REPORT OF COMPOSTING SITE INFORMATION

Bee Canyon Greenery

Orange County, California

April 2020
Amendment No. 1: June 2023

In Accordance With:

California Code of Regulations
Title 14, Chapters 3 and 5

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SECTION 1.0

FACILITY OVERVIEW

1.0 FACILITY OVERVIEW

1.1 INTRODUCTION AND PURPOSE

The Bee Canyon Greenery's (BCG) origins are as a pilot Composting Operation on one acre at the Frank R. Bowerman (FRB) Landfill with a 92 cubic yard single open windrow which operated under a Notification tier, SWIS Number 30-AB-0469 issued on May 15, 2018. OC Waste & Recycling (OCWR) expanded the Composting Operation into a fully permitted Compostable Material Handling Facility in 2020 upon issuance of the Compostable Materials Handling Facility Permit (CMHFP) on December 14, 2020, by the Orange County Health Care agency acting as the local enforcement agency for CalRecycle. The California Code of Regulations, Title 14 (14 CCR), Section 17852 (a), defines a compostable material handling facility as "a facility that processes, transfers, or stores compostable material." Handling as defined in 14 CCR, Section 17852 (a) (12), "includes composting, screening, chipping and grinding, and storage activities related to the production of compost, compost feedstocks, and chipped and ground materials."

In September 2016, Governor Brown signed SB 1383, establishing methane emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants (SLCP) in various sectors of California's economy. The bill codifies the California Air Resources Board's Short-Lived Climate Pollutant Reduction Strategy, established pursuant to SB 605, in order to achieve reductions in the statewide emissions of short-lived climate pollutants. As it pertains to California Department of Resources Recycling and Recovery (CalRecycle), SB 1383 establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025. In support of the targets set to reduce the level of statewide disposal of organic waste, OCWR has decided to pursue the BCG at the FRB Landfill to aid in providing a facility within Orange County to process diverted organic waste. The FRB Landfill utilized processed green material (PGM) as alternative daily cover; however, this operation has ceased and the PGM is processed at the BCG. In order to provide

additional organics processing/reuse OCWR is proposing a number of changes at the BCG as part of Phase 1C of the facility development. These changes include the following:

- Expansion of composting feedstock to include manure and food waste;
- Facility acreage adjustment;
- Chipping and Grinding Operations;
- Addition of Covered Aerated Static Pile Technology (CASP) for future operations; and
- Compost Give Away Days.

In accordance with the current tiered permitting requirements included in 14 CCR, Section 17854.1 a Solid Waste Facilities Permit (SWFP) is required for the BCG to operate and that the above proposed changes will require a revision to the CMHFP. Therefore, this Report of Composting Site Information (RCSI) has been revised as part of the SWFP revision application package to present the proposed changes. This document also addresses the requirements presented in 14 CCR, Section 17867 which addresses physical contaminants and SB 1383 regarding sampling to identify the amount of visible contamination. Regulations in 14 CCR addressing SB 1383 pertaining to compost facilities have been included in this RCSI.

The purpose of this document is to present information on the BCG that accurately reflects the proposed conceptual design and operational conditions for the BCG as part of the SWFP application. This RCSI will serve as the basis for approval of the SWFP revision application package.

1.2 DESIGN AND OPERATIONS

1.2.1 Existing

The BCG is placed over a portion of the municipal solid waste landfill deck of the FRB Landfill. The compost facility that is the subject of this report is located in the vicinity of the Phase V-D stockpile of the FRB Landfill partially over in-place refuse (Figure 2). The BCG is placed partially on a minimum of 30 feet of compacted soil cover over in-place refuse and partially over stockpiled native material over native soil. The cover serves to minimize differential settlement, ponding, soil liquefaction or failure of pads in accordance with 14 CCR, Section 17865(b). The FRB Landfill is a Class III landfill regulated by the Regional Water

Quality Control Board (RWQCB) and CalRecycle under Waste Discharge Requirements Order No. R8-2018-0011 and SWFP 30-AB-0360, respectively.

The BCG is currently designed to be constructed, developed, and operated in two phases as described in detail in Section 2.4.1. Phase 1A has been constructed and represents partial buildout and operation on approximately 17 acres of the ultimate 30 acre pad (current operations). Phase 1B represents full build-out and operation of the facility and is expected to be complete and ready for operation in Summer 2023. The acreage for Phase 1A is approximately 17 acres. Combined acreage for Phases 1A and 1B is 30 acres. The process of placing and operating the composting facility on the landfill deck required California Environmental Quality Act (CEQA) certification. The analysis of the facility is based on Phase 1B or ultimate build-out of the facility. The current composting operation will process up to a maximum of 437 tons per day using the turned open-windrow method. The composting feedstock consists of any plant material except food material and vegetative food material that is separated at the point of generation, contains no greater than 1.0 percent of physical contaminants by dry weight, and meets maximum contamination requirements. Feedstock may consist of green material and/or agricultural material. Green material includes but is not limited to tree and yard trimmings, untreated wood wastes, natural fiber product, wood waste from silviculture and manufacturing and construction and demolition wood waste. Agricultural Material is strictly of plant origin, which results from the production and processing of farm, ranch, agricultural, horticultural, aquacultural, silvicultural, floricultural, vermicultural, or viticultural products, including orchard and vineyard pruning's, and crop residues. The site layout is designed to accommodate the material tonnage, contain all storm water that falls on-site from the applicable design storm, and divert stormwater from the surrounding landfill around the compost facility.

The California Environmental Quality Act (CEQA) process for the BCG has been completed. OCWR prepared and processed a Mitigated Negative Declaration (MND) for the facility. The MND was submitted to all responsible agencies and interested parties. The MND was adopted by the Orange County Board of Supervisors on March 24, 2020 and the Notice of Determination (NOD) was filed. An addendum to the MND has been prepared to include the proposed CASP operations. The MND Addendum was submitted to all responsible agencies and interested parties. The Notice of Determination (NOD) was filed with the County Clerk Recorder's Office on December 14, 2022.

1.2.2 Proposed (Phase 1C)

OCWR is proposing a number of changes to BCG as part of Phase 1C of the facility development that will require additional environmental analysis and permitting. Following is a discussion of each proposed activity.

Feedstock: OCWR is proposing to include additional feedstock materials. Feedstock is proposed to include manure and food waste for open windrow and CASP composting. OCWR is proposing to add manure and food waste to the list of feedstock material along with green material as the primary feedstock. Orange County has a number of equestrian communities that generate horse manure that could be potentially composted locally rather than being landfilled. In accordance with Rule SCAQMD 1133.2, up to 20% of manure by volume can be accepted per pile and still be considered a greenwaste processing facility without further permits and emission control technologies from the SCAQMD. At the maximum tonnage rate of 876 tons per day for Phase 1C (see Table 11), BCG can accept up to 175 tons per day of manure.

Facility Acreage: BCG is currently permitted to operate on 30 acres. The facility consists of an all-weather surface for the receipt and handling of feedstock, active composting, curing, and storage of finished product. The facility boundary includes ancillary infrastructure such as a stormwater retention basin, fire prevention water lines, fire hydrants, fire lanes, J-stands, and storage of equipment. OCWR is proposing to expand the facility acreage by 1.5 acres to include the reclaimed water tanks and to use the area to potentially store equipment, materials, and supplies associated with the BCG. Only finished compost or inert materials may be stored in this area. No feedstock, composting, or curing of compost materials will occur within this 1.5 acre parcel located south of the existing compost pad. In addition, the adjacent slopes of the greenery will be included as part of the facility acreage bringing the total facility acreage to 37.3 acres as delineated in Table 4 below.

TABLE 4
BEE CANYON GREENERY
ACREAGE ADJUSTMENT

Area	Acreage
Compost Pad	31.4 acres
Proposed Laydown Area	1.5 acres
Northerly Slope	1.0 acres
Southerly Slope	3.4 acres
Total Proposed Acreage	**37.3 acres**

Chipping and Grinding: Chipping and grinding is an inherent aspect of a green materials composting operation. Most facilities chip and grind green waste prior to placement in windrows. At BCG, the green material arrives pre-processed which allows the feedstock to be immediately placed in windrows. Through composting the green material is further reduced in size through microbial degradation. The finished compost is then screened to meet product specifications which results in the generation of oversize particles referred to as overs. The overs can be further composted or converted to a mulch product which requires the overs materials to be mechanically reduced in size through chipping and grinding. Furthermore, as OCWR expands its resource recovery activities wood waste can be removed from the waste stream from landfill operations that could be further chipped and grinded for either composting operations or to produce mulch. New equipment for this processing operation would include a chipper/grinder and a conveyor. Chipping and grinding will occur at the material unloading and processing location (see Figure 5).

CASP Technology: BCG currently utilizes windrow composting as the primary means to compost feedstock. As the demand grows for compost production and as OCWR expands feedstock materials beyond green materials, other technologies need to be considered. The CASP technology utilizes a tarp system equipped with a blower to induce forced aeration for the Process to Further Reduce Pathogens (PFRP) while also serving as an emission control technology under SCAQMD rules. OCWR is proposing to utilize the CASP system technology in addition to traditional open air windrow composting at BCG. A plan showing the conceptual layout for CASP composting is shown on Figure 5 The conceptual layout provides for approximately 92 CASP piles and approximately 114 curing piles, this would result in the ability to receive approximately 876 tons per day of feedstock. The CASP will use a mechanical cover winder to apply and remove the

covers from the compost piles, therefore new equipment added for the operation will include a tarp cover machine. There is electrical power available at the BCG; therefore, the blowers will be operated via the existing electrical system. There is an existing water source at the BCG via an existing 100,000-gallon tank which is filled continuously throughout the day by an Irvine Ranch Water District (IRWD) reclaimed waterline. That water fills a series of tanks located at the BCG that provides water for composting activities and fire prevention. The tank system consists of 10 holds with a holding capacity of 130,000 gallons. It is anticipated CASP composting operations will require approximately 84,600 to 116,730 gallons of water per day for operation as compared to the current open windrow operation that is estimated to use up to 262,476 gallons per day. The BCG CASP will be designed and operated to meet all Orange County Fire Authority (OCFA) requirements. This will include but not be limited to the spacing between CASP piles (approximately 8 feet); the number, width, and length of fire lanes; and the distance of the CASP piles and material storage areas to flammable vegetation. In addition, the BCG already has fire hydrants in place. OCWR will provide a plot plan to OCFA for review and approval that contains the following information:

- A Fire Master Plan showing all driveways and parking areas constructed of all-weather surface roads with a minimum of 28 feet in width.
- Location of all water sources (fire hydrants).
- Location of all other hazards (i.e., flammable, combustible, or LPG tanks).
- Fuel modification plan.

Compost Give Away: BCG is co-located at the FRB Landfill. Pursuant to the Landfill's Solid Waste Facility Permit, the landfill does not accept refuse from the general public. Only commercial haulers and transporters with a business license are permitted to utilize the landfill for disposal. The BCG is a separate facility from the Landfill and independent from landfill operations. As BCG produces finished material, the majority of the product will be hauled offsite for beneficial reuse. Occasionally, anticipated at a maximum monthly cadence, OCWR may sponsor community compost give away to local businesses and residents. These events will provide an opportunity to educate the community on the benefits of composting as well as support the state's goal of SB 1383 and AB 939 to recycle organic materials and conserve landfill capacity.

1.3 OWNER/OPERATOR

The FRB Landfill property is owned by OC Waste & Recycling (OCWR); The BCG facility is owned and operated by OCWR. Below are the persons responsible for oversight of facility operations:

Director of OCWR

The Director has overall responsibility for OC Waste & Recycling which includes operation and management of its facilities, infrastructure, budget and planning, and organizational structure.

Central Region Deputy Director

The Central Region Deputy Director is responsible for operations and management of OC Waste & Recycling's solid waste facilities within the Central Region of Orange County which includes the BCG facility. The Deputy Director is responsible for the overall day-to-day operations, facility and project planning, budget and planning, environmental compliance, safety, and allocation of resources.

Central Region Superintendent

The Superintendent is responsible for day-to-day operations at OC Waste & Recycling solid waste facilities within Central Region. These responsibilities include facility operations, equipment purchases, safety program, overseeing personnel working at the BCG facility.

1.4 SITE LOCATION

The facility is located in Southern California in Orange County (see Figure 1). The address of the facility is 11002 Bee Canyon Access Road, Irvine, California 92602.

1.5 SITE PLAN DESCRIPTION

The BCG is a compostable material handling facility, which is located within the property boundary of the existing FRB Landfill (see Figure 2) and utilizes an open windrow composting technology. The operational footprint for the BCG, including ancillary facilities is proposed to be approximately 37.3 acres at full build-out. The BCG is a facility designed to serve a portion of the County of Orange in

complying with the compostable materials handling requirements of Chapter 3.1 in 14 CCR.

Phases 1A and 1B

The existing facility accepts any plant material except food material and vegetative food material that is separated at the point of generation, contains no greater than 1.0 percent of physical contaminants by dry weight, and meet maximum contamination requirements. Feedstock may consist of green material and/or agricultural material. Green material includes but is not limited to tree and yard trimmings, untreated wood wastes, natural fiber product, wood waste from silviculture and manufacturing and construction and demolition wood waste. Agricultural Material is strictly of plant origin, which results from the production and processing of farm, ranch, agricultural, horticultural, aquacultural, silvicultural, floricultural, vermicultural, or viticultural products, including orchard and vineyard pruning's, and crop residues. OCWR is proposing to include additional feedstock materials. Feedstock is proposed to include manure and food waste for open windrow composting. Arriving materials may already have been pre-processed (chipped and ground and contaminants removed) or may be processed onsite and will be consolidated at the material receiving area prior to deployment into windrows. The composting area includes multiple windrows for Phase 1A and 1B composting stages (active and curing).

Phase 1C

Phase 1C at the BCG will entail composting via a CASP system. The BCG will accept a maximum of 876 tons per day of feedstock (see Section 1.2.2 for feedstock materials) with a maximum on-site storage of materials of 121,725 cubic yards (i.e., feedstock, compost – active, curing, and final product) on-site at any given time.

The screening, storage and compost loadout area for all phases will be situated cross-gradient or upgradient from the compost windrows to minimize cross-contamination. Figures 3, 4, and 5 for Phases 1A, 1B, and 1C, respectively, show layout for the windrows and CASP piles. The actual layout in the field is dependent on various factors including equipment utilized, moisture requirements, drainage patterns and achieving operational efficiencies but will always be designed and operated to achieve compliance with State Minimum Standards included in Title

14 of the California Code of Regulations (14 CCR), and Orange County Fire Authority (OCFA) requirements. Figures 3, 4, and 5 show operations activities, screening and finished product curing/storage, loading, and unloading areas and miscellaneous activities related to the items listed above. Figure 7 shows the facility grading plan, the perimeter storm water control berm, and the compost facility detention pond. Phase 1A of the BCG is located in an area of an active soil stockpile. The facility will be developed, and capacity of the facility increased as soil excavation proceeds to facility construction grades.

1.6 AREA CLIMATOLOGY

According to the National Centers for Environmental Information, National Oceanic and Atmospheric Administration (NOAA) climate data for 1981-2010, the average annual rainfall for the Irvine Ranch Station is 14.32 inches. The wet season extends from December through March. The average temperatures range from 73°F in the summer to 57°F in the winter. The mean annual evaporation is approximately 50 to 55 inches based on an isopleth map from the National Weather Service.

1.7 WATER SUPPLY

In accordance with 14 CCR, Section 18227(k), included herein is a description of the water supply for process water at the BCG. The water supply for the BCG is provided by an existing 100,000-gallon reclaimed water tank that is located near the landfill offices. The 100,000-gallon tank is filled continuously throughout the day by an Irvine Ranch Water District (IRWD) reclaimed waterline that provides water to the entire site. The water supply comes from a water line that is connected to the existing 100,000-gallon tank. The distance from the existing 100,000-gallon tank to the Composting Facility location is approximately 3,800 feet and an elevation difference of 200 vertical feet. Water is pumped to a series of tanks with a minimum capacity of 100,000 gallons located near the composting facility. Assumptions for operations water demand are presented in Tables 1, 2, and 3. The estimated process water demand ranges from approximately 69,416 to 126,238 gallons per day (gpd) for Phase 1A, 144,330 to 262,476 gpd for Phase 1B (full build-out), and 84,609 to 116,731 gpd for Phase 1C.

SECTION 2.0

FACILITY INFORMATION

2.0 FACILITY INFORMATION

2.1 FACILITY ACTIVITIES

The following sections describe the proposed activities to be conducted at the BCG from feedstock receiving to transfer of compost off-site. The operator shall notify the LEA, in writing, of any proposed significant changes in facility operation or design during the planning stages of those changes. The operator first submits to the LEA a notice of said changes at least 180 days before said changes are undertaken, and those changes are approved by the LEA.

2.2 FACILITY LAYOUT

Figures 3, 4, and 5 depict the conceptual site plan for the operations for Phases 1A, 1B, and 1C. The main features of the BCG include the following:

- Material Recycling Area (Tipping Floor);
- Composting Area;
- Curing Area;
- Screening Area;
- Finished Product Load Out Area;
- Storm water Pond; and
- Parking.

The current composting operation for the BCG is open windrow composting. As part of Phase 1C it is proposed that operations will have the option to run as CASP composting.

Open Windrow Composting (Phases 1A and 1B)

Open windrow composting entails placing the compostable material in elongated piles. The windrows are turned (using a compost windrow turner or front-end loader) to improve porosity and oxygen content, mix in or remove moisture, and redistribute cooler and hotter portions of the pile. Open windrow composting is a commonly used composting operation method. Composting process control parameters include the initial ratios of carbon and nitrogen rich materials, the amount of bulking agent added to assure air porosity, the pile size, moisture

content and turning frequency. The temperature of the windrows must be measured and logged constantly to determine the optimum time to turn them for quicker compost production and to meet the Process to Further Reduce Pathogen (PFRP), heavy metal concentrations, and physical contaminant limit requirements per 14 CCR, Section 17868.1 through 17868.3 and 17868.3.1.

CASP Composting (Phase 1C)

This technology consists of an automated system that blows air into the compost which is covered with a synthetic semi-permeable cover. The increased airflow and cover allow expedited processing time and significantly reduces water use. The composting occurs in the aerated piles for approximately 8 weeks; the first 4 weeks (21-28 days) are the active composting phase, after which the curing phase occurs for a minimum of 4 weeks. During the active composting phase, the compost remains covered and is then uncovered during the curing phase. The temperature of the compost is monitored during the active composting phase through automated sensors. Once the active composting phase is complete the piping is removed from the pile and the compost is moved to a pile designated for the next phase (i.e., moved from an active phase pile to a curing phase pile). Once the compost completes a minimum of 28 days in the CASP active phase and meets the Process to Further Reduce Pathogen (PFRP), heavy metal concentrations and physical contaminant limit requirements of per 14 CCR, Section 17868.1 through 17868.3 and 17868.3.1 requirements, it will require a minimum of 28 days of curing before it can be stored or transported off-site.

The compost manufacturing process will consist of several major processing steps as described in the following sections. Process Flow Diagrams are presented as Figures 6A and 6B which show the proposed material and process flow, showing movement of the material from receipt to final product for windrow and CASP technologies, respectively.

2.2.1 MATERIALS RECEIVING

Inbound feedstock materials may be pre-processed prior to arriving at the site or may be processed onsite. The material arriving for the compost feedstock will be source separated. The degree of source separation may vary depending on the type of technology utilized for composting. For example, in the case of windrow composting, material arriving will be source separated primarily consisting of a

single material type (i.e., green waste vs. manure). At this point in time OCWR is not planning to receive mixed organic waste if the feedstock will be processed using the open windrow technology. For composting using the CASP system, the intent is also to receive it source separated of a single material. However, there is the potential that the feedstock could consist of multiple organic material types and still be considered source separated depending on the method of collection as established by the hauler and jurisdiction. For example, some food scraps may be mixed in with the green waste. The CASP will be able to effectively receive this material type while controlling odors and vectors. Mixed solid waste will not be accepted and there will be no sorting of materials to remove contaminants. The 1% limit applies to all non-compostable materials and materials not permitted within the SWFP. Any loads that are greater than the 1% contamination limit will be rejected by returning the load to the hauler or disposed at the landfill.

Arriving feedstock may be consolidated in a material receiving area prior to being deployed into compost windrows/CASP piles, or they may be directly unloaded in stockpiles in the active composting area for immediate deployment. Materials from the receiving area would be predominantly managed by front-end loaders. Material requiring size reduction may be processed using a chipper and/or grinder. Chipping/grinding the feedstock materials will reduce the particle size and increase the surface area of the feedstock particles. Materials from the receiving area would be predominantly managed by front-end loaders. Feedstock materials will be loaded directly into a trailer or dump truck for delivery to the active composting area.

Once feedstock is unloaded, compost personnel inspect and remove prohibited materials and/or contaminants. Prohibited materials may be returned to the generator while contaminants are placed in a debris box for subsequent disposal at the landfill or recycling. If hazardous waste is identified, it is removed and segregated according to the site hazardous waste management plan.

In accordance with 14 CCR, Section 17868.5, feedstock shall undergo loadchecking to ensure that physical contaminants are no greater than 1.0 percent of total weight. Load checking shall include both visual observation of incoming waste loads and load sorting to quantify the percentage of physical contaminants and detect receipt of unacceptable feedstock (e.g., feedstock that does not meet the definition of green material, vegetative food material, food

material, or manure). A minimum of ten percent of daily incoming feedstock volume or at least one truck per day, whichever is greater, shall be inspected visually. The loadcheck program is discussed in detail in Section 3.2.1 and Appendix A.

2.2.2 COMPOSTING AND CURING

Open Windrow (Phases 1A and 1B)

The feedstock materials will be formed into elongated piles/open windrows for composting by front loaders with addition of moisture as needed by the on-site water truck. Newly constructed compost windrows will initially be covered with at least 6 inches of finished compost within 24 hours of formation as required by SCAQMD Rule 1133.3. For the first 15 days after initial active windrow formation, within six hours before turning, water will be applied as necessary to ensure the pile meets the wetness criteria described in Rule 1133.3. Active compost shall be maintained under aerobic conditions at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for the Process to Further Reduce Pathogens (PFRP) period of 15-days or longer as specified in 14 CCR 17868.3(b)(3) utilizing wheeled loaders or a windrow turner. During the period when the compost is maintained at 55 degrees Celsius (131 degrees Fahrenheit) or higher, there shall be a minimum of five (5) turnings of the windrow. Feedstock materials will remain in Stage 1 - active composting windrows up to a maximum of 12 weeks on average, but may vary depending on ambient temperature, rainfall, feedstock consistency and other factors. Once the initial composting is completed, the material will be moved into the Stage 2 –Curing Piles up to a maximum of approximately 8 weeks.

CASP Composting (Phase 1C)

The proposed CASP system will utilize a semi-permeable synthetic cover which will assist in the decomposition process and assist in reducing emissions. The system components include the synthetic cover, oxygen and temperature sensors, an aeration system, controllers/data loggers and software, remote wireless (which is optional), web-based system monitoring, and inventory management. A cross-section of the CASP pile layout is provided in Figure 9. The feedstock materials will be formed into elongated piles for composting over aeration piping by front loaders with addition of moisture as needed by the on-site

water truck. Newly constructed compost piles will initially be covered with an emission reducing synthetic micropore cover within 48 hours in place of the 6 inches of finished compost as required by SCAQMD Rule 1133.3. Based on typical aeration requirements for active composting operations with similar feedstock recipes and design criteria, the blower system will supply 0.83 to 2.5 standard cubic feet per minute (scfm) of air flow per cy of compost or approximately 1,500 scfm per pile at minimum for a specified duration. The facility will incorporate one blower per pile with two spare blowers available as a back-up should a blower be out of service for maintenance or repairs. Each blower will be placed on a structural pad. The CASP compost facility will be designed as a standalone system with existing electrical service (see Figure 5) to provide for the required electrical demands. In case of power failure, to accommodate for this instance, provisions for an electrical generator connection to provide back-up power to the system is provided which can be utilized in emergency situations. Active compost shall be maintained under aerobic conditions at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for the PFRP period of 72 consecutive hours as specified in 14 CCR 17868.3(b)(3). Feedstock materials will remain in the active phase of composting until PFRP is met and the pile has undergone active aeration for a minimum of 21 to 28 days. Temperature is monitored through automated sensors (located as shown on Figure 9) for a minimum of four readings per pile. Once this phase is complete the piping is removed from the pile and the compost is moved to the pile designated for the curing phase. The compost will undergo passive aeration for a minimum of 28 days or until the compost has a Solvita Maturity Index of seven or the product respiration rate is below ten milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry per SCAQMD Rule 1133.3. Once the compost completes a minimum of 28 days in the CASP active phase and meets the Process to Further Reduce Pathogen (PFRP) requirements, it will require a minimum of 8 weeks of curing before it can be stored or transported off-site.

