A. Project Overview

Since 1999 Oliveira Enterprises, Inc. (Oliveira) has operated a green material composting business on a 50-acre site located off of Bruns Road, south of Byron in the Unincorporated portion of Contra Costa County. The facility is not open to the public and does not accept unscheduled deliveries. The facility accepts source-separated green material from customers that it hauls from as well as some commercial accounts that deliver contracted green material. Oliveira's unique processing method involves allowing cattle to feed on the green waste prior to processing it into compost. Once the cattle are done, the remaining material is processed using a standard windrow composting method. The resulting compost is sold to local horticultural and agricultural uses.

B. Project Location and Access

The site is located at 124 & 136 Bethany Lane, off of Bruns Road, just south of Byron Highway. Vehicles access the site via either northbound or southbound Bruns Road and turn onto Bethany Lane and proceed via internal company roads. Most of the feedstock delivery vehicles are Oliveira's own trucks. These trucks contain an average of 32 cubic yards of material. At full capacity (2,500 cubic yards) there would be approximately 78 trucks accessing the site. At the same time, an average of 30 vehicles removing finished compost will also be accessing the site. In addition there may be as many as 30 vehicles per day including employees, deliveries, regulatory visits, etc. So total traffic at the site, at full capacity is estimated at 138 vehicles per day.

C. Surrounding Land Use

The surrounding land use is dominated by open, undeveloped grazing land. The Byron-Bethany Irrigation District (BBID) operates an administration office to the west. A canal feeding the Clifton Court Forebay (a key part of the State Water Project) runs to the west and north of the site. A smaller canal (operated by BBID) encircles the site on the north, east and south. To the east of the composting facility is open, undeveloped grazing and agricultural land. To the south is also largely undeveloped grazing and agricultural land. To the west is the undeveloped grazing and agricultural lands interrupted by the larger canal.

The majority of the adjacent properties are zoned for agriculture. The properties owned by BBID, and the canals, are zoned for public, semi-public use.

D. Days and Hours of Operation

Because the facility operates a trucking operation in addition to the composting business, the business functions 24 hours per day/7 days per week. The administration of the facility is operated from 6:00 am to 4:00 pm, Monday through Saturday. The facility is not open to the public and does not accept unscheduled deliveries. Customers do not access the facility (for compost) until 7:00 am. Customers are pre-approved wholesale buyers of compost, mulch, or other products.

E. Permits and Approvals

Several permits and approvals govern the design and operation of the composting facility. These include:

1. Forthcoming approval from Contra Costa County, Department of Conservation and Development (DCD).

2. Forthcoming CEQA analysis from Contra Costa County Department of Conservation and Development (DCD).

3. Solid Waste Facility Permit, Contra Costa County Environmental Health Division. (in Process)

4. Compliance with SWRCB General Order, Technical Report, April 2021

5. Contra Costa County Integrated Waste Management Plan, Non Disposal Facility Element, Amendment #__, <Month> 20__.

Section 2
REPORT OF COMPOSTING SITE INFORMATION

14CCR, Section 18227 contains the requirements for the Report of Composting Site Information (RCSI). The information in this RCSI describes the design and operation of Oliveira Enterprises, Inc., a green material composting facility.

A. Process Description

(a) A description of the processes to be used, including estimated quantities of feedstocks, additives, and amendments.

Oliveira Enterprises, Inc. (Oliveira) uses a turned windrow method of composting. Ninety percent of all feedstocks received are hauled by Oliveira via company-owned roll off trucks. Remaining feedstocks are delivered by select commercial haulers. Customers include commercial landscaping companies throughout the Bay Area and Central Valley.

Oliveira uses a unique pre-processing system, which includes feeding a portion of incoming green waste to cattle. The company also raises cattle on adjacent properties. Because the feedstock is used for cattle feed, all materials are carefully inspected for cleanliness at the generator's location. There can be no more than 1% of trash, sod, cement, pressure-treated lumber, or dirt.

The facility is being permitted for a maximum (peak daily flow) of 2,500 cubic yards per day of incoming feedstocks. In practice daily incoming flows will be lower than this, but this volume will allow for seasonal fluctuations. The capacity of the site (in total material on-site at any one time) is estimated at 182,000 cubic yards. Calculations and assumptions documenting the capacity to manage this volume is contained in Table 2-4, (Appendix A). Market choices, management intensity, pile heights, and retention times can affect capacity significantly.

