defined as a measured pressure differential outside the range of 1.0 to 4.0 inches of water. Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The pressure differential is measured by a magnehelic.
Verification of Operational Status	NA
QA/QC Practices and Criteria	Verify magnehelic unit reads zero when not operating and calibrate the magnehelic annually.
Monitoring Frequency	The pressure differential is measured once per shift.
Data Collection Procedures	The pressure differential is recorded once per shift.
Averaging Period	No averaging period.