2.2.3 SCREENING

Once the compost has completed the curing process, most of it will be screened using a large portable screening equipment, such as a trommel or star screen. Typically, a screener can separate the compost into multiple fractions: the "unders" or undersize fraction passing through the screen cloth and the "overs" or that which does not pass through the screen cloth. The "unders" are typically

what is sold as compost (3/8 inch screen size is typical but certain markets specify different screen sizes). The "overs" are typically used to add additional structure back into the compost process; used as alternative daily cover at a landfill; sold for fuel; or for other uses.

2.2.4 MONITORING AND TESTING

The BCG will comply with 14 CCR, Sections 17868.1-17868.3.1. The regulations require regular sampling of finished compost for compliance with heavy metals, pathogen reduction standards, and physical contamination.

Heavy Metals: 14 CCR requires all commercial composters to take a composite sample once per every 5,000 cubic yards of compost produced for heavy metals analysis. The metals and their limits are shown in Table 5:

TABLE 5
MAXIMUM ACCEPTABLE METAL CONCENTRATIONS

Parameter	Concentrations (mg/kg)
Arsenic (As)	41
Cadmium (Cd)	39
Copper (Cu)	1500
Chromium (Cr)	See Note*
Lead (Pb)	300
Mercury (Hg)	17
Nickel (Ni)	420
Selenium (Se)	100
Zinc (Zn)	2800

*Although there are no maximum acceptable metal concentrations for chromium in compost, operators shall arrange for concentration of chromium in compost they produce to be determined in connection with the analysis of other metals.

Pathogen Reduction: The pathogen reduction process is a two-part process that involves exposing the compost mass to a prescribed temperature for a specific amount of time, as well as documenting the success of the process via laboratory testing. In California, all samples are required to be tested for both Fecal Coliform and Salmonella as shown in Table 6.

TABLE 6
PATHOGEN LIMITS

Indicator Organism	Limit
Fecal Coliform	<1,000 MPN/gram
Salmonella	<3 MPN per 4 grams

The pathogen reduction process for open windrow composting will reach temperatures of 131 degrees F for a period of at least 15 days. During the period when the compost is maintained at 131 degrees F or higher, there will be a minimum of five turnings of the windrow in accordance with 14 CCR, Section 17868.3 (b)(3). Temperature readings are to be taken per requirements in 14 CCR, Section 17868.3(c)(1) and (c)(3).

The pathogen reduction process for CASP composting will reach temperatures of 131 degrees F for a period of at least 72 consecutive hours. During the period when the compost is maintained at 131 degrees F or higher, the piles will remain static. Temperature readings will be taken at least once a day during the pathogen reduction period per 14 CCR, Section 17868.3(c)(2)(B).

Physical Contamination: Compost shall not contain more than 0.5% by dry weight of physical contaminants greater than 4 millimeters; no more than 20% by dry weight of this 0.5% shall be film plastic greater than 4 millimeters. Compost that contains physical contaminants in excess of either one or both of these limits shall be designated for additional processing, disposal, or other use as approved by local, state, or federal agencies having appropriate jurisdiction. Verification of physical contamination limits shall occur prior to the point where compost is removed from the site or beneficially used on-site.

Sampling of every 5,000 cubic-yards of compost produced will be performed to determine the percentage of physical contaminants greater than 4 millimeters in the sample. A composite sample shall be representative and random and may be obtained by taking twelve (12) mixed samples as described below.

- Twelve samples shall be of equal volume.
- The twelve samples shall be extracted from within the compost pile as follows:
  - Four samples from one-half the width of the pile, each at a different cross-section;

- Four samples from one-fourth the width of the pile, each at a different cross-section; and,
- Four samples from one-eighth the width of the pile, each at a different cross-section.

The samples will be analyzed as follows:

- Determine the total dry weight of the composite sample;
- Separate the physical contaminants greater than 4 millimeters from the composite sample and determine the dry weight of the physical contaminants;
- Determine the percentage of physical contaminants by dividing the dry weight of the physical contaminants by the total dry weight of the composite sample.

Test results of samples must be received by the operator prior to removing compost from the composting facility.

2.2.5 LOADOUT

Finished compost (and other products [i.e., overs, wood chips, other landscaping products]) will be stockpiled on site prior to being loaded out for delivery to end users. The proposed storage location for finished product will contain a series of bunkers for temporary storage, bunkers will consist of K-rails which are moved as necessary to divide piles of materials being stored. Table 10 indicates a total storage capacity of 25,230 cubic yards for Phases 1A and 1B and Table 11 indicates a total storage capacity of 121,725 cubic yards for Phase 1C. OCWR's goal is to have just in time storage and have all finished material sold before it is stored; however, given the fluctuations in compost markets, compost may be stored up to 180 days, as necessary. Loadout would include using front-end loaders to load a variety of trucks.

2.2.6 UNUSUAL PEAK LOADING

In the event of unusually high quantities of feedstock the proposed staging area will have adequate area to stockpile the excess materials until they are able to be processed. Incoming pre-processed materials will typically be stockpiled on site for a period up to forty-eight (48) hours. In the case of unusual loadings, the stockpile period may be extended up to a total of 120 hours as needed with the approval of the LEA (only green waste, not food waste). If there is a high peak

loading period, there should be an effort to process the material and form it into windrows as quickly as possible where the aerobic breakdown can occur in a controlled state. This will require first in, first out approach to ensure each load is earmarked as to when it arrived and when it needs to be processed. The loads should also be kept as small as possible rather than adding more feedstock to a pile which would increase the potential for fires, odors, and vectors. This may require operations to reduce future feedstock shipments until operations can catch up to normal processing times. While the feedstock is waiting to be "officially" processed, some pre-monitoring can be done such as temperature monitoring to ensure the feedstock has not gone sour due to anaerobic degradation. If the feedstock creates significant issues, it can ultimately be buried at the landfill to remove the concern.

2.3 HOURS OF OPERATION

Facility operating hours are summarized on Table 7.

TABLE 7
BEE CANYON GREENERY
OPERATING HOURS

Facility	Operating Days	Operating Hours
Feedstock Acceptance	Monday thru Saturday Closed 6 Major Holidays	7:00 a.m. – 5:00 p.m.
General Operations/Facility Maintenance	7 days a week	24 hours

2.4 FACILITY DESIGN

The following sections provide a description of the BCG design and design calculations in accordance with 14 CCR, Section 18227.

2.4.1 DESIGN PLANS

The BCG is to be constructed and operated in three phases. The sample layout of the Operations Area is presented on Figures 3, 4, and 5 for Phases 1A, 1B, and

1C, respectively. These figures show the conceptual locations of site equipment and structures, the general layout for all loading and unloading, storage, processing, and parking areas at the facility for Phases 1A, 1B and 1C buildout, respectively.

Phase 1A

The footprint for Phase 1A provides for a capacity of up to 210 tons per day. This capacity assumes optimal operating conditions (maximum compost pile dimensions, utilizing a windrow turner and/or loader, minimum area for post compost product). The site is graded at 2% toward the northeast such that the drainage will flow between windrows toward the storm water pond. The stormwater pond is sized to retain 15.84 acre-feet of water, the volume of runoff generated from a 25-year, 24-hour storm event for the compost facility at ultimate build-out of Phase 1B. In accordance with standard engineering practice, the pond is designed to accommodate an additional two feet of freeboard above the water level of the design storm event to accommodate waves and splashing from water flows. Management of water collected in the storm water pond will include utilization of the collected liquid for moisture control of active compost windrows, evaporation, and/or utilized for dust control on the lined areas of the FRB Landfill. Figures 7 and 8 present the conceptual Facility Drainage Plan and Drainage Details.

Phase 1B

Phase 1B provides for up to 227 additional tons per day of composting capacity for a total of up to 437 tons per day of ultimate capacity. The Phase 1A and 1B areas combined have been used to calculate ultimate composting capacity for site permitting, storm water flows, and water demand. The composting pile layout for Phase 1B is driven by the drainage and type of equipment utilized for windrow turning (i.e., windrow turner or loader), thus the compost pile rows continue along the same alignment as Phase 1A allowing drainage to flow between the piles and toward the storm water pond (see Figure 7). The stormwater pond is located such that it will not need to be relocated during the proposed Phase 1B expansion of the BCG. The materials receiving, screening and loadout, and parking areas would be relocated to the west during the Phase 1B expansion.

Phase 1C

Phase 1C provides for up to 876 tons per day of composting capacity. The Phase 1 and 2 areas combined have been used to calculate ultimate composting capacity for site permitting, storm water flows, and water demand. The composting pile layout for Phase 1C is driven by the drainage and type of equipment utilized for CASP technology, thus the CASP compost pile rows continue along the same alignment as Phase 1A allowing drainage to flow between the piles and toward the storm water pond (see Figure 7). The stormwater pond is located such that it will not need to be relocated for Phase 1C development of the Bee Canyon Greenery. The materials receiving, screening and loadout, and parking areas would be relocated as shown on Figure 5 during the Phase 1C expansion.

Water Supply Pipeline

There are two water supply systems that are included in the facility design, one to provide operations water for composting the feedstock and the other to provide fire protection water for the compost facility (see Figures 3, 4, and 5). The source of water will be by an existing 100,000-gallon reclaimed water tank that is located near the landfill offices. The 100,000-gallon tank is filled continuously throughout the day by an IRWD reclaimed waterline that provides water to the entire site. The water supply will come from a new water line that will be connected to the existing 100,000-gallon tank. The water supply for the BCG will be transferred to a series of tanks with a minimum capacity of 100,000 gallons located near the composting facility via a new water line that will be connected to the existing 100,000-gallon tank. Table 8 summarizes the required operations water demand for Phases 1A, 1B, and 1C of the compost facility. The impacts of each increase on the IRWD system will be analyzed to determine the impact at implementation for each phase.

TABLE 8
BEE CANYON GREENERY
CONSTRUCTION PHASE SUMMARY

Construction Phase	Facility Size (acre)	Capacity (tpd)	Operations Water Demand (gpd)
1A	17	210	69,416 to 126,238
1B	30	437	144,330 to 262,476
1C	37.3	876	84,609 to 116,731

2.4.2 DESIGN CALCULATIONS

The BCG is designed in accordance with accepted engineering practices for this type of composting facility. Title 14 CCR regulations pertaining to the operation of a composting facility were developed to evaluate a facility's performance through objective periodic inspections. Design criteria utilized to determine the facility's material handling capacity, traffic loading and drainage system capability will be demonstrated by the level of compliance the operator will be able to maintain at the proposed permitted volume.

The facility design will be able to accommodate a maximum permitted daily inflow rate of up to 210 tpd (Phase 1A), 437 tpd (Phase 1B), and 876 tpd (Phase 1C) of feedstock materials. BCG will have a storage capacity of approximately 74,000 cy (Phase 1A), 130,000 cy (Phase 1B), and 121,725 cy (Phase 1C) of materials (see Tables 9, 10, and 11 for feedstock pile sizes) as follows on Tables 12 through 14:

TABLE 12
BEE CANYON GREENERY
PHASE 1A OPEN WINDROW COMPOSTING FACILITY AREA
AND VOLUME CALCULATIONS SUMMARY

Area	Description	Cubic Yards
Receiving	Organic Receiving/Sorting	525
Active Windrow Piles	Approximately 64 Piles	37,821
Compost Curing Piles	Approximately 37 Piles	21,432
Screening, Storage and Loadout	Compost Storage	14,147
	Total	**73,925**

TABLE 13
BEE CANYON GREENERY
PHASE 1B ULTIMATE BUILD-OUT OPEN WINROW COMPOSTING FACILITY AREA
AND VOLUME CALCULATIONS SUMMARY

Area	Description	Cubic Yards
Receiving	Organic Receiving/Sorting	1,092
Active Windrow Piles	Approximately 122 Piles	71,460
Compost Curing Piles	Approximately 69 Piles	40,494
Screening, Storage and Loadout	Compost Storage	16,065
	Total	**129,111**

TABLE 14
BEE CANYON GREENERY
PHASE 1C CASP COMPOSTING FACILITY AREA
AND VOLUME CALCULATIONS SUMMARY

Area	Description	Cubic Yards
Receiving	Organic Receiving/Sorting	2,189
Active Windrow Piles	Approximately 92 Piles	52,543
Compost Curing Piles	Approximately 114 Piles	66,993
	Total	**121,725**

The facility design has accounted for maneuverability of loaders, windrow turner equipment, membrane placement, and to place, turn and move materials between piles.

The open windrow compost piles will be placed in groups of 2 within a 100-foot by 50-foot compost area. The compost areas will have a 20-foot perimeter access road that runs both vertically and horizontally between the compost areas. The 2 compost piles within each compost area will be 20 feet wide and separated by a 10-foot row to provide space for loaders to turn the piles when necessary. The 20-foot pile width allows a windrow turner to operate for future use if and when OCWR decides to switch equipment from loaders to a windrow turner.

The CASP piles will be constructed using a front-end loader to have a width of 22 feet, length of 88.5 feet, and a maximum height of 12 feet. A semi-permeable plastic cover will fully cover the compost material and be anchored around the

edges to hold the cover in place. The cover will be placed with an electric roller specifically built to roll the cover material onto the compost piles. A total of 92 active piles are included in the design and include one blower per pile. All equipment will be contained on the backside of the piles, away from facility operations. A block wall will separate the equipment and the compost pile to further protect the equipment from facility operations.

A Fire Prevention Plan (FPP) has been prepared that complies with Section 3-3-20, Chapter 28 of the Orange County Fire Authority (OCFA) Amendment Package to the 2016 California Fire Code and OCFA Guideline B-09a to get the site design and operation permitted through the OCFA. The perimeter road, hydrant spacing, and access rows and aisles are designed based on these OCFA guidelines. The FPP was approved by the OCFA in September 2019. Currently the FPP for Phase 1C is under review and that Phase of the project will not be constructed without OCFA approval.

2.5 FEEDSTOCK TYPE

2.5.1 FEEDSTOCK TYPES

The BCG is proposing to receive the following feedstock types, including:

Green Material means any plant material except food material and vegetative food material that is separated at the point of generation, contains no greater than 1.0 percent of physical contaminants by dry weight, and meet maximum contamination requirements." Green material includes but is not limited to tree and yard trimmings, untreated wood wastes, natural fiber product, wood waste from silviculture and manufacturing and construction and demolition wood waste.

Agricultural Material that is strictly of plant origin, which result from the production and processing of farm, ranch, agricultural, horticultural, aquacultural, silvicultural, floricultural, vermicultural, or viticultural products, including orchard and vineyard pruning's, and crop residues may also be accepted.

Feedstock for the BCG will consist of the above green and agricultural material and may also consist of both vegetative food materials and food materials (non-vegetative) and manure, as follows:

"Vegetative Food Material" means that fraction of food material that is a plant material and is separated from other food material and the municipal solid waste stream. Vegetative food material may be processed or cooked but must otherwise retain its essential natural character and no salts, preservatives, fats or oils, or adulterants shall have been added. Vegetative food material includes, but is not limited to, fruits and vegetables, edible flowers, and plants, outdated and spoiled produce, and coffee grounds. Vegetative food material contains no greater than 1.0 percent of physical contaminants by dry weight and meets the requirements of section 17868.5.

"Food Material" means a waste material of plant or animal origin that results from the preparation or processing of food for animal or human consumption and that is separated from the municipal solid waste stream. Food material includes, but is not limited to, food waste from food facilities as defined in Health and Safety Code section 113789 (such as restaurants), food processing establishments as defined in Health and Safety Code section 111955, grocery stores, institutional cafeterias (such as prisons, schools, and hospitals), and residential food scrap collection. Food material does not include any material that is required to be handled only pursuant to the California Food and Agricultural Code and regulations adopted pursuant thereto.

"Manure" is an agricultural material and means accumulated herbivore or avian excrement. This definition shall include feces and urine, and any bedding material, spilled feed, or soil that is mixed with feces or urine.

Arriving materials may already have been pre-processed (chipped and ground and contaminants removed) or may be processed onsite and will be consolidated at the material receiving area prior to deployment into windrows/piles.

2.5.2 FEEDSTOCK QUANTITIES

Feedstock is any compostable material used in the production of the compost of chipped and ground material including, but not limited to, agricultural material that is strictly of plant origin and green material. OCWR's intention is to receive residential greenwaste as the primary feedstock collected from private haulers throughout Orange County. Previously the greenwaste received at OCWR landfills were chipped and ground and used as Alternative Daily Cover prior to the ban of such practice due to AB 1594. Agricultural material may or may not be received

at the BCG. However, OCWR recognizes that some agricultural material may be collected by the haulers, mixed with the residential greenwaste, and brought to the BCG. Eventually food waste and manure will be included into the feedstock at the BCG, the timing of incorporating the food waste is not known at this time, but the percentage of food waste to be included in the feedstock could potentially be as much as 50%, although a 20% mixture is more likely to be anticipated (moisture content will be monitored as feedstock with greater than 50% moisture cannot be accepted per the Load Check program in Appendix A). It is anticipated that feedstock accepted at the BCG could be as much as 20% horse manure for composting. The BCG is designed to process up to 130,000 cy (Phases 1A and 1B) and 121,725 cy (Phase 1C) of compost feedstock materials onsite based on area available for receiving, composting, and storing green materials, accounting for equipment maneuverability, OCFA requirements for firefighting and estimated storage requirements.

2.5.3 ADDITIVES

Additives are materials that are mixed with feedstock or active compost to improve composting conditions or the finished product. Additives in the future may include but are not limited to materials such as diatomaceous earth, grape lees, fertilizers, and urea. Additives do not include compost feedstock.

The application for the use of each additive shall include the type of additive, any analyses that are necessary, placement methods, and control of odors, vectors, and other nuisances. Additives will be incorporated into the compost with a front-end loader, screening system, or other appropriate equipment.

BCG has no plans at this time to use additives. All additives must be approved by the California Regional Water Quality Control Board Santa Ana Region (SA-RWQCB) and the Local Enforcement Agency prior to their application.

2.5.4 AMENDMENTS

Amendments are materials added to stabilized or cured compost to provide attributes for certain compost products, such as product bulk, product nutrient value, product pH, and soils blend. Amendments may include but are not limited to lime, gypsum, worm castings, oyster shells, soil, rice hulls, cocoa bean hulls, and corn gluten. Amendments do not include septage, biosolids, or compost feedstock.

BCG has no plans at this time to use amendments. All amendments must be approved by the SA-RWQCB and the Local Enforcement Agency prior to their application.

2.6 EQUIPMENT

A variety of equipment will be used in the operation of the facility. The equipment on-site will adequately serve operational and maintenance needs. In accordance with 14 CCR, Section 18227(g), a detailed list of proposed equipment is shown in Table 15.

TABLE 15
BEE CANYON GREENERY
LIST OF OPERATING EQUIPMENT

Description	Numbers of Equipment
Front End Loader (3.8 cy)	2
Mobile Screen (230 – 400 cy/hr)	1
Windrow Turner (4,500 cy/hr)	1
Electric Membrane Roller	1
Dump Truck (10 cy)	1
Water Truck (6,000 gallon)	1
Temperature Probes (3'-4')	2
Scales (up to 200+ pounds)	2
Scales (0.001 grams to 50 grams)	2
Chipper/Grinder	1
Conveyor	1
CASP System Blowers and Components	1
Total Numbers of Equipment	**16**(1)

(Note 1: Equipment listed is either owned or rented by OCWR)

This represents the proposed equipment at the site. The mobile screen may be brought on-site periodically as needed to screen the finished compost after enough quantity has built up. OCWR may plan to purchase a mobile screen based on market demands of the compost product. The windrow turner is included as a planned addition. Additional equipment may be brought on site, as necessary, to more efficiently process and transfer the material.

2.6.1 EQUIPMENT MAINTENANCE

Daily maintenance of the mobile and stationary equipment includes checking belts, engine oil, hydraulic fluid, fuel, etc. An equipment maintenance program for repairs and routine servicing is performed by the operator. All maintenance and repairs are performed by OCWR's contracted heavy equipment personnel or through the equipment rental company.

2.6.2 STANDBY EQUIPMENT

BCG will have access to standby landfill equipment if needed. In addition, wheeled loaders and other heavy equipment may be rented or leased from local equipment rental companies. Processing equipment is maintained per the manufacturer's recommendations. Heavy equipment and water trucks are maintained per OC Waste & Recycling's comprehensive preventive maintenance program. OCWR has a fleet of heavy equipment and rental contracts and is able to immediately replace the dedicated pieces of heavy equipment at the composting facility as the need arises. Equipment utilized in the composting operation, including loaders, water truck, and screener, are powered by diesel fuel; potential power outages would not affect the equipment used at the BCG operation. Fuel for equipment is available through the existing diesel fuel storage tank at the FRB landfill.

SECTION 3.0

OPERATIONS PLAN

3.0 OPERATIONS PLAN

3.1 PROHIBITED MATERIALS

In accordance with 14 CCR, Section 17867 (a)(1), the BCG excludes composting of medical waste, hazardous waste, and unprocessed mammalian tissue. FRB scale attendants are trained to visually screen incoming vehicles for the presence of these prohibited wastes in accordance with the Load Checking Program (see Appendix A). Once loads are within the BCG boundaries, BCG staff will inspect the loads as they are emptied. Prohibited wastes will be stored in a designated area away from active operations utilizing proper storage containers and later hauled off-site by a subcontractor for proper disposal.

3.2 MATERIALS HANDLING

3.2.1 LOADCHECKING

In accordance with 14 CCR, Sections 17867(a)(4) (both current and proposed in accordance with SB 1383 as of April 20, 2020) and 17868.5(a)(1), the operator implements a load-checking program at the BCG. At a minimum, one truck per day or ten percent of daily incoming feedstock volume, whichever is greater. The load is visually inspected at the receiving area of the compost pad. All incoming loads will be checked for unacceptable waste material during the BCG operations (i.e., at scales, tipping floor, and pre-processing).

The elements of the Loadchecking Program (see Appendix A) include the following basic components:

- The incoming material undergoes load checking to ensure that physical contaminants are no greater than 1.0 percent of total weight. This aspect is accomplished by visual observation of incoming loads, and if necessary, load sorting to quantify percentage of contaminant materials. 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.

- Rejection of loads that do not meet contaminant content criteria or if the load contains materials that do not meet the definitions of agricultural material (strictly of plant origin), green material, vegetative food material, manure, or food material in Sections 17852(a)(20), (20)(A), (21), and (25).
- The Facility personnel are adequately trained to perform the load checking activities and records of training are maintained on-site.
- Protocol for prohibited waste storage.
- Documentation of load checks and loads rejected.

A load check form (similar to the one included in Appendix A) will be completed by Facility personnel to document the incident. A photograph of the load will also be included, as needed, to document rejection of the load.

3.2.2 DISPOSAL OF MATERIALS REMOVED

In accordance with 14 CCR, Section 17867(a)(14), measures will be actively implemented to prevent and remove physical contaminants in the compost and chipped and ground materials. BCG personnel will also be trained in recognition, proper handling, and disposition of prohibited materials.

In accordance with 14 CCR, Section 17867 (a)(11), disposal of physical contaminants and refuse removed from feedstock, compost, or chipped and ground material from the BCG operations will be separated and transported to an appropriate facility within seven days. Generally, materials removed from the BCG operations will be directed to the FRB Landfill for disposal. Prohibited materials removed from the BCG that are not suitable for disposal at the FRB Landfill will be stored according to applicable regulations and disposed of at an appropriate off-site facility.