B. Descriptive Statement of Operations

(b) A descriptive statement of the operations conducted at the facility.

Delivery vehicles enter the site from either northbound or southbound Bruns Road and then access Bethany Lane and proceed via internal site roads. Much of the feedstock is collected by Oliveira's trucking business and customers are trained and educated as to what is and is not acceptable in the bins. The facility does not have a scale, but charges incoming customers based on the hauling cost plus the volume of material (based on truck size). The average delivery is approximately 32 cubic yards. At the maximum, peak flow of 2,500 cubic yards per day, the facility would have approximately 78 trucks per day accessing the site delivering feedstock. The site also accommodates employee vehicles and trucks delivering finished compost off-site. These truck trips are estimated at 30 trucks per day removing finished products and 30 vehicles per day for

employees and deliveries. Thus, on a peak day the site might need to accommodate 138 vehicle trips per day. The site is not open to the public, nor does it accept unscheduled deliveries.

Load Checking. All the feedstocks processed by Oliveira are source-separated, thereby greatly reducing the possibilities of major amounts of contaminants. All loads are given a visual load check when they are first collected at the site of the generator. Loads are further evaluated as they are dumped at the site and inspected by Oliveira staff.

Any contaminants identified while unloading the incoming materials are removed manually and disposed of on-site in 40 cubic yard roll-off bins that are emptied at a minimum of once per week, or more frequently as necessary. All loads of non-processables are delivered to a permitted solid waste disposal facility (typically the Fink Road Landfill).

Title 14 §17868.5 (a)(1) describes green material processing requirements and requires that incoming green material feedstocks undergo load checking to ensure that physical contaminants are no greater than 1.0 percent of total weight:

> *"A minimum of ten percent of daily incoming feedstock volume or at least one truck per day, whichever is greater, shall be inspected visually. If a visual load check indicates a physical contamination level greater than 1.0 percent, a representative sample shall be taken, physical contaminants shall be collected and weighed, and the percentage of physical contaminants determined. The load shall be rejected if physical contaminants are greater than 1.0 percent of total weight or if the load contains materials that do not meet the definitions of green material in section 17852(a)(21) or vegetative food material in section 17852(a)(20)(A)."*

Contaminants in the green material feedstock may not exceed one percent of the incoming green material received on a given operating day. Oliveira complies with this requirement by removing and segregating all contaminants from the incoming green material loads.

Unprocessed Material Receiving. Unprocessed green materials are delivered to the Cattle Feeding and Receiving Area (2.3 acres). The dimensions of the Cattle Feeding and Receiving Area are listed in Table 2-3. Capacity calculations are shown in Table 2-4 (Appendix A).

Cattle Feeding. The unloaded green materials are spread out so that the cattle can have access to the materials. The cattle typically spend 24 to 48 hours consuming delivered green material. Although it is not measured, it is estimated that the cattle consume 50 - 70% of the incoming green materials. The dimensions of the Cattle Feeding and Receiving Area are listed in Table 2-3 (Appendix A). Capacity calculations are shown in Table 2-4. (Appendix A).

Green Material Processing Area. Once the cattle have consumed what they will, the material is pushed up into a stockpile for grinding. Materials are unloaded in the processing area. A large grinder is used to size reduce the materials. Grinding of the feedstock reduces the volume of material and provides a uniform mixture of material and particle size. Ground materials are loaded directly into windrows for composting. The dimensions of the Green Material Processing Area are listed in Table 2-3 (Appendix A). Capacity calculations are shown in Table 2-4 (Appendix A).

In the event of an equipment breakdown or other unforeseeable circumstance that would prevent the processing of green waste within 72 hours, material may be stockpiled for no more than seven days. If the site cannot process (i.e., grind) feedstock within the required time frame, the material will be transferred to another facility for composting or beneficial reuse, or ither permitted facility. It is more likely however, in the event of a breakdown of both grinders, the facility would rent a replacement grinder of similar capacity from nearby contractors while repairs were being made.

Composting Area

The entire Oliveira property is approximately 50 acres, the compost manufacturing area comprises approximately 30 acres. Following chipping and grinding, the readied compost feedstock will be a uniform mixture. The initial density of the compost mix is assumed to be 0.35-0.45 tons per cubic yard. Water will be added to the material initially, as necessary, to achieve the targeted moisture content of between 40-60%. The actual amount of water added will vary seasonally, but will be maintained within an acceptable range (40-60%). The moisture content levels will be monitored daily. Typically Oliveira measures moisture content using the squeeze test to estimate moisture.

Windrow Composting. Historically the facility has used a simple windrow composting method. Processed material is placed into windrows and water is added via a water truck. Rows of processed green material may be as large as 10 feet high and 20 feet wide at the base, at least initially (windrows generally shrink as the composting process proceeds). The material is turned as needed using a specialized windrow turner. Windrow length depends on the physical limitations of the site, but will not extend beyond a maximum of 750 feet long.

The material will compost in the windrows for an eight to 12-week period. The compost would then mature in curing piles for a minimum length of at least four weeks. The mechanically turned windrows could hold compost for up to 6 months depending on the inflow rate and storage capacity. If residence time in a windrow exceeded 6 months, the compost would be screened and the finished compost stockpiled for testing and eventual off-site sale. The residual compost "overs" are stockpiled for a maximum of six months (especially if it is to be applied to adjacent

agricultural fields) and then removed to an approved disposal facility for beneficial reuse as ADC, or applied to agricultural land for beneficial reuse.

All compost will complete the two-step Process to Further Reduce Pathogens (PFRP). Once temperatures in the windrows have exceeded 131° F, temperatures are documented in the pathogen reduction log. At least one temperature reading is taken per 150 feet of windrow. After 3 daily consecutive temperature readings of above 131° F, the piles are turned. This process continues until the pile has been turned 5 times, while continuing to exceed 131° F for a minimum 15 day period (because of weekends, the PFRP process may take 19 or more consecutive days). The second step in the PFRP process involves taking a random and representative sample of compost per 5,000 cubic yards for laboratory analysis. The lab test will verify that the time/temperature process described above, resulted in pathogen indicator organisms below the regulated threshold (Please refer to the discussion on Monitoring and Testing, below).

Aerated Static Pile Composting. If required by regulatory agencies, Oliveira may develop the capacity to compost some (or all) of its feedstock via an Aerated Static Pile (ASP) composting system. ASP composting is fundamentally similar to the existing windrow system, except instead of periodically turning a windrow to re-establish porosity for natural convection, an ASP system uses fans to introduce oxygen to the piles of composting material.

The ASP system, while not designed, if needed, will likely be a relatively simple, positively-aerated, pipe-on-grade system. If ASP composting is implemented, it is likely to provide a "first stage" of composting, followed by windrow composting (described above) for additional composting and/or curing. The use of an ASP system would decrease compost residence time, so would not require any more space than is currently occupied by compost windrows.

The area where the ASP would be located would be compacted (with soil and/or gravel) as necessary to support the system. The ASP system would be a simple, pipe-on-grade system with small electrical fans providing periodic aeration to a series of horizontal, perforated HDPE pipes. Prepared feedstocks would be placed on top of the HDPE pipes. Once placed, the fans would provide aeration to the piles using a simple control system based on temperature feedback. The fans would be protected by low concrete blocks. The fans would be electrically-powered. The capacity of the ASP system will be calculated when it is designed, but it will include a modular approach so that it can be expanded as necessary. Aeration rates will be calculated to provide sufficient aeration to meet process and regulatory agency goals. The facility will place a "cap" of unscreened finished compost on top of each newly constructed ASP pile to serve as an insulating biolayer. The "cap" serves a number of purposes. It provides an insulating layer to help assure completion of the PFRP process (see below). It has also been shown to reduce VOC emissions

when properly moisturized and placed above ASP piles[1]. After a prescribed period of time (typically 21 to 30 days), the ASP piles would be broken down and the material would be moved to the windrow area for further composting and/or curing.

ASP achieves pathogen reduction in a shorter timeframe. ASPs are required to hold the pile temperature at or above 131° F for three days and there is no turning. It is assumed that there is an insulating layer on top to help assure that the mass of compost is exposed to three days at or above 131° F. If Oliveira develops an ASP system, it is likely that PFRP will be achieved and documented in the ASP piles and not in the windrows, though the windrows will also likely regularly achieve temperatures in excess of 131° F.

ASP piles are typically 8 feet high or less. Pipe spacing is generally equal to ½ the height of the piles. Individual piles may also be "extended" such that each lateral pile touches its immediate neighbor and so on, forming somewhat of a mass bed, though piles will still be managed individually. Pipe length is generally less than 80 feet. Implementing an ASP system will increase the capacity of the facility, by reducing material retention time, thus, it will not require any additional space.