In accordance with proposed 14 CCR, Section 17867 (a)(16) (operative January 1, 2022), the operator must determine the quarterly percentage of organic waste contained in materials sent to landfill disposal. To determine the percentage, the operator shall measure the amount of organic waste by weight present in the materials sent to landfill disposal.

The measurements required pursuant to this section shall be conducted at the following frequency:

- For each reporting period, the operator shall perform the sampling protocol required in Subdivision (a)(16)(B) over at least ten (10) consecutive operating days.
- An operator may use the results of samples conducted over a period of more than 10 days if the following apply:
  - If less than 10 additional days are sampled in the reporting period, the additional operating days where sampling is performed shall be a consecutive continuation of the original 10 consecutive days of sampling
  - If 10 additional operating days or more are selected for sampling the additional operating days shall be conducted on consecutive days but may be performed during a different part of the reporting period and are not required to be a continuation of the original 10 operating days.

The operator shall comply with Subdivision (a)(16)(A) by using the following protocol:

1. Take one (1) sample of at least two hundred (200) pounds of the materials that the operation or facility is sending to landfill disposal on that operating day. Each sample shall be:
   i. Representative of a typical operating day.
   ii. A random, composite sample taken either from various times during the operating day or from various locations within the pile(s) of material that will be sent to disposal.
   iii. Sample will be collected with shovels and placed in a storage bin for weighing. Weight will be performed on scales capable of measuring 200+ pounds and will be accurate to 0.1 pounds and scales capable of measuring 0.001 grams to 50 grams with 0.001 gram accuracy.
2. Record the weight of the sample. If the total weight of material sent to landfill disposal in a single operating day is less than 200 pounds, the operator shall sample all the material that is sent to landfill disposal that day.
3. Remove any material that is not organic waste and determine the remaining weight of the organic waste in the sample.
4. Then determine the ratio of organic waste present in the materials removed for landfill disposal by dividing the total from Subdivision (a)(16)(B)3 by the total from Subdivision (a)(16)(B)2.
5. Determine the total weight of organic waste that is sent to landfill disposal by multiplying the ratio determined pursuant to Subdivision (a)(16)(B)4 by the total weight of the materials sent to landfill disposal.

6. Determine the sum of outgoing weights of organic waste present in the materials that is sent to landfill disposal as determined pursuant to Subdivision (a)(16)(B)5.
7. Determine the ratio of organic waste sent to landfill disposal by dividing the total from Subdivision (a)(16)(B)6 by the total outgoing weights of material that is sent to landfill disposal.
8. Determine the percentage of organic waste present in the material sent to landfill disposal by multiplying the ratio as determined pursuant to Subdivision (a)(16)(B)7 by 100.

In accordance with 14 CCR, Section 17867(16)(C) the operator will conduct a measurement in the presence of the LEA when requested.

3.2.3 MATERIAL STORAGE

In accordance with 14 CCR, Section 17867 (5), every precaution will be taken to prevent the mixing of compostable material that has undergone pathogen reduction with material that has not undergone the process of pathogen reduction. The stockpile of mixed feedstock ready to be placed into a windrow will be stored in a separate area, away from the cured compost.

3.3 FACILITY CONTROLS

3.3.1 OPERATIONAL CONTROLS

In accordance with 14 CCR, Sections 17867(2) and 17867(3), the facility will be operated to minimize public nuisance and protect public health and safety. The potential issues identified for the site include odor impacts, fire, dust, vectors and birds, windblown litter, noise, and potential impacts to off-site traffic. Measures to control these potential issues are discussed in the following sections.

3.3.2 ODOR CONTROL

In accordance with 14 CCR, Section 17863.4, an odor impact minimization plan (OIMP) has been prepared for the BCG. The plan provides guidance to facility personnel by describing onsite odor control protocol. The OIMP for the BCG is included as Appendix B of this RCSI.

3.3.3 LITTER CONTROL

Litter control will be conducted at the BCG. All loads entering the facility are required to be covered to eliminate windblown litter from this potential source. Load receiving/inspection staff will be on hand to collect any obvious contaminants that could result in windblown litter as a result of unloading operations. Routine housekeeping will also be performed daily at the site as needed, including collection of any litter. Any litter collected is placed in covered receptacles and taken to the FRB Landfill.

3.3.4 HAZARD CONTROL

Handling activities at the facility will be conducted in a manner that minimizes hazards. Employees will not be permitted to work in operational areas until health and safety training, as well as specific applicable operational and hazardous materials training, has been completed (see Section 3.5). Visitors to the site will be required to park in designated parking areas to avoid circulation conflict with trucks. Proper signage and notices will be posted where appropriate to caution personnel and visitors. In the event that inclement weather restricts visibility to the extent that safe operations at the active operational areas are affected, all operational activities will be suspended until working conditions are considered to be safe again.

Personnel Protective Equipment

Operational hazards including, but not limited to, particulates and other inhalation hazards, hazardous material exposure, sharps and medical waste, equipment operation, etc. will be avoided by the proper use of personnel protective equipment (PPE). PPE such as steel-toe boots, puncture proof gloves, dust masks, and hard hats will comply with Occupational Safety & Health Administration (OSHA) based on the BCG standard operating procedures.

3.3.5 VECTOR, BIRD, AND ANIMAL CONTROL

Vector control measures will be actively conducted during the operations related to the BCG. The primary anticipated avian nuisance is seagulls. Types of vector nuisance include, but are not limited to; flies, rodents (mice, rats, squirrels, etc.), and other animals (coyotes, raccoons, opossums, etc.). Fly propagation will be

limited by the prompt deployment of feedstock into windrows and the periodic turning of the windrows. Other best management practices (BMPs) to address insect, bird, rodent, and other animal vectors will be implemented as-needed.

In the event that birds (primarily seagulls) become a nuisance, non-lethal noise-making devices will be utilized to startle and frighten birds away from the operations area. A qualified falconer may be contracted to use falconry as a means of bird control. In the event that flies, rodents, or other animals are found to be a problem, the appropriate control and/or extermination measures would be implemented.

3.3.6 NOISE CONTROL

Noise at the BCG will be kept to a minimum. Noise level at the facility will be minimized by the use and maintenance of proper mufflers on heavy equipment. Workers in high-noise areas will be required to use full-ear covering noise reduction devices, in compliance with the State and Federal regulations.

3.3.7 DUST/PARTICULATE/PATHOGENIC ORGANISMS CONTROL

Human contact with and inhalation, ingestion, and transportation of dust, particulates, and pathogenic organisms will be actively controlled at the BCG. To minimize these occurrences, moisture will be monitored and water added during the compost process as necessary. In addition, unpaved roads at the BCG will be surfaced with crushed recycled asphalt concrete or other road base material in order to minimize dust generation. Human contact with particulates will also be controlled through the proper use of dust masks and other PPE as appropriate.

3.3.8 TRAFFIC CONTROL

Traffic flow through the BCG operational area will be controlled to prevent interference with or creation of a safety hazard to adjacent operations and on-site personnel. On-site traffic control will consist of signs to direct haul vehicles, visitors, and employees to the appropriate areas. Reflection cones and flagging will also be used, as appropriate. On-site vehicle speed will be limited to 15 miles per hour as dictated by traffic signs. The flow of material and traffic are shown on Figures 3, 4, and 5.

3.3.9 FIRE PREVENTION

The BCG will have fire prevention systems in place. Temperature monitoring of piles will be performed. Fire suppression equipment is continuously available at the FRB Landfill. The proposed on-site fire suppression consists of (see Figures 3, 4, and 5):

- One water tank with a minimum 100,000 gallon storage capacity services the facility;
- Water tank connected to separate pipes, one for operations and one for fire water;
- Access to fire hydrants along the looped fire water line; and
- One on-site 4,000 gallon water truck.

The undercarriage of vehicles and equipment will be inspected regularly and kept free of brush and combustibles. Access between windrow piles will be maintained at a minimum twenty-foot width to accommodate fire control equipment. The design and proposed operation is in compliance with the perimeter clearance requirements. The agency having jurisdiction over the site is the Orange County Fire Authority. The OCFA has reviewed and approved the Fire Protection Plan for the BCG Phases 1A and 1B and issued Service Request (SR) # 282552 in September 2019. Currently the FPP for Phase 1C is under review and that Phase of the project will not be constructed without OCFA approval.

3.3.10 ENCLOSED OPERATIONS

The BCG operations will be conducted outside. Therefore, additional ventilation to prevent adverse public health effects from decomposition gases, as required by 14 CCR, Section 17867 (12), will not be necessary.

3.3.11 LEACHATE MANAGEMENT

14 CCR, Section 18227(d) requires a description of methods used to control leachate. The only source of leachate is stormwater contacting the compost piles forming compost leachate which will be collected in the lined stormwater pond and used for compost processing. For Phase 1C the active CASP compost piles will be initially covered with a synthetic semi-permeable cover which will limit contact water. The BCG is designed so that the windrows are sloped such that

compost leachate and stormwater flows to the storm water pond. Management of the compost leachate/stormwater collected in the storm water pond will include utilization of the collected liquid for moisture control of active compost windrows, evaporation, and/or utilized for dust control on the lined areas of the FRB Landfill. Odor will be dealt with according to the OIMP (Appendix B). The compost piles act as a biofilter to control odors when the compost leachate is applied. Grading will be maintained, and housekeeping will be performed to ensure that contact water freely drains to the basin. Settlement is expected to occur so inspection for ponding will be performed on a routine basis and remedial grading will be periodically conducted to eliminate any ponding on top of the pad. Any significant ponded liquid will be pumped to the basin.

3.4 FACILITY IMPROVEMENTS

Facility improvements will be accomplished in accordance with 14 CCR, Section 17867. Restroom facilities and hand and eye wash stations will be available on-site.

3.4.1 SIGNS

In accordance with 14 CCR, Section 17867(8), an identification sign will be posted at the point of access to the BCG. Additional signage describing traffic flow, prohibited materials and cautions will also be prominently posted. This sign will be large enough to be visible and clearly read by vehicle drivers entering the site. Entry signs will provide the following information:

- Facility name;
- Name of operator;
- Hours of operation;
- Acceptable materials;
- Non-acceptable materials;
- Schedule of charges, if applicable; and
- Emergency phone numbers.

In addition, other information such as speed limits, the location of all tipping and parking areas and the allowable direction of traffic flow will be clearly posted.

3.4.2 COMMUNICATIONS EQUIPMENT

Adequate communication equipment will be available to site personnel to allow response to emergencies. Generally, these communication devices will include portable hand-held radios for site personnel to communicate with each other and the staff, and cellular phones.

3.4.3 SITE ATTENDANT

In accordance with 14 CCR, Section 17867(15), a site attendant will not be needed at all times as it will not be open to the public. However, staff will be assigned to the BCG during operating hours.

3.4.4 SITE SECURITY

In accordance with 14 CCR, Section 17867(6), unauthorized human and animal access to the facility is primarily prevented by the FRB Landfill security. Additionally, the FRB Landfill has a gated main public site entrance at Bee Canyon Access Road. From the main entrance, a paved access road will lead to the BCG entrance.

3.5 TRAINING

In accordance with 14 CCR, Section 17867.5, all personnel assigned to work part of the BCG operations will be trained in their respective areas of work. Staff will be subject to initial training and periodic (e.g., annual) refresher training. This includes classroom instructions and job/task training under the guidance of a supervisor or instructor. Employees will not be allowed to work in operational areas until health and safety, hazardous material recognition, and specific applicable operational training, has been completed. Trainees will be supervised until they are fully capable of performing their job responsibilities.

The job-task training not only includes the requirements set forth by the Composting Operating Standards of Article 6, but also includes physical contaminants and hazardous materials recognition and screening, with emphasis on odor impact management and emergency procedures. A record of personnel training will be maintained as stated in Section 3.7.

3.6 SAMPLING REQUIREMENTS

The BCG is anticipated to sell or give away greater than 1,000 cy of compost annually. Therefore, the operator of the BCG will be required to comply with the sampling requirements mandated by 14 CCR, Section 17868.1. All composite samples will be representative and random and will be obtained by taking (12) mixed samples in accordance with 14 CCR, Section 17868.1(b). The BCG will maintain records of all test results generated by compliance with Environmental Health Standards for composting facilities as described in Section 3.7.6.

3.6.1 METALS CONCENTRATION

Metals analyses will be performed on the compost by analyzing one composite sample for every 5,000 cubic-yards of compost produced in accordance with 14CCR, Section 17868.1(a)(1). Composite samples will be analyzed for maximum acceptable metal concentrations as specified in 14 CCR, Section 17868.2, and will be conducted by a laboratory certified by the California Department of Health Services.

3.6.2 PATHOGEN REDUCTION

BCG operations will meet the pathogen reduction requirements of 14 CCR, Section 17868.3. Accordingly, each pile will be routinely monitored for temperature and turned/aerated in order to meet the pathogen reduction protocol in Section 2.2.4. Additionally, sampling will be performed on the finished compost, as needed.

3.6.3 PHYSICAL CONTAMINATION

BCG operations will perform sampling to determine percent physical contamination to meet the requirements of 14 CCR, Section 17868.3.1. Sampling of every 5,000 cubic-yards of compost produced will be performed to determine the percentage of physical contaminants greater than 4 millimeters in the sample as described in Section 2.2.4.

3.7 RECORD KEEPING

In accordance with 14 CCR, Section 17869, all records will be maintained at the FRB Landfill main administration building for a period of at least five years. In addition, the operator will notify the LEA by telephone within 24 hours of all incidents requiring the implementation of emergency procedures. OCWR will submit copies of specified records to the LEA upon request or at a frequency approved by the LEA, in accordance with 14 CCR, Section 17414(c).

3.7.1 INSPECTION OF RECORDS

All records will be maintained at the FRB Landfill administration main office and will be available for inspection by the LEA and duly authorized regulatory agencies during all normal business hours.

3.7.2 SPECIAL OCCURRENCES

Operating personnel will be trained to report any incidents to the operations supervisors. The supervisors will report the incident to the site superintendent and site manager. All site managers and supervisors will be authorized to make an entry in the special occurrence logbook. Incidents that may be recorded in the logbook include, but not limited to:

- Accidents
- Fire
- Injury
- Property damage
- Explosions
- Hazardous Waste Incidents
- Flooding
- Receipt or Rejection of Prohibited Materials
- Earthquake Damage
- Public Complaints
  - Noise
  - Dust
  - Odor
- Other unusual occurrences
- Regulatory Agency visits

- Citations issued

The log records the date, time and a detailed explanation of the incident. The logbook will be kept in the administration building and is made available to the LEA upon request.

3.7.3 PUBLIC COMPLAINTS

The operator will maintain a record of all complaints including the nature of the complaint; the date of the complaint; name, address, telephone number of the person(s) making the complaint, and any action(s) taken in response. Information is documented in the logbook. This information will be available at the FRB Landfill site office for inspection during normal business hours.

3.7.4 QUANTITIES RECEIVED RECORDS

The facility will keep records of each transaction on the truck scale computer including the origin of waste in accordance with 14 CCR, Section 17869(d) and (e) (proposed regulations per SB 1383 as of April 20, 2020). The weight of daily incoming feedstock and compost materials produced will be recorded by source, material type and tonnage and entered into a computer database. Records will include the following:

1. Quarterly percentage of organic waste contained in materials sent to landfill disposal as calculated in accordance with 14 CCR, Section 17867(a)(16).
2. Daily outgoing weights of material sent to disposal.
3. Daily outgoing weights of compost produced.
4. Daily incoming weights by material type.
5. The weight of compostable material sent offsite to any destinations(s) other than an authorized permitted solid waste facility or operation.

The records will be maintained for five (5) years in the operating record.

3.7.5 LOAD CHECK RECORDS

In accordance with 14 CCR, Section 17409.5, the operator will maintain the following loadchecking records:

1. Number of random loadchecks to be performed.
2. Location for the storage of prohibited wastes removed during the loadchecking process that is separately secured or isolated.
3. Records of loadchecks performed and the training of personnel in evaluating the amount of contamination in source separated organic waste.

This information will be available at the FRB Landfill site office for inspection during normal working hours.

3.7.6 TEST RESULTS RECORDS

The operator will retain records of all laboratory testing results conducted on final compost including but not limited to: metal concentrations, fecal coliform and Salmonella sp. densities, pathogen reduction methods, physical contamination, temperature measurements, and dates of windrow turnings. A record of proper chain-of-custody forms submitted to the lab for sampling will be kept on file.

3.7.7 RECORDS OF ON-SITE INJURIES AND PUBLIC HEALTH COMPLAINTS

The operator will retain records of all complaints of adverse health effects to the public that are attributed to operations at the BCG. This information will be available at the FRB Landfill site office for inspection during normal working hours.

3.7.8 EMPLOYEE TRAINING RECORDS

A record of personnel training will be maintained by the site superintendent. This information will be available at the FRB Landfill site office for inspection during normal working hours.

3.7.9 OTHER RECORDS

All data collected from the BCG will be compiled and analyzed by the operator. Data will include temperature monitoring logs, sampling analysis results, moisture logs, and any other relevant research data. Data will be studied to determine optimal operating conditions and will be used to develop the necessary report and plans to comply with all regulatory requirements.

SECTION 4.0

SITE CLOSURE INFORMATION

4.0 SITE CLOSURE INFORMATION

4.1 SITE RESTORATION

In accordance with 14 CCR, Section 17870, the BCG will provide the LEA a written notice of intent to perform site restoration, at least 30 days prior to beginning restoration. Restoration efforts will include efforts necessary to protect public health, safety, and the environment. In accordance with 14 CCR, Section 17870(c), the BCG will perform the following site restoration procedures upon completion of operations and termination of services in the current location:

- Residues related to the operations will be cleaned from facility grounds, storm water pond, and drainage areas. Residual materials will be recycled, reused, or disposed accordingly;
- The storm water pond liner will be removed and disposed of at the FRB Landfill or other designated disposal site. The area will be graded and backfilled as needed to comply with grading and drainage requirements for Class III landfills;
- All heavy equipment will be cleaned and removed from the facility;
- The water lines and fire hydrants within the footprint of the compost area will be removed and either recycled or disposed of at the FRB Landfill or other designated disposal site.
- The landfill intermediate cover will be inspected and repairs made, as necessary.

The compost pad area is partially located on a portion of the landfill that has been filled. The compost pad may be moved as necessary during the remaining operating life of the landfill. Ultimately the compost pad will be moved and the landfill will be closed in accordance with State of California approved closure activities. The BCG may remain active during the post-closure period of the FRB Landfill; it would be relocated to closed portions a-top final cover. These activities include, but are not limited to, the capping of the landfill to minimize the infiltration of rainwater and emissions of gases from the decomposing waste. The final restored area will consist of private open space with perennial grasses similar to adjacent foothills. No structures will remain after the compost operations are completed and terminated.

SECTION 5.0

REFERENCES

5.0 REFERENCES

1. California Code of Regulations, Title 14, Chapters 3 and 5.

2. CalRecycle September 22, 2008, "Solid Waste Facility Permit No. 30-AB-0360 for the Frank R. Bowerman Landfill," issued by the County of Orange Health Care Agency Environmental Health acting as the Local Enforcement Agency.

3. CalRecycle November 2020, “Short-lived Climate Pollutants (SLCP): Organic Waste Reductions Final Regulation Text.”

4. Waste Discharge Requirement Order No. R8-2018-0011 for the Frank R. Bowerman Landfill, issued March 23, 2018.

5. State Water Resources Control Board, April 7, 2020, General Waste Discharge Requirements (WDR) for Commercial Composting Operations Order No. WQ 2020-0012-DWQ.

6. SWRCB Industrial Stormwater Permit Order No. 2014-0057-DWQ and NPDES Permit No. CAS000001, adopted April 1, 2014.

7. Compostable Materials Handling Facility Permit, SWIS No. 30-AB-0469, issued December 14, 2020.

8. SWT Engineering, June 2013, Amendment 1: April 2019, “Joint Technical Document, Frank R. Bowerman Landfill.”

TABLES

TABLE 1

OC WASTE AND RECYCLING

BEE CANYON GREENERY (PHASE 1A)

PROCESS (OPERATIONS) WATER DEMAND

Previous Layout

By weight

210 Tons × 2000 lbs / 1 Tons = 420,236.41 lbs of Feed stock

420,236.41 Lbs of Feedstock × 25% water = 105,059.10 Lbs of water

25% of water 105,059.10 CF / 62.4 Lbs of H2O = 1,683.64 CF of water

12,593.62 gallons

Initial wetting to bring feed stock to 50% mositure by weight

12,593.62 gallons

ACTIVE COMPOST WINDROW 1% WATER REPLENISHMENT

59,253 CY × 0.4 Tons / CY × 2000 Lbs / 1 ton = 47,402,666.67 lbs of Feed stock

47,402,666.67 Lbs of Feedstock × 1% water = 474,026.67 Lbs of water

2% of water 474,026.67 CF / 62.4 Lbs of H2O = 7,596.58 CF of water

56,822.43 gallons

Process Water Need: 56,822.43 gallons/day

ACTIVE COMPOST WINDROW 2% WATER REPLENISHMENT

59,253 CY × 0.4 Tons / CY × 2000 Lbs / 1 ton = 47,402,666.67 lbs of Feed stock

47,402,666.67 Lbs of Feedstock × 2% water = 948,053.33 Lbs of water

2% of water 948,053.33 CF / 62.4 Lbs of H2O = 15,193.16 CF of water

113,644.85 gallons

Process Water Demand: 69,416.05 to 126,238.48 gallons/day

Assumptions:

- Feedstock is Curbside green waste (yard trimming) with an estimated moisture content of 25-percent by weight.
- Target moisture is 50-percent initially and through the active composting phase.
- Estimated moisture loss that would need to be replenished during the active composting phase is estimated at one to two-percent (1% to
- Feedstock and seasonal variations will impact initial moisture and daily loss, affecting water utilization.

TABLE 2
OC WASTE AND RECYCLING
BEE CANYON GREENERY (PHASE 1A and 1B)
PROCESS (OPERATIONS) WATER DEMAND

INITIAL WINDROW PILE					
By weight					
437 Tons	2000 lbs / 1 Tons			873,758.87	lbs of Feed stock
873,758.87 Lbs of Feedstock	25% water			218,439.72	Lbs of water
25% of water 218,439.72	CF / 62.4 Lbs of H2O			3,500.64	CF of water
				26,184.76	**gallons**
Initial wetting to bring feed stock to 50% mositure by weight					
26,184.76 gallons					
ACTIVE COMPOST WINDROW 1% WATER REPLENISHMENT					
123,200 CY	0.4 Tons / CY	2000 Lbs / 1 ton		98,560,000.00	lbs of Feed stock
98,560,000.00 Lbs of Feedstock	1% water			985,600.00	Lbs of water
2% of water 985,600.00	CF / 62.4 Lbs of H2O			15,794.87	CF of water
				118,145.64	**gallons**
Process Water Need:	**118,145.64**	**gallons/day**			
ACTIVE COMPOST WINDROW 2% WATER REPLENISHMENT					
123,200 CY	0.4 Tons / CY	2000 Lbs / 1 ton		98,560,000.00	lbs of Feed stock
98,560,000.00 Lbs of Feedstock	2% water			1,971,200.00	Lbs of water
2% of water 1,971,200.00	CF / 62.4 Lbs of H2O			31,589.74	CF of water
				236,291.28	**gallons**
Process Water Demand:	**144,330.40**	**to**	**262,476.04**	**gallons/day**	

Assumptions:
- Feedstock is Curbside green waste (yard trimming) with an estimated moisture content of 25-percent by weight.
- Target moisture is 50-percent initially and through the active composting phase.
- Estimated moisture loss that would need to be replenished during the active composting phase is estimated at one to two-percent
- Feedstock and seasonal variations will impact initial moisture and daily loss, affecting water utilization.