Curing Area. After composting (whether windrow, ASP or a mix of the two technologies) is complete and the piles have achieved PFRP in accordance with 14 CCR regulations, the piles are broken down and moved into curing piles. Curing piles allow for the compost to further mature and increase in quality after pathogen reduction is complete in the active phase. To allow for final product stabilization and maturation, the compost will typically stay in the curing piles for a minimum of four weeks and a maximum of 3 months. The duration in curing allows for adequate time for the final stabilization and maturation of the compost to occur resulting in a consistent, high quality compost product. The end-use of the compost will dictate the necessary degree of maturation of the material (e.g., some end-users do not require a fully mature product).

The curing piles are constructed to a maximum height of up to 15 feet and from 15 to 30 feet wide. To be clear, for the purposes of estimating site capacity (in Table 2-4, Appendix A) piles were assumed to be 10 feet. However, in practice, piles may be as high as 15 feet, as the curing material has a lower oxygen demand as the windrows and/or ASP piles. The length of the piles will depend on the available space but are typically less than 300 feet long.

Curing piles are constructed using a loader and to ensure highly compacted "dead zones" are not created. It is common for temperatures to increase when first placed in the curing pile as air is reintroduced to the system. This aids in further maturation of the material.

[1] "*Green Waste Compost Emissions Reductions from Solar-powered Aeration and Biofilter*", SJVAPCD May 2013.

A minimum spacing of 15 feet between curing piles will be maintained to allow for fire department access (unless otherwise dictated by the fire department). If temperatures are above 170˚F during monitoring, corrective action measures will be used to lower and manage temperatures to an acceptable level.

Monitoring and Testing. The goal of the composting operation is to prepare useable, marketable compost end products. To assure the quality of the end products, several quality control and process monitoring procedures are be conducted.

Materials in different stages of the composting process (feedstock, active, curing, and finished) will be stored separately to avoid potential cross-contamination between materials that have and have not completed PFRP.

The Facility will submit a composite sample for laboratory analysis for pathogen reduction, metal concentrations, and physical contamination per Sections 17868.1, 17868.2, and 17868.3. These are summarized in Table 2-1 (Appendix A). Per Article 7, Section 17868.1, one representative and random composite sample will be collected per 5,000 cubic yards of compost produced and sent to a state certified laboratory for analysis. Analytical limits are shown in Table 2-2 (Appendix A).

Oliveira will follow the required sampling protocol from Title 14 (§17868.1) when collecting samples for lab analysis:

> "A composite sample shall be representative and random, and may be obtained by taking twelve (12) mixed samples as described below.
> (1) The twelve samples shall be of equal volume.
> (2) The twelve samples shall be extracted from within the compost pile as follows:
> (A) Four samples from one-half the width of the pile, each at a different cross-section;
> (B) Four samples from one-fourth the width of the pile, each at a different cross-section; and,
> (C) Four samples from one-eighth the width of the pile, each at a different cross-section."

Maximum acceptable pathogen concentrations will be confirmed through analysis for density of fecal coliform and density of *Salmonella sp*. bacteria. The density of fecal coliform in compost shall be less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight basis), and the density of *Salmonella sp*. bacteria in compost shall be less than three MPN per four grams of total solids (dry weight basis).

Compost will not be removed from the facility until after test results are received confirming the materials have met the maximum acceptable metal concentrations the pathogen reduction requirements, and the physical contamination requirements. If materials do not meet these requirements it shall be designated for additional processing, disposal, or other use as approved.

Table 2-2 (Appendix A) summarizes required analytical testing. Finished compost is tested in accordance with the requirements of 14 CFR §17868.2,17868.3, and §17868.3.1. Copies of all test results and monitoring activities are kept at the facility's administration office for inspection by the LEA and other regulatory agencies. Additional monitoring will be provided in compliance with Title 14 requirements and as required by the LEA.