Table 3
OC Waste and Recycling
Bee Canyon Greenery at the Frank R. Bowerman Landfill
Phase 1C Process (Operations) Water Demand

Receiving Material Moisture Conditioning					
By weight					
876 Tons	2000 lbs / 1 Tons			1,751,434.67	lbs of Feed stock
1,751,434.67 Lbs of Feedstock	25% water			437,858.67	Lbs of water
25% of water 437,858.67	CF / 62.4 Lbs of H2O			7,016.97	CF of water
				52,486.90	**gallons**
Initial wetting to bring feed stock to 50% moisture by weight					
52,486.90 gallons					
CURING WINDROW 0.5% WATER REPLENISHMENT					
66,992 CY	0.4 Tons / CY	2000 Lbs / 1 ton		53,593,900.80	lbs of Feed stock
53,593,900.80 Lbs of Feedstock	0.5% water			267,969.50	Lbs of water
2% of water 267,969.50	CF / 62.4 Lbs of H2O			4,294.38	CF of water
				32,121.99	**gallons**
Process Water Need:	**32,121.99**	**gallons/day**			
CURING WINDROW 1.0% WATER REPLENISHMENT					
66,992 CY	0.4 Tons / CY	2000 Lbs / 1 ton		53,593,900.80	lbs of Feed stock
53,593,900.80 Lbs of Feedstock	1.0% water			535,939.01	Lbs of water
2% of water 535,939.01	CF / 62.4 Lbs of H2O			8,588.77	CF of water
				64,243.97	**gallons**
Process Water Demand:	**84,608.89**	**to**	**116,730.88**	**gallons/day**	

Assumptions:
- Feedstock is Curbside green waste (yard trimming) with an estimated moisture content of 25-percent by weight.
- Target moisture is 50-percent initially and through the active composting phase.
- Estimated moisture loss that would need to be replenished during the active composting phase is estimated at one half to one-percent (1/2% to 1%) per day.
- Feedstock and seasonal variations will impact initial moisture and daily loss, affecting water utilization.

Table 9

OC Waste and Recycling

Bee Canyon Greenery (Phase 1A) - Windrow Turner

Open Windrow Composting Facility Area and Volume Calculations

Volume Of Piles		
100	Ft	Pile Length
20	Ft	Pile Width
12	Ft	Pile Height
15,840	CF	Volume of Pile in Cubic Fee[t1]
587	CY	Volume of Pile in Cubic Yards[1]

Materials Receiving		
210	Tons	Incoming Materials Received Per Day
800	lbs/cy	Density of Compost Material (Pre-Grind)
0.4	Tons/cy	Density of Compost Material (Pre-Grind)
6	days	Operating Days Per Week
525	CY	Volume of Incoming Material (One Day)

Volume Required for Active Windrow Phase		
3,152	CY	Volume of Compost Received Per Week
3,152	CY	0% Reduction Due to Mixing
12	weeks	Phase I Curing Time
37,821	CY	Total Volume Generated

64 Required Number of Active Compost Piles

Volume Required for Compost Curing Phase		
3,152	CY	Volume of Phase 1 Compost Per Week
2,679	CY	15% Volume Reduction During Phase I
8	weeks	Phase II Curing Time
21,432	CY	Total Volume Generated

37 Required Number of Compost Curing Piles

101 Total Number of Piles for Phase I

Based on Assumptions:

587	CY	= Volume of Each Pile
101	Piles	= Total Number of Piles
59,253	CY	= Total Site Volume
498,813	SF	= Total Compost Area Based on Figure
170,132	SF	= Total Operations/Storage Area Based on Figure
20,210	CY	= Total Operations/Storage Volume

Volume Required for Operations/Storage Area		
20,210	CY	Volume of Compost Storage
6,063	CY	30% Volume Reduction Due to Operation Constraints
14,147	CY	Total Volume of Compost Storage

73,925 CY *Total Amount of Materials On-Site*

Say 74,000 CY

Note 1: The volume was calculated as using the formula W x H x 0.66 X L. The 0.66 factor is applied to the volume to account for the rounded quadrilateral shape that forms based on equipment. This formula is based on common composting practices.

Table 10

OC Waste and Recycling

Bee Canyon Greenery (Phase 1A and 1B) - Windrow Turner

Open Windrow Composting Facility Area and Volume Calculations

Volume Of Piles		
100	Ft	Pile Length
20	Ft	Pile Width
12	Ft	Pile Height
15,840	CF	Volume of Pile in Cubic Feet[1]
587	CY	Volume of Pile in Cubic Yards[1]

Materials Receiving		
437	Tons	Incoming Materials Received Per Day
800	lbs/cy	Density of Compost Material (Pre-Grind)
0.4	Tons/cy	Density of Compost Material (Pre-Grind)
6	days	Operating Days Per Week
1,092	CY	Volume of Incoming Material (One Day)

Volume Required for Active Windrow Phase		
5,955	CY	Volume of Compost Received Per Week
5,955	CY	0% Reduction Due to Mixing
12	weeks	Active Composting Phase Curing Time
71,460	CY	Total Volume Generated

122 Required Number of Active Compost Piles

Volume Required for Compost Curing Phase		
5,955	CY	Volume of Active Phase Compost Per Week
5,062	CY	15% Volume Reduction During Active Phase
8	weeks	Phase II Curing Time
40,494	CY	Total Volume Generated

69 Required Number of Compost Curing Piles

191 Total Number of Piles for Phase I and II

Based on Assumptions:

587	CY	= Volume of Each Pile
191	Piles	= Total Number of Piles
112,067	CY	= Total Site Volume
981,045	SF	= Total Compost Area Based on Figure
200,905	SF	= Total Operations/Storage Area Based on Figure
22,950	CY	= Total Operations/Storage Volume

Volume Required for Operations/Storage Area		
22,950	CY	Volume of Compost Storage
6,885	CY	30% Volume Reduction Due to Operation Constraints
16,065	CY	Total Volume of Compost Storage

129,111 CY *Total Amount of Materials On-Site*

Say 130,000 CY

Note 1: The volume was calculated as using the formula W x H x 0.66 X L. The 0.66 factor is applied to the volume to account for the rounded quadrilateral shape that forms based on equipment. This formula is based on common composting practices.

Table 11
OC Waste and Recycling
Bee Canyon Greenery (Phase 1C) at the Frank R. Bowerman Landfill
CASP Composting Facility Area and Volume Calculations

Volume Of CASP Piles		
88.5	Ft	Pile Length
22	Ft	Pile Width
12	Ft	Pile Height
15,420	CF	Volume of Pile in Cubic Feet[1]
571	CY	Volume of Pile in Cubic Yards[1]

Volume Of Curing Piles		
100	Ft	Pile Length
20	Ft	Pile Width (25' maximum - typical is 20')
12	Ft	Pile Height
15,840	CF	Volume of Pile in Cubic Feet
587	CY	Volume of Pile in Cubic Yards

Materials Receiving		
876	Tons	Incoming Materials Received Per Day
800	lbs/cy	Density of Compost Material (Pre-Grind)
0.4	Tons/cy	Density of Compost Material (Pre-Grind)
6	days	Operating Days Per Week
2189	CY	Volume of Incoming Material (One Day)

Volume Required for CASP Phase		
13,136	CY	Volume of Compost Received Per Week
13,136	CY	0% Reduction Due to Mixing
4	weeks	CASP Compost Time
52,543	CY	Total Volume Generated

92 Required Number of Active Compost Piles

Volume Required for Compost Curing Phase		
13,136	CY	Volume of CASP Phase Per Week
11,165	CY	15% Volume Reduction During Phase I
6	weeks	Compost Curing Time
66,992	CY	Total Volume Generated

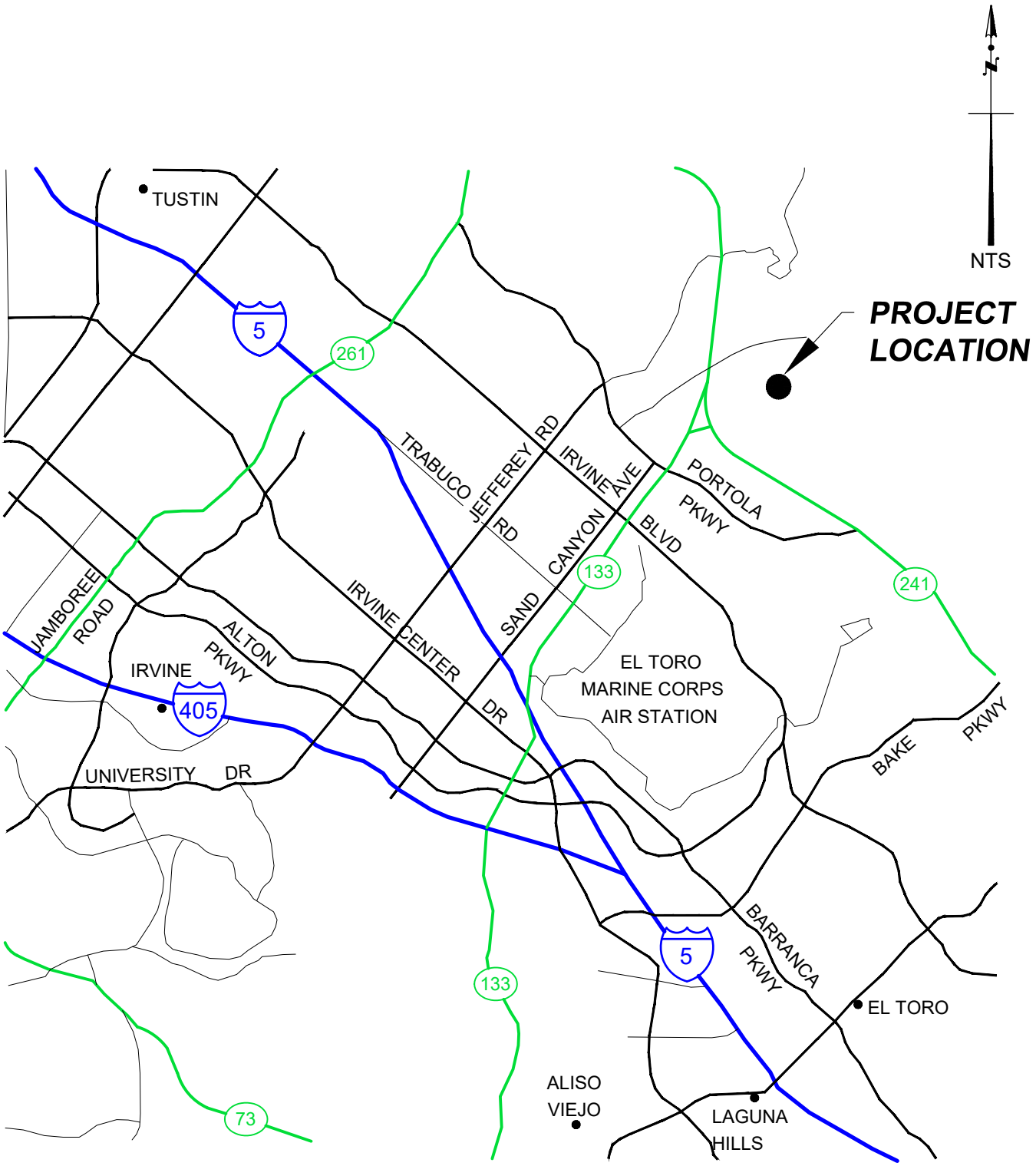
114 Required Number of Compost Curing Piles

Based on Assumptions:

571	CY	= Volume of CASP Each Pile
92	Piles	= Total Number of Piles
52,543	CY	= Total CASP Volume
587	CY	= Volume of Curing Piles
114	Piles	= Total Number of Curing Piles
66,992	CY	= Total Curing Volume
2,189	CY	= Volume of Feedstock Recieved
121,725	***CY***	***Total Amount of Materials On-Site***

Note 1: The volume was calculated as using the formula W x H x 0.66 X L. The 0.66 factor is applied to the volume to account for the rounded quadrilateral shape that forms based on equipment. This formula is based on common composting practices.

FIGURES



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BEE CANYON GREENERY

SITE LOCATION MAP

FIGURE 1

P:\OCWR\FRB\BEE CANYON GREENERY\CAD\SHEETFILES\FIGURES\PHASE 1B\C-800 SITE LOCATION MAP.DWG 12/5/2022 4:46 PM

P:\OCWR\FRB\Bee Canyon Greenery\CAD\SheetFiles\Figures\Phase 1B\C-801 Existing Site Layout

DATE OF TOPOGRAPHY: SEPTEMBER 3, 2021

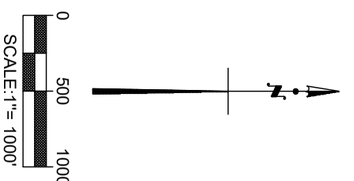

FIGURE 2	BEE CANYON GREENERY	OC WASTE & RECYCYLING	
	EXISTING SITE LAYOUT	DESIGNED BY : V.H.Y.	DATE: 03-2022
		DRAWN BY : R.C.W.	PROJ. NO.: 2018-0180B
		CHECKED BY : V.B.	
		APPROVED BY : G.E.S.	

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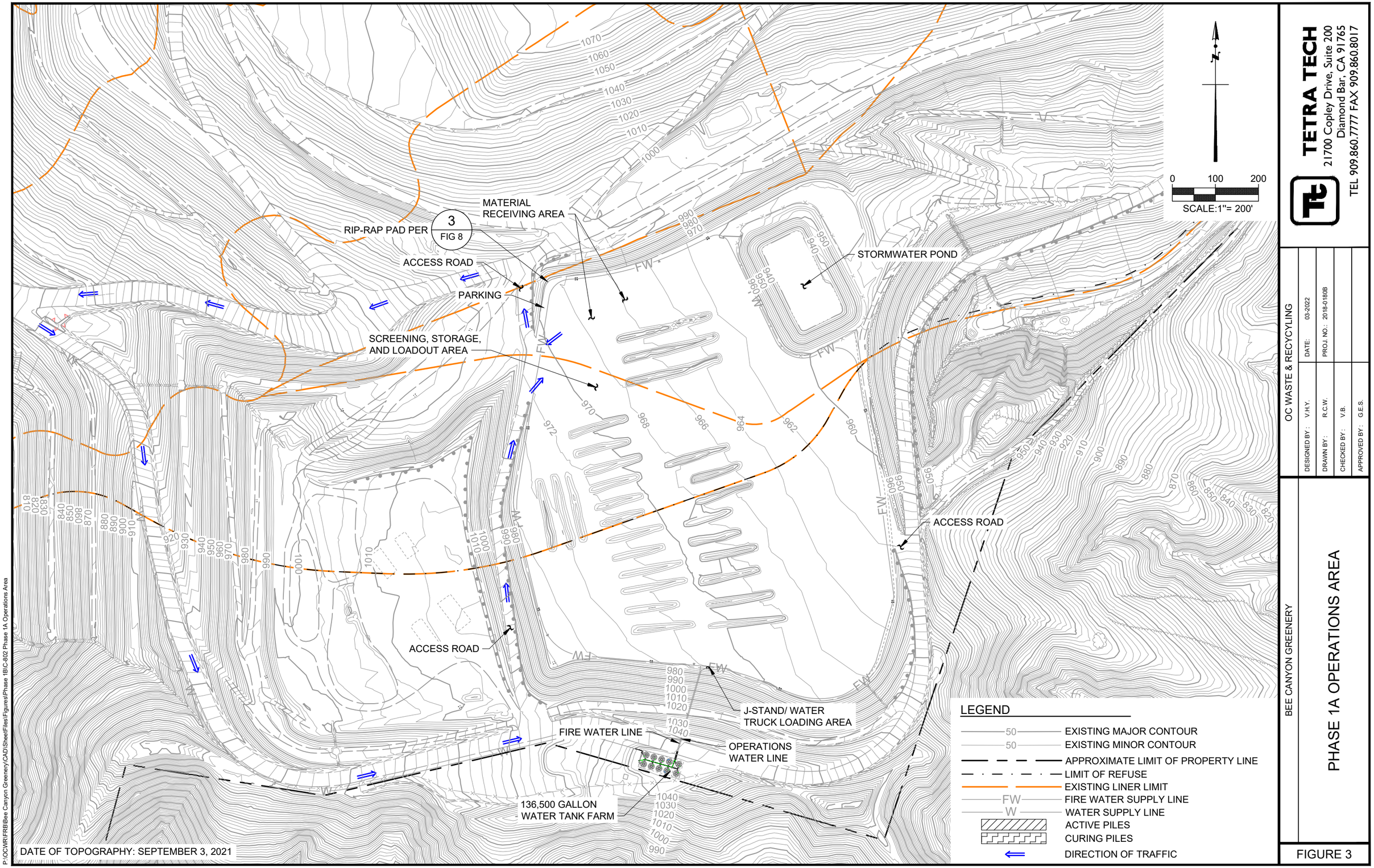

DATE OF TOPOGRAPHY: SEPTEMBER 3, 2021

P:\OC\WR\FRB\Bee Canyon Greenery\CAD\SheetFiles\Figures\Phase 1B\C-802 Phase 1A Operations Area

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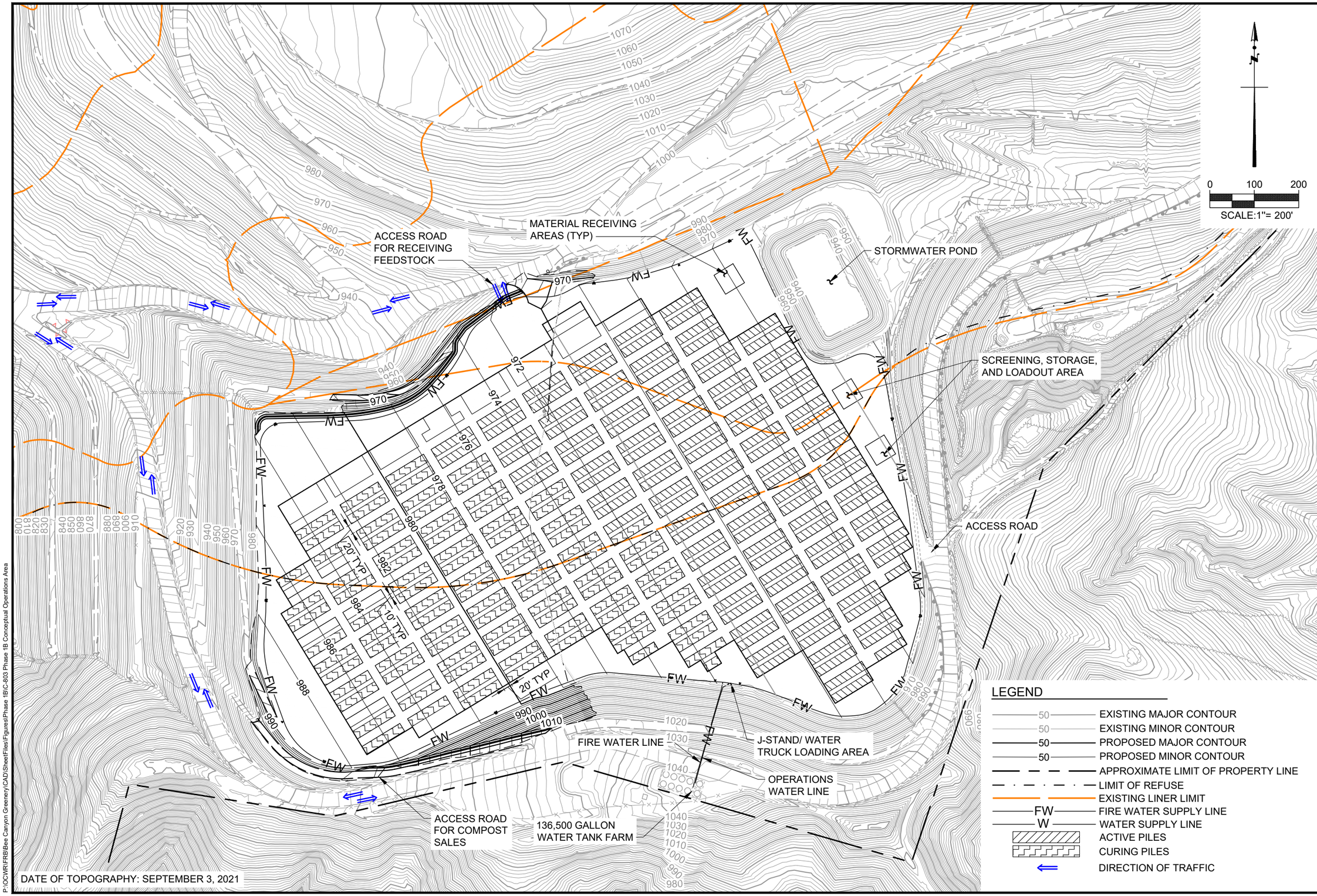
OC WASTE & RECYCLING

DESIGNED BY :	V.H.Y.	DATE:	03-2022
DRAWN BY :	R.C.W.	PROJ. NO.:	2018-0180B
CHECKED BY :	V.B.		
APPROVED BY :	G.E.S.		

BEE CANYON GREENERY

PHASE 1A OPERATIONS AREA

FIGURE 3



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TEL 909.860.7777 FAX 909.860.8017

OC WASTE & RECYCLING

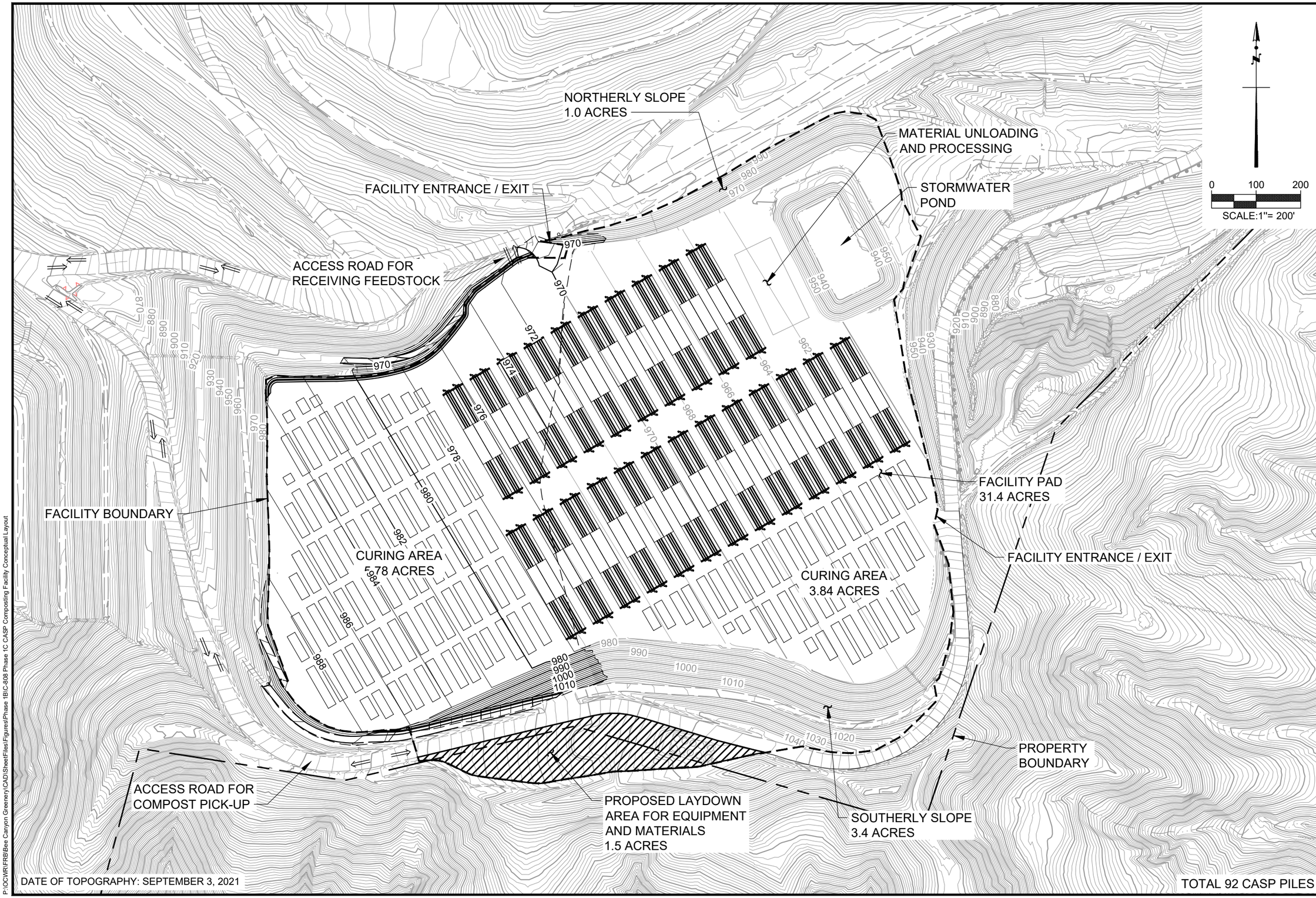
DESIGNED BY :	V.H.Y.	DATE:	03-2022
DRAWN BY :	R.C.W.	PROJ. NO.:	2018-0180B
CHECKED BY :	V.B.		
APPROVED BY :	G.E.S.		

BEE CANYON GREENERY

PHASE 1B CONCEPTUAL OPERATIONS AREA

FIGURE 4

P:\OCWR\FRB\Bee Canyon Greenery\CAD\SheetFiles\Figures\Phase 1B\IC-803 Phase 1B Conceptual Operations Area



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OC WASTE & RECYCLING

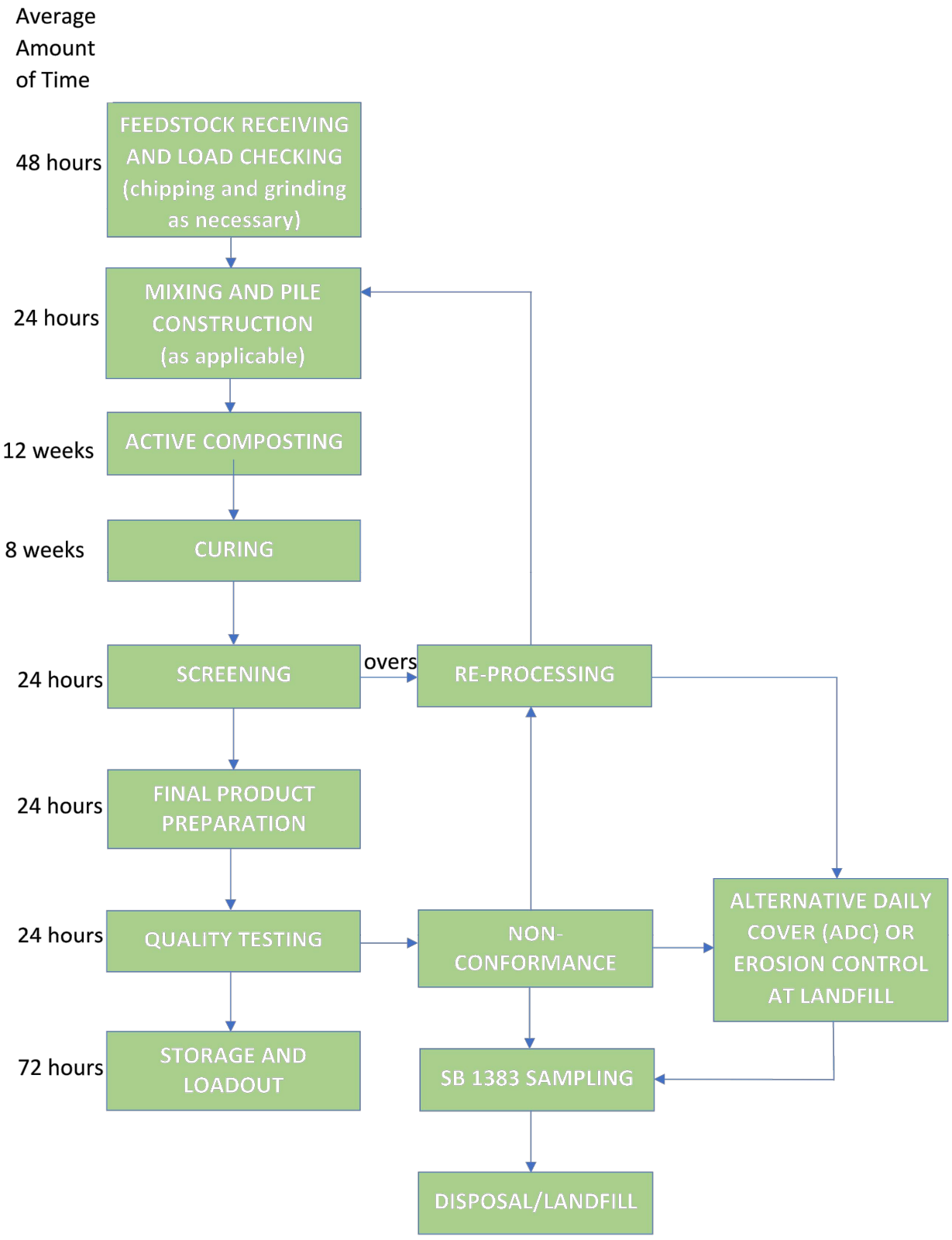
DESIGNED BY :	V.H.Y.	DATE:	03-2022
DRAWN BY :	R.C.W.	PROJ. NO.:	2018-0180B
CHECKED BY :	V.B.		
APPROVED BY :	G.E.S.		

BEE CANYON GREENERY

PHASE 1C CASP COMPOSTING FACILITY CONCEPTUAL LAYOUT

FIGURE 5

P:\OCWR\FRB\Bee Canyon Greenery\CAD\SheetFiles\Figures\Phase 1B\C-808 Phase 1C CASP Composting Facility Conceptual Layout



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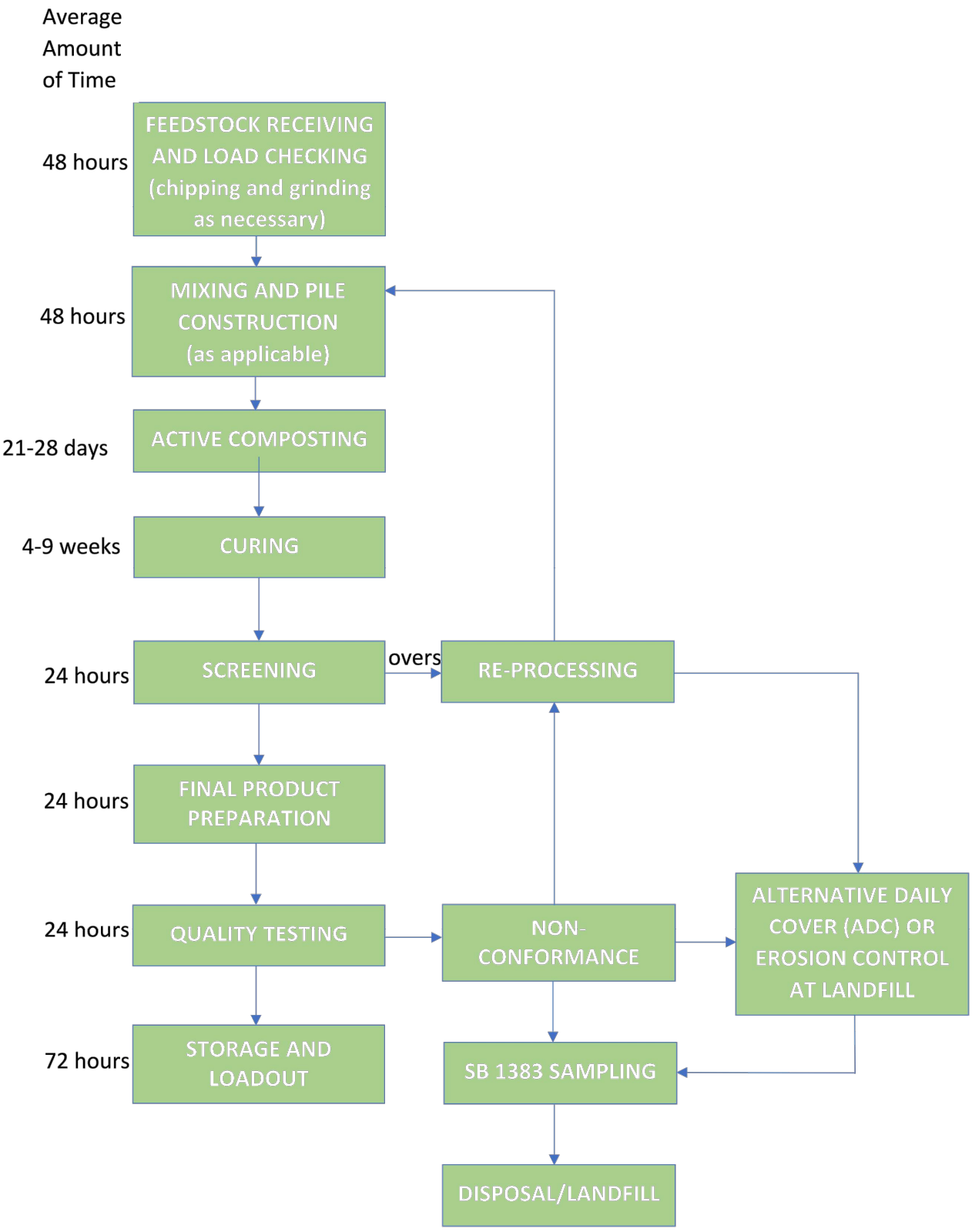
BEE CANYON GREENERY

PROCESS FLOW DIAGRAM
PHASES 1A AND 1B WINDROW

FIGURE 6A

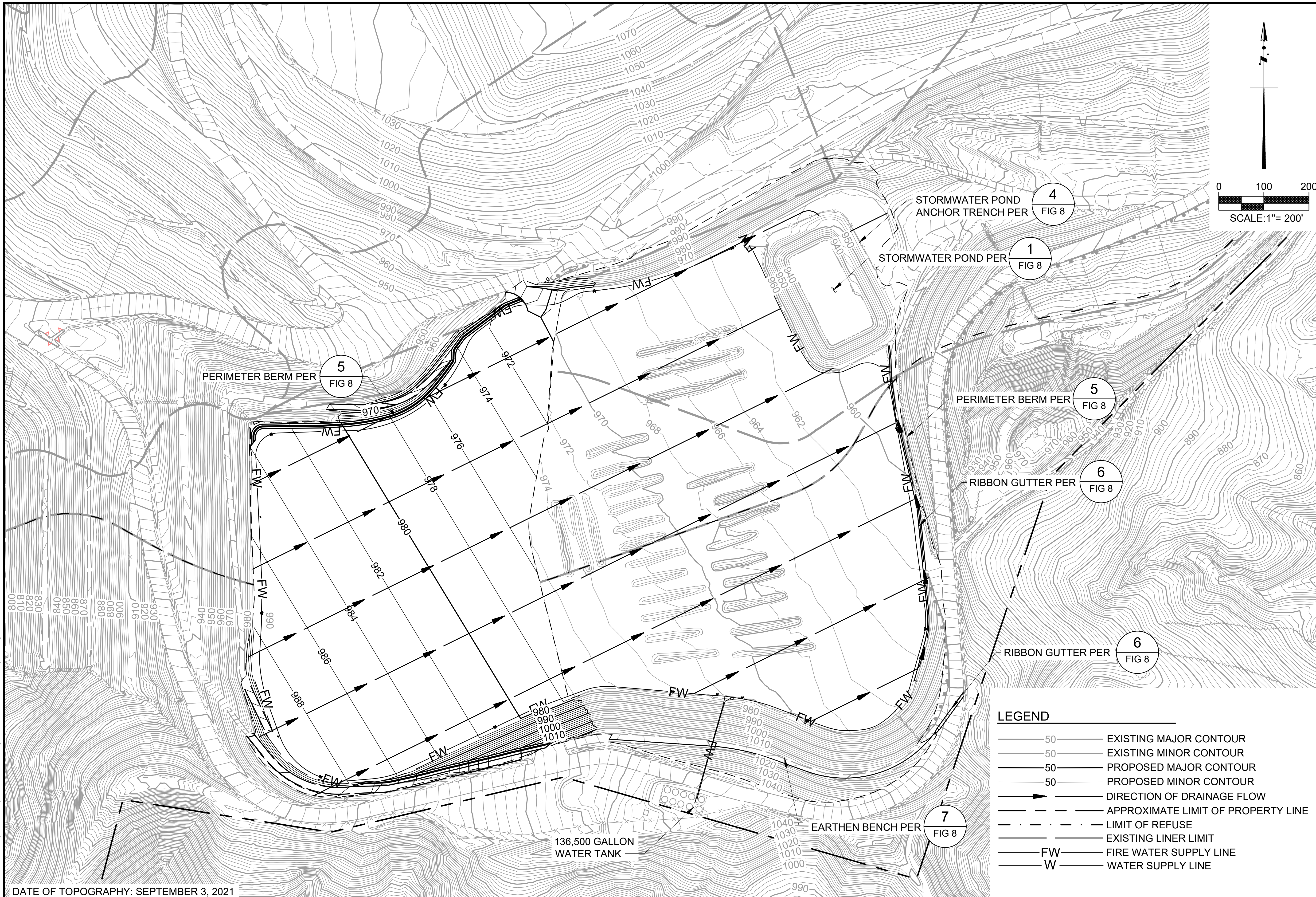


TETRA TECH
21700 Copley Drive, Suite 200,
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

BEE CANYON GREENERY

PROCESS FLOW DIAGRAM PHASES 1C CASP

FIGURE 6B



P:\OCWR\FRB\Bee Canyon Greenery\CAD\SheetFiles\Figures\Phase 1B\C-804 Facility Drainage Plan

TETRA TECH
21700 Copley Drive, Suite 200
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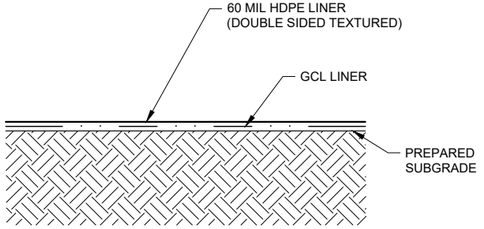
OC WASTE & RECYCLING

DESIGNED BY :	V.H.Y.	DATE:	03-2022
DRAWN BY :	R.C.W.	PROJ. NO.:	2018-0180B
CHECKED BY :	V.B.		
APPROVED BY :	G.E.S.		

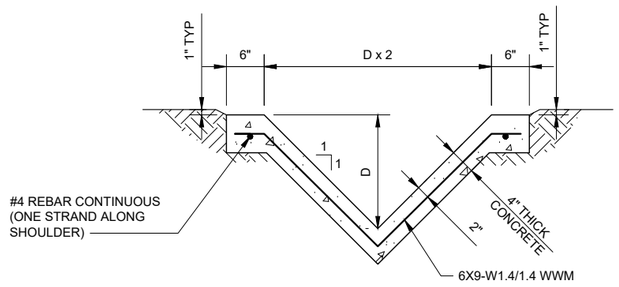
BEE CANYON GREENERY

FACILITY DRAINAGE PLAN

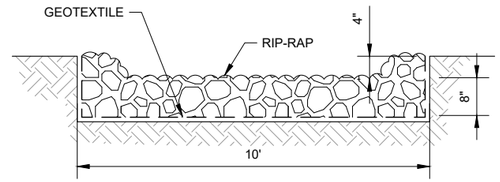
FIGURE 7



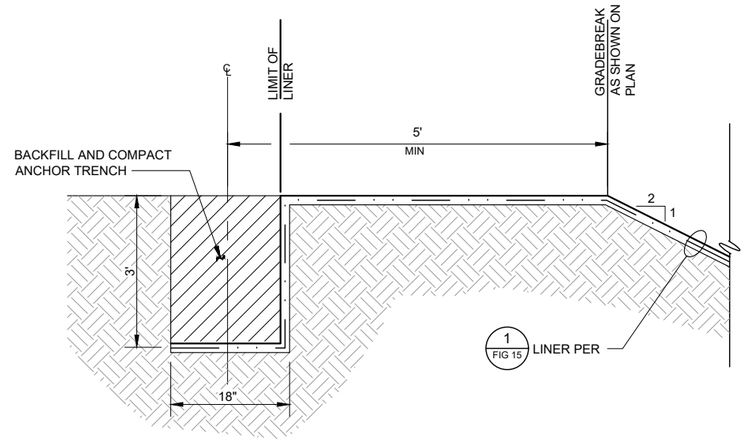
1	STORMWATER POND LINER SECTION
NTS	REFERENCE SHEET:



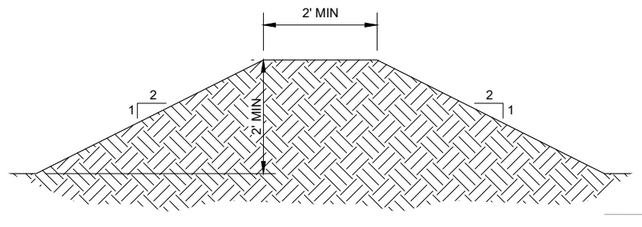
2	V-DITCH
NTS	REFERENCE SHEET:



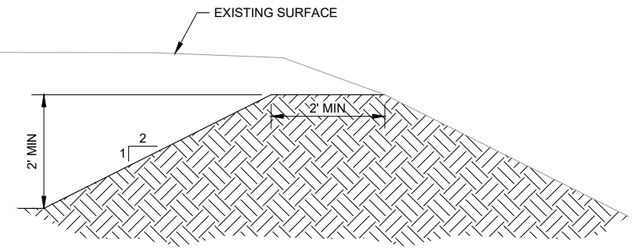
3	RIP-RAP PAD
NTS	REFERENCE SHEET:



4	STORMWATER POND ANCHOR TRENCH
NTS	REFERENCE SHEET:



TYPE A



TYPE B

5	PERIMETER BERM
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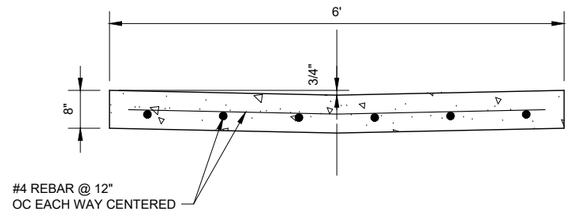
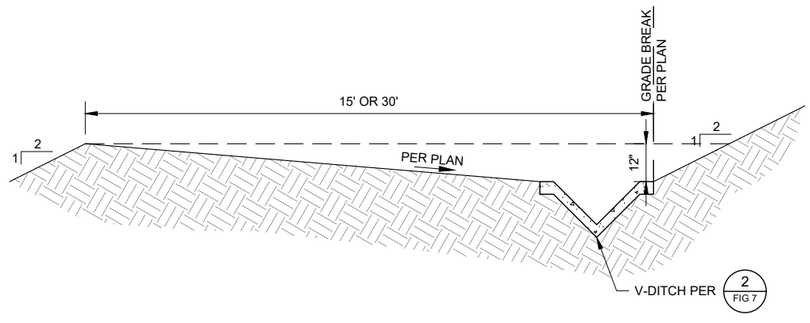


6	RIBBON GUTTER
NTS	REFERENCE SHEET:



7	EARTHEN BENCH WITH VDITCH
NTS	REFERENCE SHEET:

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

OC WASTE & RECYCLING

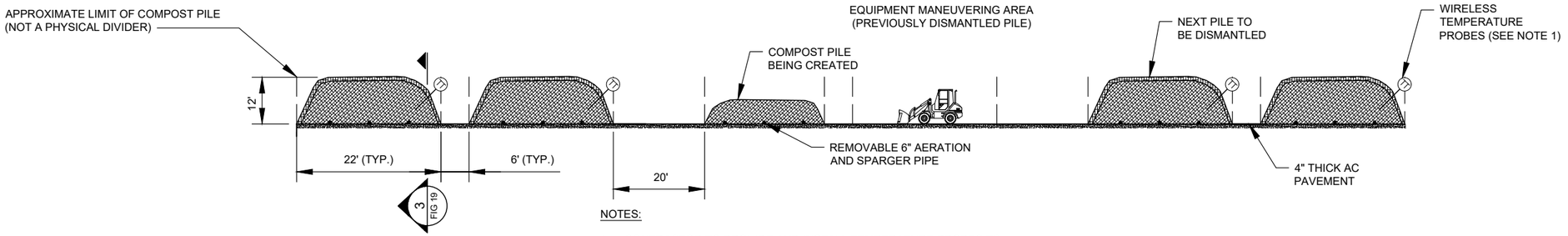
DESIGNED BY : V.H.Y. DATE: 03-2022
DRAWN BY : R.C.W. PROJ. NO.: 2018-0180B
CHECKED BY : V.B.
APPROVED BY : G.E.S.

BEE CANYON GREENERY

DRAINAGE DETAILS

FIGURE 8

P:\OCWR\FRB\Bee Canyon Greenery\CAD\SheetFiles\Figures\Phase 1B\C-805 Drainage Details

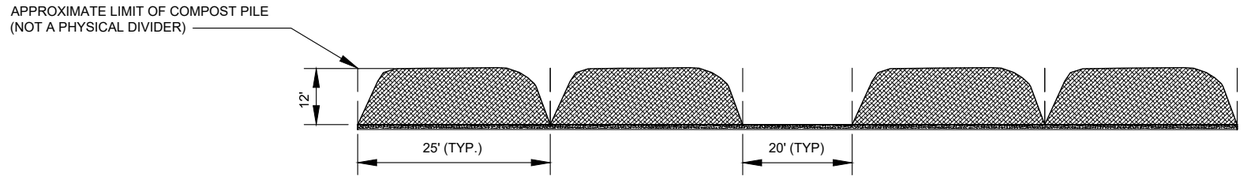


NOTES:

1. CONTRACTOR TO PROVIDE AND INSTALL TEMPERATURE PROBES TO PROVIDE A MINIMUM OF 4 READINGS PER PILE. PROBES WILL PROVIDE READINGS AT 2.5 FT AND 5 FT FROM THE TOP OF THE PILE. TEMPERATURE PROBES TO BE REMOVED PRIOR TO DISMANTLING THE PILE. THE MONITOR AND RECEIVER ANTENNA SHALL BE MOUNTED AT THE CONTROL PANEL.

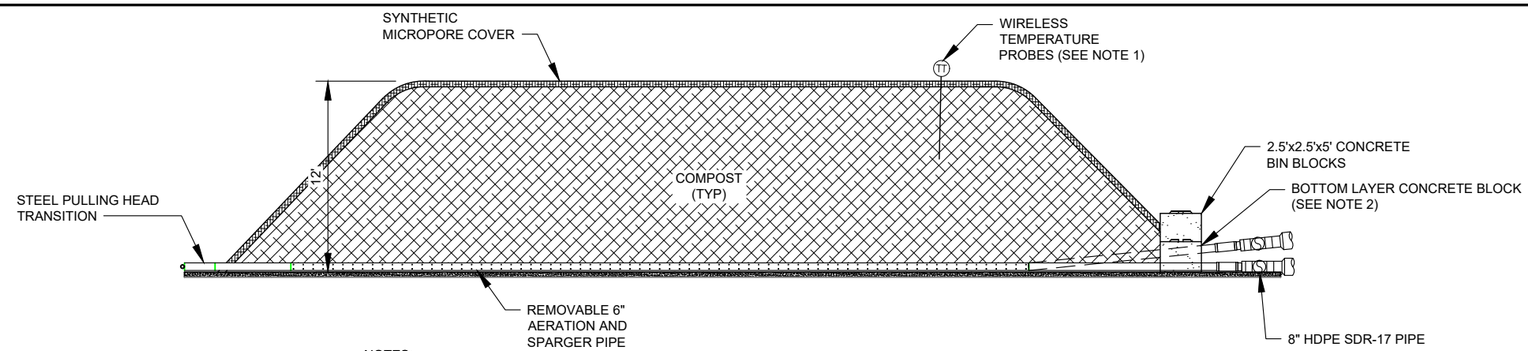
ELEVATION

1	ACTIVE COMPOST PILES
NTS	



ELEVATION

2	CURING COMPOST PILES
NTS	



NOTES:

1. CONTRACTOR TO PROVIDE AND INSTALL TEMPERATURE PROBES TO PROVIDE A MINIMUM OF 4 READINGS PER PILE. TEMPERATURE PROBES TO BE REMOVED PRIOR TO DISMANTLING THE PILE. THE MONITOR AND RECEIVER ANTENNA SHALL BE MOUNTED AT THE CONTROL PANEL.
2. CONTRACTOR TO INSTALL BOTTOM LAYER BLOCKS WITH A HOLE APPROXIMATELY 12"x12" ON EACH HOLE. HOLE TO BE PRE MANUFACTURED OR CUT BY CONTRACTOR.