Windrow temperatures are monitored daily during the pathogen reduction period (§17868.3(c)). At least one temperature reading will be taken per every 150 feet of windrow. A minimum stabilized temperature of not less than 55° Celsius (131° Fahrenheit) is maintained for a minimum of 15 consecutive days. Hand-held temperature probes are used to monitor temperatures. A composite sample of the finished compost product will be taken per every 5,000 cubic yards produced to ensure it meets the maximum acceptable metal concentration limits specified in California Code of Regulations (CCR) Title 14, Section 17868.2, pathogen reduction requirements specified in CCR title 14, Section 17858.3., and the physical contaminants limits specified in CCR Title 14 Section 17868.3.1

Pathogen Reduction/Metals/Physical Contamination Sampling

In the event that any future analysis of pathogen indicators, heavy metals, or physical contaminants returns a result in excess of regulated limits, Oliveira will follow the following protocol:

1. The material will be retained on-site, the LEA will be informed, and a new, random, composite sample will be taken and submitted for analysis to confirm the previous results.
2. If a resample and/or a re-test continues to return elevated pathogen, metals, or physical contaminant numbers, an investigation will be initiated to determine the cause and mitigation measures would be developed.
3. During the investigation, the parent material that was sampled will be isolated pending the results of the analysis.
4. If the re-sample confirms numbers in excess of regulated limits the facility will, in consultation with the LEA, either:
    a. Compost the material in an active windrow (following the traditional time/temperature relationship described above) to ensure pathogen reduction; and then re-test the material to ensure that it is now within regulatory limits prior to sale or use, or, if not:

b. Find an approved use for the material such as use as alternative landfill cover; or

c. Arrange for permitted disposal of the material.

In the event that compost windrows do not remain at or above 131° F for the 15 days/5 turns as required by Section 17868.3, the operator will inform the LEA and either extend the pathogen reduction process until the temperature requirements are met or will re-form the windrows and repeat the pathogen reduction process, ensuring that the requirements of Section 17868.3 are met.

C. Facility Layout and Dimensions

(c) A schematic drawing of the facility showing layout and general dimensions of all processes utilized in the production of compost including, but not limited to, unloading, storage, processing, parking, and unloading areas.

A Site Location Map is included in Appendix C as Figure 1. Figure 2 shows the property boundaries and surrounding land uses. A detailed Site Plan is included in Appendix C as Figure 3. Figure 4 shows general traffic flow. The Site Plans show key dimensions of the site, the access roads, and two "Composting Areas". These areas will accommodate windrows, aerated static piles, or a combination of both. Table 2.3 summarizes dimensions of the various processing locations (please see Appendix A). There are approximately 9.8 acres of available compost processing area. Ample parking for all employees and visitors is available in the truck parking and office area. Incoming green material is unloaded at the Cattle Feeding and Unloading Area.

D. Nuisance and Public Health Controls

(d) A description of the proposed methods used to control leachate, litter, odors, dust, rodents, and insects, for example, how the operator will store, process and incorporate food material and vegetative food material into windrows or static piles, timeframes for inclusion of material, collection and containment of leachate, passive and active vector controls, methods to monitor effectiveness of control measures.

Leachate Control. Leachate (free liquid emanating from within the composting piles or from stored feedstock) may occur during wet periods or if the piles have been saturated with moisture. Watering the piles only enough to provide adequate moisture within the compost piles minimizes leachate creation. Composting uses a lot of water, so it is likely that there will be few times when there is too much water present in the windrows, the opposite is usually true. Limiting moisture addition to the storage piles to just enough for dust control will also minimize leachate. Contact with the public is minimized since the site is not open to the public and does not accept unscheduled deliveries. If any piles are found to be generating leachate, free liquid will be absorbed with chipped green material, scooped up and added to the appropriate pile. Watering schedules

will be adjusted accordingly to minimize added water. The site is graded and designed so that all water on the site flows to the stormwater retention pond (See Figure 3, Appendix c.)

Litter Control. Because the Facility only accepts pre-screened, source-separated feedstocks, litter generation at the site is minimal. Litter control measures built-in to facility design include:

- Minimization of acceptance of litter-rich feedstocks.
- Daily patrolling of aisles, processing areas, access roads, and the site perimeter to remove accumulated litter.
- Daily patrolling of those areas where litter fencing has been installed [the facility will install litter fencing (and/or redundant fencing) in areas where it is deemed necessary in consultation with the LEA].
- Adjacent properties will be patrolled daily to check for blowing litter. Any accumulated litter will be removed and placed in a bin for eventual disposal at a permitted facility.

Odor Control. The facility has developed and maintains a site-specific Odor Impact Minimization Plan (OIMP) for the compost operation. The OIMP is maintained at the Facility Administration office. The OIMP contains site-specific management practices and standard operating procedures for minimizing off-site odors from the compost facility. The current OIMP is contained in Appendix D. OIMP activities include daily on and off-site patrolling/monitoring for odors from the site, preventing odorous materials from entering the site, preventing anaerobic conditions, removing material in a timely manner, and following Best Management Practices for composting.