ELEVATION

3	ACTIVE COMPOST PILES
NTS	

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OC WASTE & RECYCLING

DESIGNED BY : V.H.Y.
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DATE: 03-2022
PROJ. NO.: 2018-0180B

BEE CANYON GREENERY

CASP SYSTEM COMPOST HEAP CROSS-SECTIONS

FIGURE 9

P:\OCWR\FRB\Bee Canyon Greenery\CAD\SheetFiles\Figures\C-817 CASP System Cross-Section

APPENDIX A

LOADCHECKING PROGRAM

GREEN WASTE AREA LOADCHECK INSPECTION AND PROTOCOL

INTRODUCTION

In accordance with Title 14 of the California Code of Regulations (14 CCR), Sections 17867(4) and 17868.5(a)(1), the purpose of this program is to ensure that incoming loads of feedstock materials for composting are inspected for Municipal Solid Waste (MSW) and other contamination. The incoming material undergoes load checking to ensure a reduction in physical contaminants to the greatest extent possible. This aspect is accomplished by both visual observation of incoming loads, and load sorting, as necessary to quantify percentage of contaminant materials. Random loadchecks of feedstocks, additives, and amendments for contaminants will be conducted.

LOADCHECKING PROTOCOL

Safety and Training

Loadchecks are to be conducted when safe conditions allow. Personnel should never stand behind a vehicle while it is backing up to an unloading area. Personnel shall maintain eye contact, as needed, with any heavy equipment or truck driver operating in the area.

Employees working in this area, as all other working areas, must strictly adhere to department policies for health and safety (located in the Frank R. Bowerman (FRB) Landfill administration office), training received upon employment or at the time of initial assignment, as well as annually thereafter with the safety manager/specialist) and acceptable employee behavioral conduct. Records of employee training are maintained on-site.

Feedstock

Feedstock is to include greenwaste, horse manure, vegetative food materials, and food materials (non-vegetative) which have already undergone stages of sorting, screening, and grinding prior to its delivery to the BCG and is expected to arrive in transfer trailers or other large capacity vehicles. Some feedstock may arrive at the site which has not yet been processed and will be consolidated at the material receiving area prior to deployment into windrows/piles.

As it is not safe to inspect any of these types of heavy trucks before they unload, loads will be reviewed after the truck has unloaded. If the load is determined to have no contamination or minimal contamination, the load will be accepted. If the load is determined to have a significant contamination level, the entire load will be rejected. The loader operating in the feedstock area will pick up the entire load and unload it into empty roll off boxes, and the load will be taken to the FRB Landfill as MSW. The truck number, tag number, and time for the rejected load will be recorded and at the end of the day will be voided in the system and retagged as MSW for the FRB Landfill. As described above, a loadcheck form will be completed by Facility personnel to document the incident (see Attachment A).

Unacceptable Wastes

In the event that unacceptable (i.e., non-feedstock or hazardous or other prohibited) wastes are discovered in a load, personnel will inform the customer that there are unacceptable wastes in their load. If it is a hazardous or other prohibited waste personnel will contact a supervisor immediately. Procedures for handling these incidents are included in the loadchecking program for the landfill (see Attachment B). If the unacceptable waste is simply a non- feedstock waste (e.g. feedstock that does not meet the definition of green material, vegetative food material, food material, or manure) the load, or the portion of the load, will be redirected to the landfill for disposal.

Examples of Unacceptable Wastes

Treated or painted wood
Pressure treated wood, particle board, "IKEA" furniture, press board, etc.
Palm trees
Any garbage (MSW); household, construction, industrial, commercial, etc.
Hazardous wastes: paint, gasoline, batteries, oil, propane, etc.

ATTACHMENT A

LOADCHECK FORM (SAMPLE)

BEE CANYON GREENERY
LOADCHECK FORM (SAMPLE)

Date:_____Time:_____AM/PM

Photos Attached: ☐ Yes ☐ No

Hauling Firm or Vehicle Identification:_____

Type of Business:_____

Hauling Firm Telephone No.: _____

Driver's Name:_____

Vehicle License Plate No.:_____

Truck No.:_____

Type of Material:_____

Source of Waste:_____

Material Accepted: ☐ Material Rejected: ☐ - If rejected, please check items below applicable.

Reason for Rejection (Check ✓ Where Applicable)

Prohibited Waste Found? ___ Describe:_____

Excessive Odor? ___ Describe (*see reverse side*):_____

Excessive Contamination? ___ Describe:_____

Excessive Moisture? ___ Describe:_____

Excessive Metals? ___ Describe:_____

Excessive Refuse? ___ Describe:_____

Brief Summary of Rejection:_____

_____

Comments:_____

_____

Notification to Agency (ONLY If Required): ☐ Yes ☐ No

List of Notification(s):_____

Signatures

Employee Name (print):_____

Employee Signature:_____

Driver Name (print):_____

Driver Signature:_____

ATTACHMENT B

LOAD CHECK SCREENING PROGRAM

Policy and Procedure 7.15

Subject:	**Load Check Screening Program**
Authority:	OC Waste & Recycling Director: Signature
Policy Owner:	Environmental Services Manager: Signature
Approval Date:	7/8/11
Revision Date(s)	12/15/16
Version No.:	2.0

A. Policy

To detect and prevent disposal of liquids and regulated hazardous wastes at Orange County landfills.

B. Purpose

Disposal of liquids and hazardous waste is prohibited by regulation to be disposed of at Orange County Landfills. In order to ensure compliance, OC Waste & Recycling (OCWR) strives to identify such materials and ensure proper disposal of these materials. This is achieved through the implementation of a load checking program and personnel training which includes 40 hour HAZWOPER, annual 8-hour HAZWOPER refreshers, load check training, Universal/Electronic waste workshops through CalRecycle, and other compliance and Health & Safety workshops. Adhering to this policy will ensure all elements of the program are implemented.

C. Authority

This Policy is driven by the following regulations, legislation, code, or documents:

- CCR Title 27, Sections 20870 & 20880
- CCR Title 14, Sections 17407.5 & 17409.5
- CCR Title 22, Division 4.5, Chapters 11, 12, & 18
- Joint Technical Document
- Waste Discharge Requirements issued by the Santa Regional Water Quality Control Board

D. Scope

This policy applies to all County of Orange Landfills, Landfill Operations Superintendents, Landfill Operations Supervisors, Supervising Waste Inspectors, and Waste Inspectors. Non-compliance with this Policy may lead to regulatory Notices of Non-Compliance, Notices of Violation, and potential fines from the Local Enforcement Agency (LEA) and/or other regulatory agencies.

E. Responsibilities

This Policy has been established in coordination with all impacted Divisions, Sections, and Units, including Regional Landfill Operations, Site Engineering, Environmental Services, and Business Services. The Regulatory Support unit within Environmental Services has the responsibility of ensuring that this Policy is kept up to date, published, distributed, and posted in accordance with applicable department policy. Landfill Operations is responsible for implementing and complying with this policy.

F. Definitions

Term	Definition
HAZWOPER	Hazardous Waste Operations and Emergency Response Standard
CalRecycle	California's Department of Resources Recycling and Recovery
CCR	California Code of Regulations

G. Procedure

G.1 Training

1. Landfill Operations Superintendents, Landfill Operations Supervisors, Supervising Waste Inspectors, and Waste Inspectors shall complete 40-hour HAZWOPER Training.
2. Supervising Waste Inspectors and Waste Inspectors also receive additional training, including Load Checking and Universal/Electronic workshops through CalRecycle, as well as other compliance and health & safety workshops.
3. Each County employee at the landfills has received in-house Load Check Training and is designated the responsibility for identifying potentially harmful wastes at sites in addition to the regular job for which he/she is primarily responsible. Attachment A is the information provided during the in-house Load Check Training.

G.2 Establishing a Load Check Area

1. The load check area will be established at a location designated by the Waste Inspection staff. In establishing the load check location, staff will consider traffic routes, proximity to commercial and public unloading areas, safety of personnel and customers, and weather conditions.

2. The inspection area is established by the use of large safety cones demarcating the area. These safety cones shall be indelibly marked "Load Inspection". A separate sign with similar language as the safety cones may also be used. The

designated inspection area shall be large enough to accommodate several loads without frequent clean-up. Signs and cones shall be moved as necessary to ensure that they are at or near the front of the inspection area. In cases of extreme weather conditions (i.e. high winds), the use of signs may be waived. However, the use of cones will still be required.

3. Waste Inspectors shall either select trucks randomly or focus on inspecting specific truck companies that have had previous inspection issues. Trucks selected for inspection shall consist of residential and commercial route trucks, roll-off boxes of all sizes, construction clean-up trucks, MRF transfer trailers, landscaping and general haul trucks, and trash dump trucks. In addition, Waste Inspectors from a safe distance away may conduct random visual inspections at the commercial unloading area.

4. The Waste Inspector shall spend-as much time as necessary to inspect the loads for hazardous/unacceptable materials. Vehicles shall remain parked during the inspection and shall only be released once the inspection has been completed. Rejected and unacceptable materials shall be returned to the driver with instructions for proper disposal.

5. The inspection area shall only be utilized for vehicles undergoing inspection. General public non-commercial vehicles shall be directed to the public line. Commercial and dump trucks not being inspected shall be directed to the commercial unloading area.

6. The inspection area and the public unloading area shall be adjusted and re-established as necessary during the course of the day to maintain a significant and safe distance away from the commercial unloading area.

7. Alternatives to the location area are acceptable provided that appropriate signage and cones are being used and the area is kept at a safe distance from the commercial and public unloading areas.

G.3 Identification and Prevention of Illegal Dumping of Hazardous Wastes

1. HAZWOPER trained Waste Inspectors, whose full-time jobs are to inspect waste loads and to remove/coordinate the processing of unacceptable materials, are assigned to all County Landfills.
2. At all active County Landfills, Waste Inspectors throughout each day shall select loads at random for spot inspections and thoroughly inspect these loads for hazardous/unacceptable materials. The inspections shall be performed by Waste Inspectors.

3. Fee Station Attendants are to be particularly alert for past "known offenders," haulers carrying loads from industries that may be particularly suspect for using hazardous materials or generating hazardous wastes, and the presence of sealed drums/enclosed packages that appear to be suspect. Upon observing such questionable packaged wastes or questionable sources, the Fee Station Attendant shall contact the appropriate Waste Inspector and provide him/her with the vehicle description. The Waste Inspector will then proceed to inspect the load further.

G.4 Handling Procedures for Suspicious Wastes/Loads

1. When waste loads suspected of containing hazardous/prohibited materials are detected, the Waste Inspector shall make a record of the incident on the Turn-Away Log (which describes the material, its approximate quantity, the point of origin (generator), the hauler, the hauler's contact information, and the license plate number of the hauling vehicle). All suspected hazardous waste materials are considered hazardous unless proven otherwise.

2. If a waste load containing hazardous waste is illegally dumped and the waste generator/hauler is known, the firm is contacted and requested to remove the hazardous material from the site immediately. If the waste generator/hauler cannot be contacted or does not arrange to have the material hauled away, the material will be hauled by OCWR's licensed hazardous waste hauler to an appropriate disposal or treatment facility. A letter will then be sent to the generator stating why the waste generator/hauler cannot dispose of the materials in question at Orange County Landfills. The generators will also be notified that concealed hazardous waste materials in mixed waste loads are strictly prohibited.

   The offending generator/hauler will also be billed by the County for all disposal costs incurred. A copy of the letter will be sent to the State Department of Toxic Substances Control, which is responsible for enforcing State law regarding hazardous wastes. The County Health Care Agency is notified whenever a load has been cordoned off at the landfill. Illegal disposal of hazardous materials is subject to fines and/or imprisonment.

   It should be noted that the County Health Care Agency Environmental Health Hazardous Materials Surveillance Program is notified by OCWR only when a load has been identified or suspected of being hazardous waste.

G.5 Some Specific Types of Waste are Dealt With As Follows:

1. If medical waste or materials in red plastic bags labeled "infectious wastes" are received at the site, a Waste Inspector shall determine whether the bags have been properly treated. Untreated or improperly packaged materials will be rejected for disposal at the site. The County Health Care Agency will then be notified to investigate. Additional information on medical waste disposal can be found in P&P 7.23.

2. Closed or sealed drums containing liquids or suspicious wastes are not accepted at the landfills. If the drums detected after the hauler/generator has left the site, they will be moved carefully aside pending inspection and recommendation for action by OCWR's hazardous waste hauler. Closed or sealed drums are not to be opened by landfill personnel.

3. Powders or dusty materials that have not been given prior approval for disposal by the Materials Regulation Specialist shall not be accepted. If such materials are discovered at the landfill, they shall be cordoned off by appropriate means until the Materials Regulation Specialist determines whether the material is acceptable for disposal.

4. Orange County Landfills do not accept asbestos-containing waste material. It can be difficult to identify asbestos-containing material; however, there are several types of "asbestos-containing materials" which are likely to be disposed of at OCWR landfills. Examples of common types include transite pipe, insulation, ceiling materials, floor tiles, roofing tiles and wall siding. If a waste load contains these types of materials and the waste generator/hauler is known, the firm is contacted and requested to remove the suspect asbestos-containing material from the site immediately. If the waste generator/hauler cannot be contacted or does not arrange to have the material hauled away, the material will be handled by OCWR.

   The following is a list of handling procedures for suspected asbestos waste that is less than three feet in length:

   a) Waste Inspectors or landfill personnel who have 40-hour HAZWOPER training, using standard personal protective equipment, will pack the suspected asbestos-containing waste.

   b) Carefully pack the suspected asbestos-containing materials into a drum.

   c) Seal the drum and label it with the accumulation start date and material content.

d) Move the suspected asbestos material to the landfill's hazardous waste storage facility to await proper disposal.

e) Enter the incident into the operations daily logbook.

For material that is greater than three feet in length, the following is a list of handling procedures:

a) Material must be wetted in such a manner as to completely eliminate any airborne nuisance, provided the moisture content of the wetted material does not exceed 50% and no hazardous or unacceptable substance or materials are used in the wetting process.

b) After wetting, wrap the waste with plastic tarp. The Waste Inspector shall check and ensure that the waste is properly secured and handled (i.e., wrapped) before the material is hauled to the landfill's hazardous waste storage facility.

c) Enter the incident into the operations daily logbook.

G.6 Record Keeping

The following forms are filled out by the Waste Inspector when checking a load for hazardous/unacceptable waste:

- Load Check Log (Attachment B)
- Turn-Away Log (Attachment C), if applicable
- Operations Daily Logbook (aka "Red Book"), if applicable

The completed Load Check Logs are filled out by the Waste Inspector and kept by the Supervising Waste Inspector. Summaries are sent to Environmental Services and the Materials Regulation Specialist on a regular basis. These records are kept permanently.

The completed Turn-Away Logs are filled out by the Waste Inspector and are kept by the Supervising Waste Inspector. Summaries are sent to Environmental Services and the Material Regulation Specialist on a regular basis. The quantity of prohibited materials, broken down by category, is included in the quarterly report to the Local Enforcement Agency (LEA). These records are kept permanently.

The landfill Daily Logbook is filled out and kept by the Landfill Operations Superintendent. Incidents, such as hazardous waste spills and receipt of asbestos-containing waste, are recorded in the Daily Logbook. Pages from the logbook

documenting such incidents are copied and sent to Environmental Services on a regular basis. These pages are included in the quarterly report to the LEA. These records are kept permanently.

H. References

#	Title/URL
1	CCR Title 27
2	CCR Title 14, Sections 17407.5 & 17409.5
3	CCR Title 22, Division 4.5, Chapter 11
4	CCR Title 22, Division 4.5, Chapter 12
5	CCR Title 22, Division 4.5, Chapter 18

I. Attachments

#	Title	Description
A	In-House Load Check Training	Training provided in-house for load check
B	Load Check Log	Form filled out for each load check inspection
C	Turn-Away Log	Form filled out each time a load is rejected

Attachment A

COUNTY OF ORANGE

OC Waste&Recycling

Our Community. Our Commitment.

LOAD CHECK TRAINING

Training Contents

- Materials Regulation Program
- Load Check Program
  - Materials Regulation Specialist
  - Fee Station Attendants
  - Laborers/Operators
  - Waste Inspectors
- Prohibited Wastes
- Turn Away Procedures/Public Education

Materials Regulation Program

Falls under the following Policy and Procedures:

- Suspected Hazardous Waste, 7.15
- Medical Waste disposal at Landfills, 7.23
- Clean-fill Soil Acceptance, 7.24
- Low Level Radioactive Waste, 7.25
- Emergency Disposal of Commercial Food Waste, 7.35
- Handling and Disposal of Treated Wood Waste, 7.37

Materials Regulation Specialist

- Provides assistance and guidance to Landfill staff
- Schedule and track inspected waste into Landfills
- Determine appropriate acceptance criteria

Connie Lizarraga- 714-834-4084

Special Material Acceptance

- MRS to mark approved containers
- Schedule appointment
- Email of Disposal Appointment will be sent to appropriate personnel
- Waste inspectors review and verify material
- Disposal confirmation returned to MRS

Load Check Program Staff

- All operational Landfill staff participate in Load Check Program
  - Fee Station Attendants
  - Laborers
  - Waste Inspectors
  - Equipment Operators

Load Check Program

- Visual inspection of tarp loads
- Continual inspection in public area
- Random inspections in commercial area
  - Designated area
  - Documentation (Load Check Inspection Log)
- Inspection of scheduled and suspected loads
- Turn away prohibited waste

Fee Station Attendants

- Utilization of overhead cameras to view loads
- Notify Waste Inspectors of questionable loads
- Radiation monitoring
  - Screen loads entering landfill
  - Alarm stops fee transactions
  - Notify Waste Inspectors

Laborers/Operators

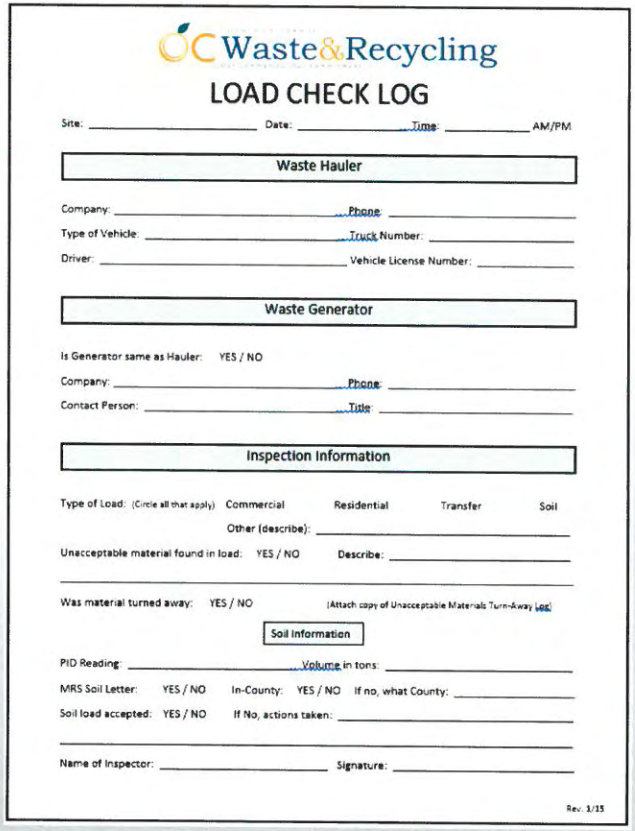
- Visually inspect loads
- Notify Waste Inspectors of questionable loads

Waste Inspectors

- Trained in handling Hazardous Waste Materials
- On landings at all times
- Turn away prohibited waste
- Collect & store incidental to the load material
- Provide containment and clean-up of small spills
- Inform and educate Landfill customers

Load Checking

- New Load Check Log
- Includes soil information



OC Waste&Recycling

LOAD CHECK LOG

Site: _____ Date: _____ Time: _____ AM/PM

Waste Hauler

Company: _____ Phone: _____

Type of Vehicle: _____ Truck Number: _____

Driver: _____ Vehicle License Number: _____

Waste Generator

Is Generator same as Hauler: YES / NO

Company: _____ Phone: _____

Contact Person: _____ Title: _____

Inspection Information

Type of Load: (Circle all that apply) Commercial Residential Transfer Soil

Other (describe): _____

Unacceptable material found in load: YES / NO Describe: _____

Was material turned away: YES / NO (Attach copy of Unacceptable Materials Turn-Away Log)

Soil Information

PID Reading: _____ Volume in tons: _____

MRS Soil Letter: YES / NO In-County: YES / NO If no, what County: _____

Soil load accepted: YES / NO If No, actions taken: _____

Name of Inspector: _____ Signature: _____

Rev. 1/15

Prohibited Wastes

- Hazardous & Universal Waste
- Contaminated soils
- Liquids (>50% moisture control)
- Asbestos
- Untreated medical waste
- High-level radioactive waste
- Empty drums (>5 gal. capacity)
- Tires
- Automobiles, Campers, RV's

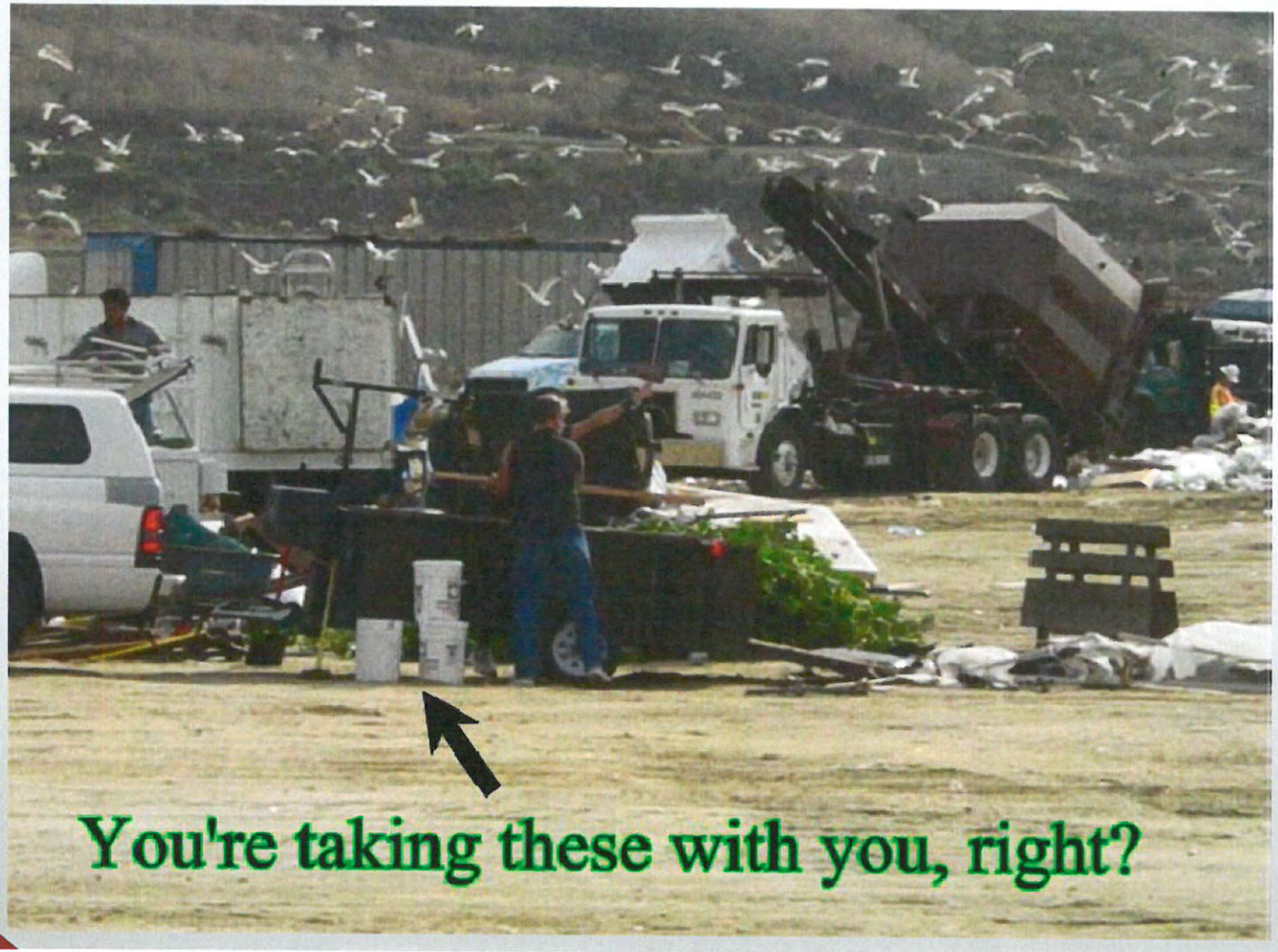
Identifying Prohibited Wastes

- Labels
  - D.O.T., Hazardous Waste, N.F.P.A.
- Signal Words
  - "Flammable", "Keep away from flames", "Causes burns", "Poison", "Toxic"
- Containers
  - Corrosive
  - Reactive

New Labeling

Labeling to look for in 2016 Global Harmonization System

- Training will be provided during HAZWOPER


You're taking these with you, right?