Dust Control. Potential dust emissions from the facility are from the grinding, screening, and windrow turning, loading and unloading of trucks, and from road traffic. The facility access roads are watered several times daily as needed to minimize dust. The windrows are watered to maintain adequate moisture content. Two 3,500-gallon water trucks also provide dust control at the site. Dust from incoming vehicles will be minimized by periodic watering of on-site roads and aisles. Material screening is scheduled with the intent to minimize dust creation and dispersal. Oliveira monitors weather conditions and uses these to guide daily operations. To further control dust, Oliveira suspends all material handling activities when wind speeds consistently exceed 15 miles per hour (or gusts are in excess of 25 miles per hour). The primary means of dust control is the water trucks, which patrol the site daily during processing operations. Water is primarily sprayed on roads, but will also be sprayed on the grinder or on the windrows during turning. Additional dust control measures will be developed if warranted.

Noise Control. Noise is controlled through the proper use and maintenance of mufflers on equipment, both stationary and mobile. The largest source of noise on-site is the grinder. The nearest residence is approximately one-half mile from the grinder. The grinder noise will attenuate over distance and is also buffered by large piles of stockpiled organic materials.

Vector Control. Vectors, such as birds, rodents, and insects, have not posed significant problems to date at the facility. However, standing water from the water truck could become a fly or mosquito attractant. Any standing water will be absorbed using processed green material as an absorbent. Over-watering will be minimized to reduce the possibility of standing water. Water in the stormwater retention pond will be monitored for fly and mosquito activity. If the pond attracts vectors, Oliveira will contract with a pest control company to provide mitigations. It is expected that water from the pond will be used for dust control and process water early in the composting process (ahead of PFRP). It is further expected that the pond will be dry most of the year.

Pathogenic Organisms/Bioaerosols. *Aspergillus Fumigatus* is the most common bioaerosol associated with composting operations, though it is commonly found in many situations. Existing research on *Aspergillus Fumigatus* has established that it is a ubiquitous fungus to which people are exposed on a regular basis without causing illness or disease. The former CIWMB issued an LEA Advisory entitled "*Aspergillus, Aspergillosis, and Composting Operations in California"* (LEA Advisory No. 6, December 16, 1993). This technical bulletin addressed many of the commonly asked questions about *Aspergillus Fumigatus* and potential health effects, as well as presented the best management practices (BMPs) for composting operations to reduce the potential for exposure and distribution of *Aspergillus* spores.

Subsequent to that report, the California Department of Health Services, Division of Environmental and Occupational Disease Control, Environmental Health Investigations Branch prepared a report called *"Bioaerosols and Green Waste Composting in California",* (June, 1999). This report concluded that "No significant new or insightful information concerning the relationship of *Aspergillus Fumigatus* to health effects has been published since Technical Bulletin No.1, "*Aspergillus, Aspergillosis, and Composting Operations in California*". The report clarified the earlier findings and provided more up-to-date citations. The report concluded that healthy individuals are at minimal risk for infection from *Aspergillus,* regardless of exposure, and individuals with lung damage are susceptible to *Aspergillus* infection from any source, not specifically from composting.

In general, minimizing dust reduces the potential for *Aspergillus* transport. Oliveira does the following to minimize dust transport:

- Regular watering of roads, alleyways and pile surfaces.

- Maintaining adequate moisture in the compost piles.
- Monitoring of wind patterns prior to and during screening and turning operations.

Hazards. The Oliveira facility is not open to the public nor does it accept unscheduled deliveries. This reduces the inherent hazard potential of the site significantly. The General Manager ensures that all personnel assigned to a given operation are trained in required operations and maintenance and the identification of physical contaminants. At least one employee will be trained in hazardous waste identification. Employees are trained for operations surrounding free ranging cattle. Employees are further trained in basic OSHA safety measures, these include:

- Minimizing risks
- Personnel safety (use of appropriate safety clothing and protective gear)
- Proper operations and maintenance of equipment
- Overall site safety

Nuisances. Vectors, odors, dust, litter, and noise could all potentially contribute to nuisance conditions. However, each of these areas is addressed by the preceding text. Oliveira seeks to minimize the nuisance potential in each of these areas and is committed to working with the LEA and other agencies to assure no nuisances are created.