Low-Level Radioactive Waste

- Do not accept radioactive waste
- Vehicles determined to contain radioactive waste will be detained
- Waste Inspector shall:
  - use a hand held radiation monitor to scan the vehicle
  - complete the Low Level Radiation Waste Incident Report
  - Notify the Radiological Health Branch Office identifying
    - Self
    - Situation (with Radiation Waste Incident Report for reference)

Medical Waste Disposal

Acceptable: autoclaved biohazard bags

Not Acceptable:

- Red Biohazard Bags
- Uncontained Sharps
- Body fluids, tubing
- Human body parts
- Microbiological specimens

Nuisance Dust

Fee Station Attendant should notify Waste Inspector if nuisance dust is suspected.

Unacceptable items must be inspected and contained before disposing

- Toner or copier powder
- Glass beads
- Fine metals
- Chemical compounds
- Bulk loads of loose dry powder

If unsure, contact a MRS

Clean-Fill Soil

- Greater than 5 CY or 8 tons-contact an MRS for analysis determination
- All loads require soil acceptance document
- Loads must be free of debris
- Soil acceptance document to be turned into fee booth upon arrival.
- No photocopies will be accepted.

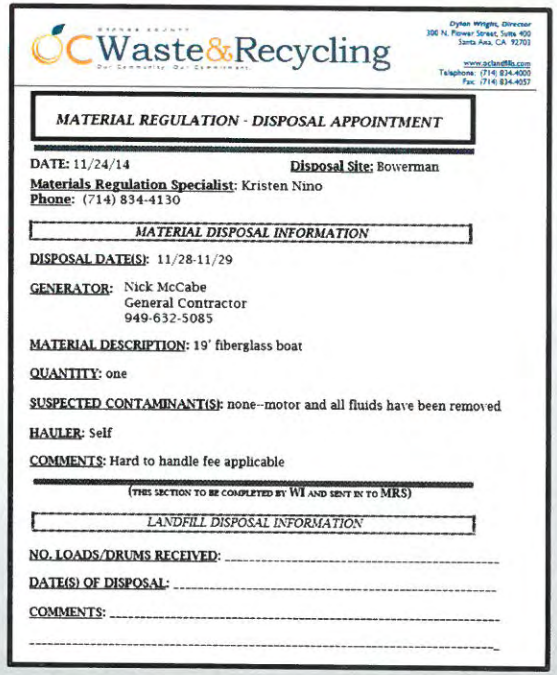
Clean-Fill Soil

- Waste Inspectors will conduct visual inspection of soil loads
- Inspections will take place while soil is still in vehicle
- All soil load inspections will require load check log completion
- Final Authority-Waste Inspectors/Landfill personal have the right to reject any suspicious soil load

Emergency Disposal of Commercial Food Waste

MRS will handle emergency HCA food waste disposal requests

- Email of Disposal Appointment will be sent to the appropriate personnel: Waste Inspector, Operations Superintendent, Operations Supervisor, Fee Booth Supervisor
- If no form, contact MRS



OC Waste&Recycling

Dylan Wright, Director
300 N. Flower Street, Suite 400
Santa Ana, CA 92703
www.oclandfills.com
Telephone: (714) 834-4000
Fax: (714) 834-4057

MATERIAL REGULATION - DISPOSAL APPOINTMENT

DATE: 11/24/14 **Disposal Site:** Bowerman
Materials Regulation Specialist: Kristen Nino
Phone: (714) 834-4130

MATERIAL DISPOSAL INFORMATION

DISPOSAL DATE(S): 11/28-11/29

GENERATOR: Nick McCabe
General Contractor
949-632-5085

MATERIAL DESCRIPTION: 19' fiberglass boat

QUANTITY: one

SUSPECTED CONTAMINANT(S): none--motor and all fluids have been removed

HAULER: Self

COMMENTS: Hard to handle fee applicable

(THIS SECTION TO BE COMPLETED BY WI AND SENT IN TO MRS)

LANDFILL DISPOSAL INFORMATION

NO. LOADS/DRUMS RECEIVED: _____

DATE(S) OF DISPOSAL: _____

COMMENTS: _____

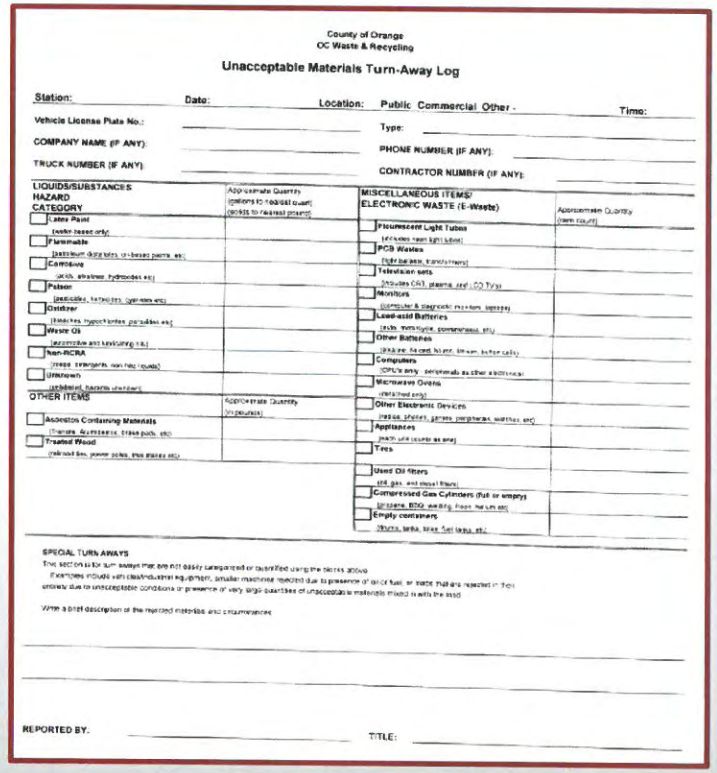
Treated Wood Waste

Any wood treated with a chemical preservative is only accepted at Prima with a completed Treated Wood Waste Manifest form.

- Treated Wood Waste must be pulled from loads at Olinda and FRB.

Turn Away Procedures

- Return prohibited waste to customer
- Complete Vehicle Turn-Away Log
- Provide referrals for proper disposal



County of Orange
OC Waste & Recycling

Unacceptable Materials Turn-Away Log

Station: Date: Location: Public Commercial Other - Time:

Vehicle License Plate No.: Type:

COMPANY NAME (IF ANY): PHONE NUMBER (IF ANY):

TRUCK NUMBER (IF ANY): CONTRACTOR NUMBER (IF ANY):

LIQUIDS/SUBSTANCES HAZARD CATEGORY	Approximate Quantity (gallons for liquid/gel quart; pounds for aerosol propane)
☐ Latex Paint (water based only)	
☐ Flammable (petroleum distillates, oil-based paints, etc.)	
☐ Corrosive (acids, alkalines, hydroxides etc)	
☐ Poison (pesticides, herbicides, cyanides etc)	
☐ Oxidizer (bleaches, hypochlorites, peroxides etc)	
☐ Waste Oil (automotive and lubricating oils)	
☐ Non-RCRA (soaps, detergents, non-haz liquids)	
☐ Unknown (prohibited, hazards unknown)	
OTHER ITEMS	Approximate Quantity (in pounds)
☐ Asbestos Containing Materials (Transite, Asphaltic, brake pads, etc)	
☐ Treated Wood (railroad ties, power poles, tree stakes etc)	

MISCELLANEOUS ITEMS/ ELECTRONIC WASTE (E-Waste)	Approximate Quantity (item count)
☐ Fluorescent Light Tubes (includes non light tubes)	
☐ PCB Wastes (light ballasts, transformers)	
☐ Television sets (includes CRT, plasma, and LCD TVs)	
☐ Monitors (computer & diagnostic monitors, laptops)	
☐ Lead-acid Batteries (auto, motorcycle, commercial, etc)	
☐ Other Batteries (alkaline, sealed, silver, lithium, button cells)	
☐ Computers (CPU's only - peripherals as other electronics)	
☐ Microwave Ovens (whole only)	
☐ Other Electronic Devices (radios, phones, games, peripherals, watches, etc)	
☐ Appliances (each unit counts as one)	
☐ Tires	
☐ Used Oil filters (oil, gas, and diesel filters)	
☐ Compressed Gas Cylinders (full or empty) (propane, BBQ, welding, freon, helium etc)	
☐ Empty containers (drums, tanks, brake fluid tanks, etc)	

SPECIAL TURN AWAYS

This section is for turn aways that are not easily categorized or quantified using the items above.

Examples include: non-construction equipment, smaller machines rejected due to presence of diesel fuel, or waste that are rejected in their entirety due to unacceptable conditions or presence of very large quantities of unacceptable materials mixed in with the load.

Write a brief description of the rejected materials and circumstances:

REPORTED BY: TITLE:

Hazardous Waste Storage Facility

- Segregation by Hazard Class
- Secondary Containment
- Secure
- Emergency Response Supplies
- Quarterly Shipments by Hazardous Waste Disposal Contractor

Public Education

- Website: www.oclandfills.com
- Handouts and Brochures:
  - HHW handout
  - Business Hazardous Waste Referral List
- Phone:
  - OCWR Reception 714-834-4000
  - Public Information Hotline 714-834-6752

Summary

- Diverting prohibited waste requires participation by everyone
- Coordination and cooperation with local agencies is key
- Continual communication of information to public, generators, haulers, regulators and staff is essential

Any special material questions, contact a MRS

County of Orange
OC Waste & Recycling

LOAD CHECK LOG

Station: _____ Date: _____ Time: _____ AM / PM

Waste Hauler

Company: _____ Phone: _____

Address: _____

Type of Vehicle: _____ Truck Number: _____

Vehicle License Number: _____ Driver: _____

Waste Generator

Is Generator Same as Hauler: Y / N

Company: _____ Phone: _____

Address: _____

Contact Person: _____ Title: _____

Inspection Information

Type of Load: (Circle all that apply) Commercial Residential Soil

Transfer Demolition Sludge

Other (describe) _____

Unacceptable Material Found In Load: Y / N

Describe: _____

Was Material Returned With Driver or Other Representative of Hauler/Generator: Y / N
(Attach copy of Unacceptable Materials Turn-Away Log to this sheet)

Name of Inspector: _____ Title: _____

County of Orange
OC Waste & Recycling

Unacceptable Materials Turn-Away Log

Station: **Date:** **Location:** **Public Commercial Other -** **Time:**

Vehicle License Plate No.: _____ **Type:** _____

COMPANY NAME (IF ANY): _____ **PHONE NUMBER (IF ANY):** _____

TRUCK NUMBER (IF ANY): _____ **CONTRACTOR NUMBER (IF ANY):** _____

LIQUIDS/SUBSTANCES HAZARD CATEGORY	Approximate Quantity (liquids to nearest quart) (solids to nearest pound)
☐ **Latex Paint** (water-based only)	
☐ **Flammable** (petroleum distallates, oil-based paints, oils, etc)	
☐ **Corrosive** (acids, alkalines, hydroxides etc)	
☐ **Toxic** (pesticides, herbicides, cyanides etc)	
☐ **Oxidizer** (bleaches, hypochlorites, peroxides etc)	
☐ **Non-hazardous Liquids** (soaps, detergents, non-haz liquids)	
☐ **Unknown** (unlabeled, hazards unknown)	

OTHER ITEMS	Approximate Quantity (in pounds)
☐ **Asbestos Containing Materials** (Transite, Alumibestos, brake pads, etc)	
☐ **Treated Wood** (railroad ties, power poles, tree stakes etc)	
☐ **Sharps** (Syringes and other blood contaminated sharp items)	

Notes:

MISCELLANEOUS ITEMS/ ELECTRONIC WASTE (E-Waste)	Approximate Quantity (item count)
☐ **Flourescent Light Tubes** (includes neon light tubes)	
☐ **PCB Wastes** (light ballasts, transformers)	
☐ **Television sets** (includes CRT, plasma, and LCD TV's)	
☐ **Monitors** (computer & diagnostic monitors, laptops)	
☐ **Lead-acid Batteries** (auto, motorcycle, powerwheels, etc)	
☐ **Other Batteries** (alkaline, Ni-cad, Ni-mh, lithium, button cells)	
☐ **Computers** (**CPU's only** - peripherals as other electronics)	
☐ **Microwave Ovens** (detached only)	
☐ **Other Electronic Devices** (radios, phones, games, peripherals, watches, etc)	
☐ **Appliances** (each unit counts as one)	
☐ **Tires** (Truck & auto, golf cart, motorcycle - **Not bicycle**)	
☐ **Used Oil filters** (oil, gas, and diesel filters)	
☐ **Compressed Gas Cylinders (full or empty)** (propane, BBQ, welding, freon, helium etc)	
☐ **Empty containers** (drums, tanks, totes, fuel tanks, etc)	

SPECIAL TURN AWAYS

This section is for turn aways that are not easily categorized or quantified using the blocks above.

Examples include vehicles/industrial equipment, smaller machines rejected due to presence of oil or fuel, or loads that are rejected in their entirety due to unacceptable conditions or presence of very large quantities of unacceptable materials mixed in with the load.

Write a brief description of the rejected materials and circumstances.

_____

_____

REPORTED BY: _____ **TITLE:** _____

APPENDIX B

ODOR IMPACT MINIMIZATION PLAN

BEE CANYON GREENERY
ODOR IMPACT MINIMIZATION PLAN

1.0 PURPOSE

In accordance with California Code of Regulations Title 14, Section 17863.4 (as of January 2016), compostable material handling operations and facilities shall prepare, implement, and maintain a site-specific odor impact minimization plan. This Odor Impact Minimization Plan (OIMP) is being submitted by OC Waste & Recycling to the County of Orange, Health Care Agency/ Local Enforcement Agency (LEA) as required and shall be implemented in minimizing impact of odors to potential receptors as the need arises. The plan is intended to provide guidance to on-site personnel in the handling, storage, and removal of compostable materials at the Bee Canyon Greenery (BCG) composting facility located within Frank R. Bowerman Landfill (FRB). This odor impact minimization plan shall be reviewed annually to determine if any revisions are necessary, a copy shall be provided to the LEA, within 30 days of those changes.

Facility Information

Site Name:	Bee Canyon Greenery
SWIS#:	30-AB-0469
Location:	11002 Bee Canyon Access Road, Irvine, CA 92602
Operation:	Compostable Material Handling Facility
Process:	Open windrow/covered aerated static pile (CASP) methods
Capacity:	Phase 1A - Not to exceed 73,925 cubic yards; Phase 1B – Not to exceed 129,111 cubic yards; Phase 1C – Not to exceed 121,725 cubic yards
Project Area Size:	37.3 acres

2.0 ODOR MONITORING PROTOCOL

2.1 PROXIMITY OF ODOR RECEPTORS

The project area is located within the Frank R. Bowerman Landfill and odors coming from the composting operation may have an impact to both on-site and off-site receptors. Below is a list of potential receptors:

1. Potential On-Site Receptors

    a. Landfill site personnel
    b. On-site contractors
    c. Transfer truck and material delivery drivers
    d. Public utility personnel

2. Potential Off-Site Receptors (and corresponding distance away from composting project area, See Figure 1)

    a. Residential neighborhoods – approximately 3,700 to 4,900 linear feet (~1 mile) south – southwest of the project area.

2.2 METHOD FOR ASSESSING ODOR IMPACTS

Each operating day designated on-site personnel shall assess and evaluate the perimeter of the facility area and landfill boundary for objectionable odors. Best Management Practices (BMPs) and good housekeeping measures are implemented to minimize the release of objectionable odors. BMPs include:

- Maintaining adequate heat in the piles through appropriate pile density, limiting turning frequency and/or pile dimensions.
- Providing adequate moisture throughout the active composting process.
- Frequent monitoring of temperature and moisture content assures composting conditions are within acceptable parameters.

Good housekeeping measures include:

- Clearing spilled materials between windrows.
- Eliminating areas with the potential for ponding water.
- Maintaining reasonably sized stockpiles of incoming feedstock by typically deploying it into windrows within 48 hours.

If objectionable odors are detected, the following assessment methods shall be implemented:

1. Cease or limit the amount of new feedstock received if they are causing off-site odor impacts until the source of the odors is identified, corrected and the odor migration ceases.
2. Designated site personnel shall investigate likely source of odors.
3. Designated site personnel shall determine wind patterns and

direction at time odor was detected.

4. Based on the intensity of odor nuisance, designated site personnel shall determine if odor had travelled off-site by surveying the perimeter of the landfill and vicinity of potential off-site receptors.
5. If source of odors is found to be the composting project area, determine the effectiveness of current on-site management practices (e.g., mixing odiferous materials with sawdust or other bulking agent, remove odiferous materials and dispose of them in the landfill, etc.) could remedy any odor problems and immediately take steps to remedy the situation. (See Table 1 for Possible Causes of Odor and Odor Minimization Management Techniques)
6. Determine whether or not the odor has moved off-site and if so, if it is significant enough to warrant contacting the adjacent neighbors and/or the LEA.
7. The LEA shall be notified if it has been determined that possible odor impacts has occurred beyond the landfill property boundary.
8. If possible, odor impacts have been determined to occur beyond the property boundary, the incident shall be recorded in the compost daily operational log book which shall include all actions and activities taken to resolve or minimize odor nuisance for future reference and operational considerations.
9. Do not start operations again (i.e., accepting additional green waste in receiving area, placement and formation of new windrows) until the wind and meteorological conditions are favorable and will not promote off-site odors.

3.0 METEOROLOGICAL CONDITIONS

Prevailing winds at FRB predominantly come from the south or southeast starting approximately from 8 PM through 8 AM with wind speeds ranging from 1 to 6 mph. During daylight hours, prevailing winds shift and come from the north to southwest approximately from 8 AM through 6:30 PM with wind speeds ranging from 1 to 13 mph (See Exhibit 1 containing wind roses obtained from the nearest weather station to the project area for various times of the year). Typical daytime wind directions will direct any potential odors south-southwest away from potential receptors. Santa Ana wind conditions do affect the site in the fall months approximately 20% of a three month period as can be seen in Exhibit 1 and are in the same direction as the typical daytime wind directions albeit at higher wind speeds.

The FRB Landfill maintains an onsite meteorology station that monitors wind direction, wind speed, temperature, and relative humidity. Data from this station may be used to help monitor conditions if an odor issue arises or prior to an issue occurring.

4.0 COMPLAINT RESPONSE PROTOCOL

As complaints are received from impacted receptors or regulators, the following response protocol shall be implemented:

1. All odor complaints received from potential receptors and/or regulators shall be recorded in the facility operational logbook and complaint log (See Exhibit 2 for Complaint Log).
2. Designated personnel shall contact complainant and/or regulator to obtain details of the complaint such as name, time, location, and nature or characteristics of odors.
3. Designated personnel shall notify appropriate regulators of the complaint.
4. Designated site personnel shall investigate and implement methods in assessing odor impacts as described in Section 2. Odor Monitoring Protocol, of this plan.
5. Designated site personnel shall immediately implement additional or appropriate measures to minimize odors.
6. Once the OIMP has been implemented and the odor has been minimized, designated personnel shall follow-up with complainant.

1. All complaint records for the quarter shall be included and incorporated into the Quarterly Self-Monitoring report submitted to the LEA as required.

OCWR will establish contingency plans for operating downtime (e.g., equipment malfunction, power outage). OCWR shall post telephone numbers at the entrance of the composting facility to allow members of the public to contact the composting facility superintendent to report odor complaints 24 hours per day, 7 days per week.

5.0 OPERATING PROCEDURES AND DESIGN CONSIDERATIONS TO MINIMIZE ODORS

Operational procedures and design considerations have been taken into account to minimize odor impacts as a result of the composting facility.

5.1 FEEDSTOCK CHARACTERISTICS AND MANAGEMENT

Feedstock is limited to greenwaste, horse manure, vegetative food materials and

food materials (non-vegetative) which have already undergone stages of sorting, screening, and grinding prior to its delivery to the BCG and is expected to emit very minimal odors as it undergoes deployment into windrows and the composting and curing process. Some feedstock may arrive at the facility which has not yet been processed; however, effort will be made to process those feedstock material types and form into windrows as quickly as possible. This will require first in, first out approach to ensure each load is earmarked as to when it arrived and when it needs to be processed. While the feedstock is waiting to be "officially" processed, some pre-monitoring can be done such as temperature monitoring to ensure the feedstock has not gone sour due to anaerobic degradation.

The material arriving for the compost feedstock will be source separated. The degree of source separation may vary depending on the type of technology utilized for composting. For example, in the case of windrow composting, material arriving will be source separated primarily consisting of a single material type (i.e., green waste vs. manure). At this point in time OCWR is not planning to receive mixed organic waste if the feedstock will be processed using the open windrow technology. For composting using the CASP system, the intent is also to receive it source separated of a single material. However, there is the potential that the feedstock could consist of multiple organic material types and still be considered source separated depending on the method of collection as established by the hauler and jurisdiction. For example, some food scraps may be mixed in with the green waste. The CASP will be able to effectively receive this material type while controlling odors and vectors. Mixed solid waste will not be accepted and there will be no sorting of materials to remove contaminants. The 1% limit applies to all non-compostable materials and materials not permitted within the SWFP. Any loads that are greater than the 1% contamination limit will be rejected by returning the load to the hauler or disposed at the landfill.

Incoming feedstock shall contain no greater than 1.0 percent of physical contaminants by dry weight. Feedstock material shall have a moisture content not to exceed 50%. Feedstock material will be loaded into a dump truck by a front loader as soon as possible and delivered to the active composting area, where the material will then be placed into new compost piles by a front loader. Extremely odorous loads shall not be accepted. Feedstock material shall be inspected visually for particle size, moisture content, and contamination level prior to its acceptance. OCWR will not select or use any additives or amendments in the composting operation that are either highly odorous by themselves, are highly odorous when added to the compost piles, or are highly odorous over time during the active or curing phases of the composting operation.

Incoming feedstock are typically deployed into windrows within 72 hours. If significant odors occur from the feedstock pile, a new compost pile will immediately be built. If it is determined that a significant odor problem will still occur, the material will be mixed with other materials on-site, including curing compost piles if necessary and reprocessed. A last-case option would be to

landfill the material if no other options are available. Additionally, if upon acceptance at the composting operation, prior to unloading, any highly odorous loads will be taken to the landfill working face for disposal.

Should feedstock material arrive at the composting operation with noticeable odors, options for reducing odors would include but are not limited to the following: reject highly odorous loads and landfill the material; eliminate troublesome or contaminated feedstocks; mix materials upon receipt (i.e., to increase material porosity); blanketing odorous material with a six inch to one-foot layer of bulking agent, high carbon amendments or finished compost.