Fire Prevention, Protection, and Control. The main potential fire hazard within the compost operation are large, dry, piles of incoming material. Large, dry piles of screened overs are also a concern. Surface fires (fires which start and spread on the exterior surface of materials and remain exposed) are another hazard. Surface fires could potentially be started by lightning strikes, sparks from welding equipment, sparks or heat from operating equipment which ignite oil or dust particles, and wildfire. However the biggest concern for a fire at the facility is via spontaneous combustion. Spontaneous combustion can occur when a pile of organic material is generating more biological heat then it can dissipate.

Oliveira employs a number of Best Management Practices to reduce the potential for fires at the facility. These include:

Design/Structural Considerations

- Providing sufficient space to avoid exceeding the fire-safe height of piles [maximum of 12 feet for active windrow piles (Per Table 2-4, pile capacity was estimated using 10 feet, but piles may be as high as 12 feet), curing piles may be higher];

- Providing access to piles for firefighting equipment (15-foot wide lanes minimum between curing pile rows);

- Providing space to spread piles out. The current screening area between the curing pile and active pile areas provides additional open space if necessary;

- A minimum of 2 front end loaders will be available for use in moving and spreading out stored material for firefighting (though the facility currently has 5 front end loaders and in the event of a large fire, all would likely be used for fire-fighting; and

Operational/Management Practices

- Avoid active windrow pile heights greater than 12 feet (curing piles may be as high as 15 feet), and monitor for vents in deep piles. Use these vents to monitor internal pile temperatures if they develop;

- Visually inspect the piles for signs of hot spots. Indicators include evidence of vents, fissures, wet spots, and fissures of steam;

- Locate the hot spot before it turns into a fire. Seek out the hottest spot in the pile during routine temperature monitoring in the active piles. If there is a suspected hotspot in a curing pile, utilize a temperature probe to monitor and identify suspected hot spot.

- Monitoring internal temperature of piles during the active phase (fire potential if greater than 170˚ F for corrective action);

- Pile temperatures should be reduced by decreasing the pile height if storage pile temperatures reach greater than 170˚ F. Corrective actions shall be noted in the facility Operations log.

- Precautionary measures will be taken, as necessary, by personnel prior to breaking into an overly hot pile to avoid potential of a fire.

In addition, the Oliveira facility implements a variety of fire prevention, protection, and control measures at the facility, these include:

1. Incoming green materials are processed within 7 days of receipt (after they have been browsed by the cattle). This relatively quick turnaround time minimizes their potential to spontaneously combust.
2. The facility has two 3,500-gallon water trucks which are on-site at all times to provide fire-fighting assistance.
3. Windrow temperatures are monitored daily during the high-temperature pathogen reduction phase and all compostable material stockpiles will be monitored and prevented from exceeding 170° F. Although the windrows are not the most likely place for spontaneous combustion to occur, if staff notices temperatures above 170° F, they will notify management who will take steps to lower the temperature. Although turning may immediately lower the temperature (and that may be the first course of action), ultimately if the piles, as built are routinely reaching temperatures above 170° F, they will need to be built lower so that the generated heat is able to dissipate before building up.
4. All access roads are at least 25 feet wide, providing adequate access for fire control equipment.
5. The grinder is cleaned after every shift and any accumulated material is cleaned away.
6. Fire extinguishers are maintained on all major pieces of equipment, by all fuel tanks, and in the Shop.

E. Equipment Breakdown or Power Failure

(e) A description of the proposed emergency provisions for equipment breakdown or power failure.

The critical material handling equipment (loaders) is diesel-powered, so they are not subject to power failure. Depending on the expected length of the outage (i.e., if it was predicted to be longer than a 24-hour outage) Oliveira can rent grinders and screens as needed from locally-based contractors. In the event of equipment breakdowns, Oliveira can rent equipment from nearby contractors.

In the event of an equipment breakdown or other unforeseeable circumstance that would prevent the processing of green waste within 48 hours, material may be stockpiled for no more than seven days. If the site cannot process (i.e., grind) feedstock within the required time frame, the material will be transferred to another facility for composting or beneficial reuse, or landfilled, as appropriate and approved. However, it is likely, in the event of a major grinder breakdown, Oliveira would arrange for a replacement grinder either through nearby contractors, equipment vendors, or from nearby facilities.

F. Storage Capacity

(f) A description of the storage capacity, feedstock pile sizes, and anticipated maximum and average length of time compostable materials will be stored at the facility.

Compost is stored at the facility for up to 180 days, depending on market conditions. Using average pile sizes, (windrows 10 feet high and 20 feet at the base) calculations of site capacity were created [in practice, especially at the beginning of the process, windrows may be as high as 15 feet, thus the calculations in Table 2-4 (Appendix A) are somewhat conservative]. Dimensions for all processing and receiving areas are shown in Table 2-3 (Appendix A), Storage capacities of each area are listed in Table 2-4 (Appendix A). Figures 3 & 4 (Appendix C) also shows designated areas for incoming feedstock and storage of finished compost.

The maximum amount of material that can be received per day is not limited by the size of the receiving area. Oliveira controls a large percentage of the material that is delivered and could re-schedule/re-route deliveries if for some reason the site was receiving an unusual peak flow of deliveries. The annual site capacity is approximately 728,771cubic yards (182,193 x average retention time of 90-days) (see Table 2-4, Appendix A). The approximate amount of volume that could be stored at any one time is approximately 182,193 cubic yards, but that volume could be "turned" approximately 4 times assuming an average retention time of 90 days.

G. Facility Equipment

(g) A description of compostable materials handling equipment used at the facility including type, capacity, and number of units.

Processing equipment to be used for the Facility is shown in Table 2-5 (Appendix A).

H. Annual Site Capacity

(h) Anticipated annual operation capacity for the facility in cubic yards.

Storage capacity for each discrete processing area is shown in Table 2-4 (Appendix A). The facility expects to have the capacity to produce up to 500,000 cubic yards of finished organic products annually. Actual capacity will fluctuate based on market conditions, management intensity, availability of equipment, etc. Not all of this will be stored at the facility at any one time, feedstocks come in daily and finished compost products (both fines and overs) also go out every day.

I. Unusual Peak Loads

(i) A description of provisions to handle unusual peak loadings.

To handle additional throughput or unusual peak loadings, Oliveira can increase the use of processing equipment. Oliveira does not accept unscheduled deliveries and is not open to the public. Therefore, unusual peak loadings are less likely to occur. If necessary, during an unusual peak loading event, Oliveira will work with its customers to temporarily divert materials from the site.

J. Storage and Disposal of Residues

(j) A description of the proposed method for storage and final disposal of nonrecoverable or nonmarketable residues.

Any residues or nonrecoverable materials encountered during the daily operations will be disposed of utilizing on-site trash containers. Trash containers will be serviced within 48 hours. Dumpsters are typically hauled to the Fink Road Landfill.

K. Process Water Supply

(k) A description of the water supplies for process water required.

Water for process needs, dust control, and fire protection is provided by the nearby Byron-Bethany Irrigation District. The facility also has two wells on the property which provide back-up. Two 3,500-gallon water trucks move water around the site.

L. Oversight Personnel

(l) Identification of person(s) responsible for oversight of facility operations.

Brian Oliveira
Oliveira Enterprises, Inc.
8005 Bruns Rd.
Byron, CA 94514
209-835-9382

Emergency Contact Number: 209-321-0841

M. Site Restoration

(m) A description of the proposed site restoration activities, in accordance with section 17870.

The compost facility is not designed with a pre-scheduled termination date. However, the Facility will cease operations in compliance with CCR title 14 Section 17870. Thirty days prior to beginning site restoration, Oliveira will notify the enforcement agency in writing of the intent to perform site restoration. The grounds and drainage areas will be cleaned of all residues and

compostable materials (which will either be sold, or spread on appropriate agricultural land or disposed of at a permitted solid waste facility). All machinery will be cleaned and removed or stored securely. Were the facility to cease composting operations, it would likely revert to agricultural uses.

N. Odor Impact Minimization Plan

(n) An Odor Impact Minimization Plan pursuant to Section 17863.4.

An Odor Impact Minimization Plan (OIMP) is included as Appendix C. The OIMP has been developed to provide guidance to on-site personnel in the handling, storage, and removal of compostable materials, in accordance with 14 CCR, Section 17863.4. This OIMP will be revised as necessary to reflect any changes in the design or operation. A copy of the revisions will be provided to the LEA within 30 days of the changes. In addition, this OIMP will be reviewed annually to determine if any revisions are necessary.

The main components of the OIMP are as follows:

1. Odor Monitoring and Data Collection Protocol
2. Meteorological Conditions
3. Complaint Response Protocol
4. Design Considerations for Minimizing Odors
5. Operating Procedures for Minimizing Odors