Should feedstock material in the receiving unloading and storage area begin to generate odors, options for reducing odors would include but are not limited to the following: expedite material processing; first in, first out processing; reduce the size of material stockpiles; blanketing odorous material with a six inch to one-foot layer of bulking agent, high carbon amendments or finished compost; reduce the volume of incoming materials; identify alternative facilities for incoming materials.

Should feedstock material begin to generate odors during mixing and material handling, options for reducing odors would include but not be limited to the following: create windrow piles that are sufficiently blended; create piles with good porosity; ensure that mixing areas/activities are located as far as possible from sensitive receptors; reduce mixing/materials handling activity during stagnant air conditions; reduce mixing/materials handling activity when wind is in the direction of sensitive receptors; mist water or odor neutralizer at dust generation points.

Should feedstock material begin to generate odors during the composting process, options for reducing odors would include but not be limited to the following: turn regularly to re-invigorate the composting process; maintain sufficient moisture in windrows; avoid over-watering windrows; make smaller windrows to increase passive aeration; increase porosity and bulk density; consider blanketing odorous materials with a six-inch to one-foot layer of bulking agent; make piles on a one-foot bed of overs to increase airflow; reduce turning/material handling activities when winds are blowing in the direction of nearby receptors; diligently manage and monitor the composting process.

Should feedstock material begin to generate odors during screening, options for reducing odors would include but not be limited to the following: reduce screening activities during stagnant air conditions; reduce screening activities when wind is in the direction of nearby receptors; use mist water or neutralizer at dust generation points.

Should feedstock material begin to generate odors from water ponding after a rain event, options for reducing odors would include but not be limited to the following: inspect piles after major rain events; grade the site to eliminate

puddles, depressions and wheel ruts where water collects; absorb ponded water with wood chips/other absorbent, fill potholes with soil/pad material.

Should feedstock material begin to generate odors as a result of un-composted material in aisles between the windrows, options for reducing odors would include but not be limited to the following: clean aisles of spilled material (particularly at the end of each day); mechanically sweep paved areas at the end of each shift; apply water and/or neutralizer to reduce dust during dry conditions.

Should feedstock material begin to generate odors during curing, options for reducing odors would include but not be limited to the following: increase processing time prior to moving to curing; decrease curing pile size; review moisture content of in-process compost; aerate curing piles by turning.

Should collected storm water in the lined pond begin to generate odors, options for reducing odors would include but not be limited to the following: review NPDES procedures to minimize storm water contact with organic materials; remove particles from water draining into the lined pond; filter stormwater through a filter berm or sock; clean out lined pond during the dry season (the pond will be cleared of debris monthly or more frequently if needed); reapply collected storm water to active compost piles.

5.2 PROCESS WATER DISTRIBUTION

The feedstock processing areas and compost piles are frequently monitored to ensure adequate moisture content levels and dust control are addressed. Other than rainfall, water is generally not added to the feedstock or active compost piles during the winter months. During the warmer summer and fall months, water is used to spray on an as-needed basis for the composting materials handling operations (loading, unloading, stockpiling, mixing, turning, and screening) for dust and moisture content management of the feedstock processing areas and compost piles.

5.3 COMPOST PAD and SITE DRAINAGE

The BCG compost pad is constructed of paved asphalt. The thickness of the pad is a minimum of one-foot; because the facility sits atop landfill stockpile 5-D the thickness of the pad typically exceeds the minimum thickness for a compost pad on native soil. The compost pad is partially located on top of historic waste fill. Settlement is expected to occur so remedial grading will be periodically conducted to eliminate any ponding on top of the pad which could contribute to odors. Stormwater runoff from the compost area is collected in a separate lined pond located adjacent to the windrows. The water collected in the pond will be recirculated into the compost piles for moisture control as needed to minimize the volume in the pond and reduce odors.

5.4 EQUIPMENT RELIABILITY

Processing equipment is maintained per the manufacturer's recommendations. Heavy equipment and water trucks are maintained per OC Waste & Recycling's comprehensive preventive maintenance program. OCWR has a fleet of heavy equipment and rental contracts and is able to immediately replace the dedicated pieces of heavy equipment at the composting facility as the need arises.

5.5 WEATHER EVENT IMPACTS

The Landfill's weather system is consulted to assure screening is not conducted during periods of high winds (measured at greater than 25 miles per hour). The facility uses both the weather monitoring system and an onsite windsock at the screening area to determine appropriate conditions for screening.

Heavy rainfall and/or wind are not uncommon weather events and could impede processing activities. There is adequate storage space available if operations have to temporarily cease due to adverse weather conditions.

5.6 METHOD AND DEGREE OF AERATION

Odors emanating from windrows typically indicate problems in the initial mixing, turning frequency, pile porosity and/or moisture content of the pile. The BCG strives to create windrows with appropriate carbon to nitrogen level (approximately 30:1 to start), adequate initial mixing and with adequate moisture (45 percent to 60 percent) within the windrows. Newly constructed compost windrows will initially be covered with at least 6 inches of finished compost within 24 hours of formation as required by SCAQMD Rule 1133.3. For the first 15 days after initial windrow formation, within six hours before turning, water will be applied as necessary to ensure the pile meets the wetness criteria described in Rule 1133.3. During this period, the temperature of each compost pile will be taken every day.

For Phases 1A and 1B processed feedstock is placed into windrows and moisture is managed at the proper conditions. The windrows are turned using a specialized windrow turner or loader. The turner or loader mixes the feedstock, moisturizes the feedstock as needed, reestablishes the porosity and redistributes moisture and heat. The windrows are turned at least five (5) times during the 15-day process to further reduce pathogens (PFRP) between the operating hours of 7AM to 5PM. Following the PFRP, windrows are turned once per week.

For Phase 1C CASP composting operations the feedstock materials will be formed into elongated piles for composting over aeration piping by front loaders with addition of moisture as needed by the on-site water truck. Based on typical aeration requirements for active composting operations with similar feedstock recipes and design criteria, the blower system will supply 0.83 to 2.5 standard cubic feet per minute (scfm) of air flow per cy of compost or approximately 1,500

scfm per pile at minimum for a specified duration. Active compost shall be maintained under aerobic conditions at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for the PFRP period of 72 consecutive hours as specified in 14 CCR 17868.3(b)(3). Feedstock materials will remain in the active phase of composting until PFRP is met and the pile has undergone active aeration for a minimum of 21 to 28 days. Temperature is monitored through automated sensors (located as shown on Figure 9 of the RCSI) for a minimum of four readings per pile.

5.7 MOISTURE CONTENT OF MATERIALS

Feedstock with greater than 50% moisture content, to be determined by visual check, if free liquid is present then the feedstock will not be accepted. Water from the water tanks or the on-site storm water pond will be added to feedstock until an approximate moisture content of 45 to 55 percent is reached. This ensures optimal conditions for aerobic digestion to initiate in the windrows, minimizing the possibility of anaerobic conditions and attendant odor issues.

5.8 AIRBORNE EMISSION PRODUCTION

As described in Section 5.6, the windrows are to be turned regularly. Turning the windrows is important for maintaining even temperatures, redistributing moisture, and providing aeration. Proper aeration will allow for proper air flow and make oxygen available to the microorganisms. This will help control odors and emissions potentially associated with the windrows.

Fugitive dust is controlled through onsite visual monitoring and the use of a water truck that provides dust control as necessary. As discussed above, when needed due to lack of rainfall or during the hotter months, the compost piles will be sprayed with water to moisturize them and control dust.

5.9 PERSONNEL TRAINING

Project lead personnel have undergone and completed the 40-Hour United States Composting Council (USCC) Composting Operations training course which includes odor minimization management techniques. All BCG personnel will also be required to review and adhere to the OIMP. FRB site personnel working at the BCG have undergone the 40- Hour Hazardous Waste Operations and Emergency (Hazwoper) training certification program and are also required to attend the 8-hour refresher course annually. Records of employee training are maintained on-site. Orange County Fire Authority (OCFA) has issued the BCG general conditions which address operational, composting area, fire prevention, emergency response, safety protocols and requirements which will be adhered to in compliance with these requirements.

5.10 UTILITY SERVICE INTERRUPTIONS

Equipment utilized in the composting operation, including loaders, water truck, and screener, are powered by diesel fuel; potential power outages would not affect the equipment used at the BCG operation. Fuel for equipment is available through the existing diesel fuel storage tank at the FRB landfill.

5.11 SITE SPECIFIC CONCERNS

This facility has no site-specific concerns.

5.12 STORAGE PRACTICES

Feedstock receiving: Incoming materials will be stored no longer than 48 hours. If there is a high peak loading period there should be an effort to process the material and form it into windrows as quickly as possible where the aerobic breakdown can occur in a controlled state. This will require first in, first out approach to ensure each load is earmarked as to when it arrived and when it needs to be processed. The loads should also be kept as small as possible rather than adding more feedstock to a pile which would increase the potential for fires, odors, and vectors. This may require operations to reduce future feedstock shipments until operations can catch up to normal processing times. While the feedstock is waiting to be "officially" processed, some pre-monitoring can be done such as temperature monitoring to ensure the feedstock has not gone sour due to anaerobic degradation. If the feedstock creates significant issues, it can ultimately be buried at the landfill to remove the concern.

Composting: The average retention time for material in windrows will be 12 to 20 weeks. Phase 1A and 1B windrow dimensions will be roughly 20 feet wide by 12 feet high and Phase 1C CASP piles dimensions will be approximately a width of 22 feet, length of 88.5 feet, and a maximum height of 12 feet.

Finished compost storage: Most compost may be cured in place prior to being moved to the screening area. If a larger curing pile is created, prior to or post screening, it will be limited to 20 feet in height. A larger curing pile will only be used if the material is biologically ready to be cured (i.e., generating insufficient heat to generate nuisance odors).

OCWR's goal is to have just in time storage and have all finished material sold before it is stored; however, given the fluctuations in compost markets, compost may be stored up to 180 days, as necessary. But this is not expected to generate off-site odors.

TABLE 1

Possible Causes of Odors and Odor Minimization Management Techniques

Possible Causes of Odors	Odor Minimization Management Techniques
Odorous feedstock material upon arrival	1) Reject and turn back feedstock material loads to hauler/generator facility
	2) Initial moisture content of feedstock material loads shall not exceed 50% prior to its acceptance, to be determined by visual check, if free liquid is present then the feedstock load shall be rejected and turned back to hauler/generator facility
	3) Reject and turn back feedstock material loads with contamination level exceeding 10% and/or mixed with other organics
Excessive watering of compost pile in excess of 60% moisture content due to rain events causing ammonia-like odors	1) Once area is dry enough to work on, increase turning pile frequency to drain excess moisture and reduce moisture content between 40% - 60%
	2) Mix in additional feedstock material thoroughly while turning pile to absorb excessive moisture (open windrow composting only).
Standing water or ponding underneath or adjacent compost pile causing saturated feedstock material to rapidly decompose and emit odors	1) Maintain composting pad grade to flow away from pile to a low point established to hold and contain contact water for collection and proper disposal
	2) Maintain and fill in low spots within project area to prevent ponding or standing water
	3) Practice good housekeeping by containing loose feedstock material within the pile
Compost pile emitting Sulfur-like odors due to high temperatures exceeding 160 °F (anaerobic condition) and/or moisture content is below 40%	1) Check pile temperatures in excess of 160 °F and moisture content below 40%. If any monitoring or sampling point is in excess of 160 °F and/or moisture content is below 40%, turn and water entire pile thoroughly to obtain temperatures between 131 °F - 160 °F and moisture content between 40% – 60%

FIGURE 1

TETRA TECH BAS
21700 Copley Drive, Suite 200,
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

BEE CANYON GREENERY

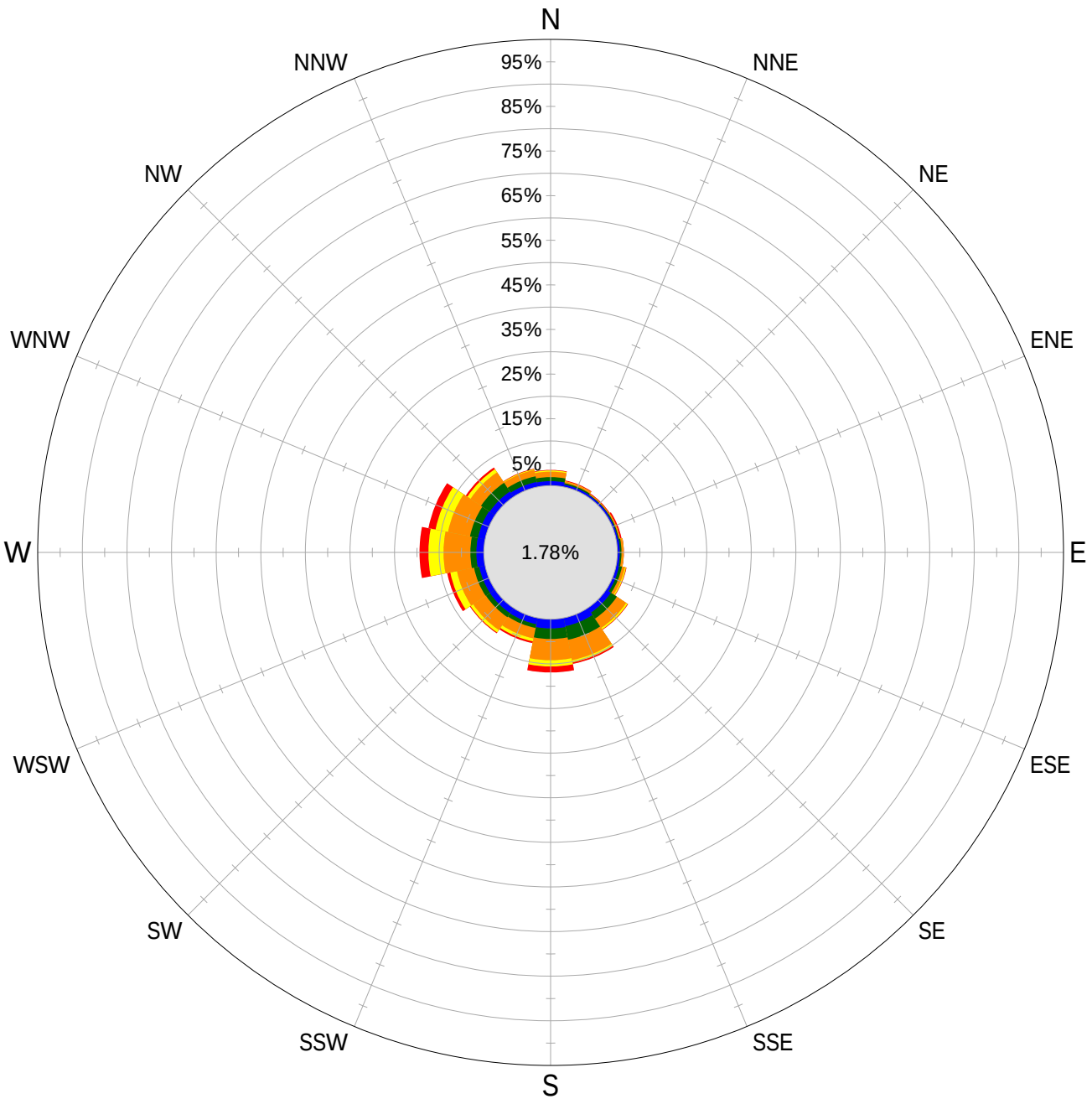
POTENTIAL OFF-SITE ODOR RECEPTORS MAP

FIGURE 1

P:\OCWR\FRB\BEE CANYON GREENERY\CAD\SHEETFILES\FIGURES\C-815 POTENTIAL OFF-SITE ODOR RECEPTORS MAP.DWG 8/5/2019 10:48 AM

EXHIBIT 1

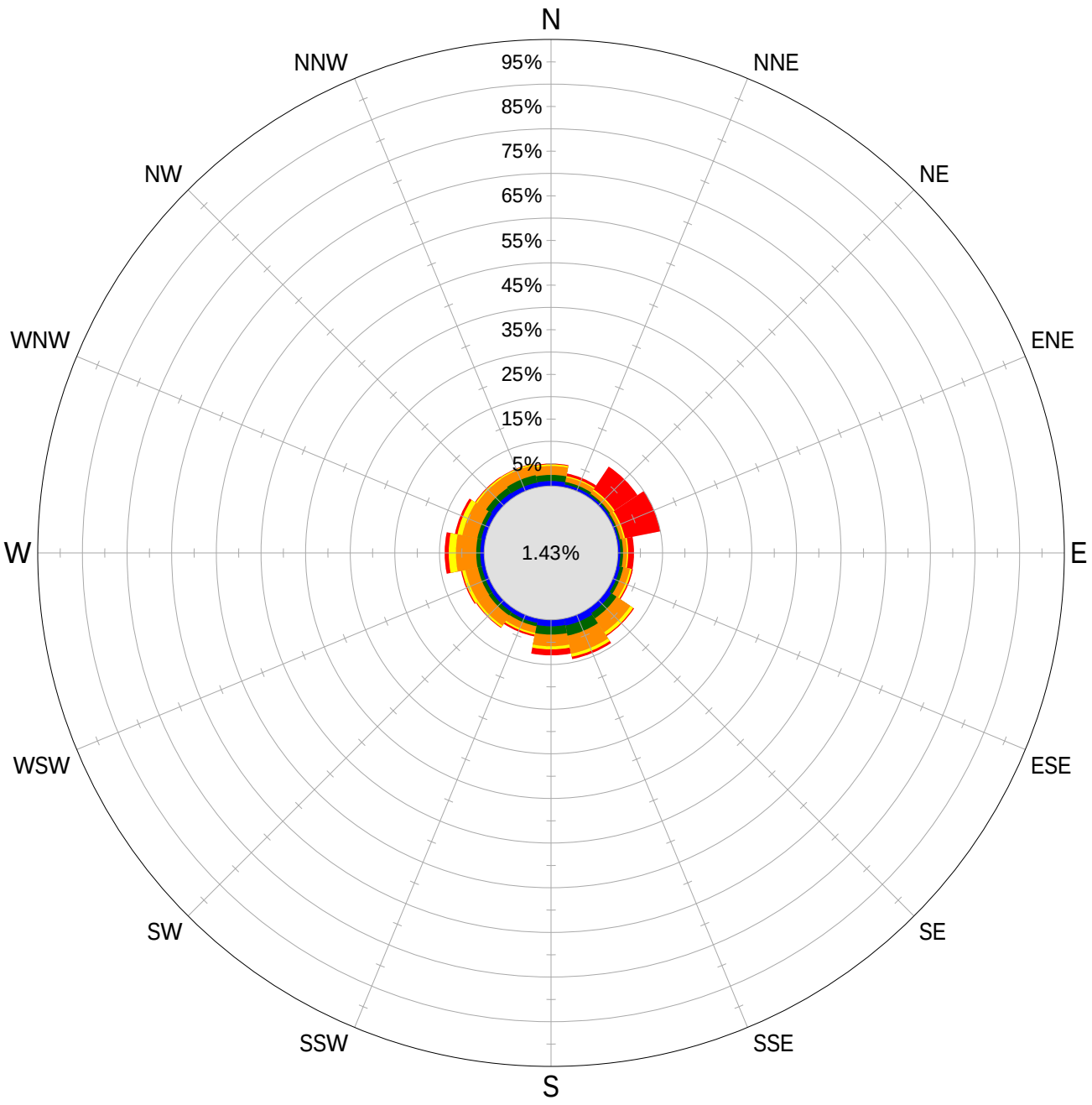
Wind Rose [FRB-1]



>10.00	8.35%
10.00	13.24%
8.00	39.98%
4.00	19.87%
2.50	16.79%
<=1.00	1.78%

Data Period :
From : 7/1/2017 00:00
To : 10/1/2017 00:00
Data Source : 1-Minute
W.Dir : WD(Degrees)
W.Speed: WS(MPH)
Total Records: 101414
Valid Records: 101414

Wind Rose [FRB-1]



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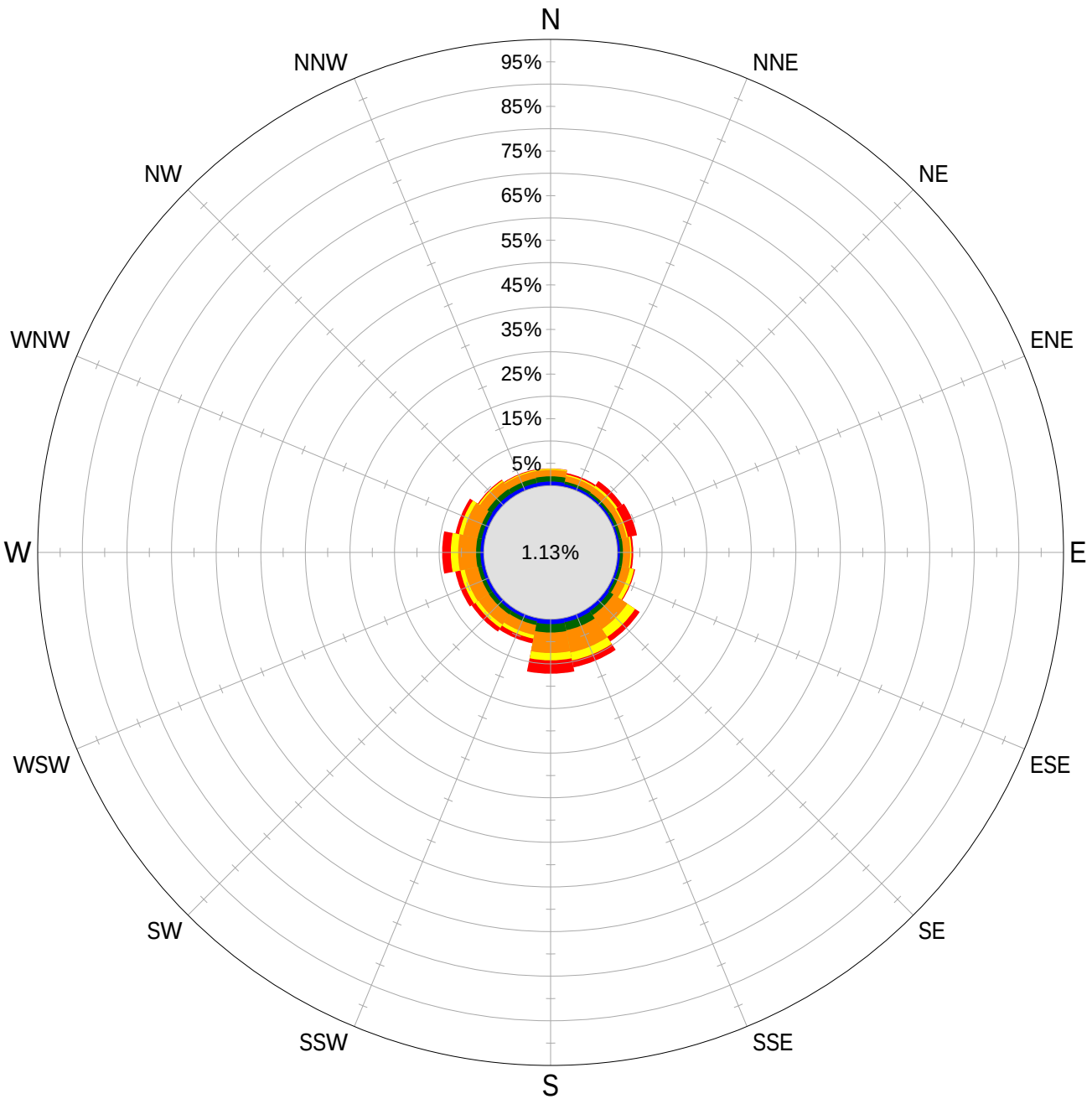
	10.00	9.19%
	8.00	37.23%
	4.00	17.29%
	2.50	13.52%
	<=1.00	1.43%

Data Period :
From : 10/1/2017 00:00
To : 1/1/2018 00:00
Data Source : 1-Minute
W.Dir : WD(Degrees)
W.Speed: WS(MPH)
Total Records: 120749
Valid Records: 120749

Wind Rose [FRB-1]



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Data Period :
From : 1/1/2018 00:00
To : 4/1/2018 00:00
Data Source : 1-Minute
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W.Speed: WS(MPH)
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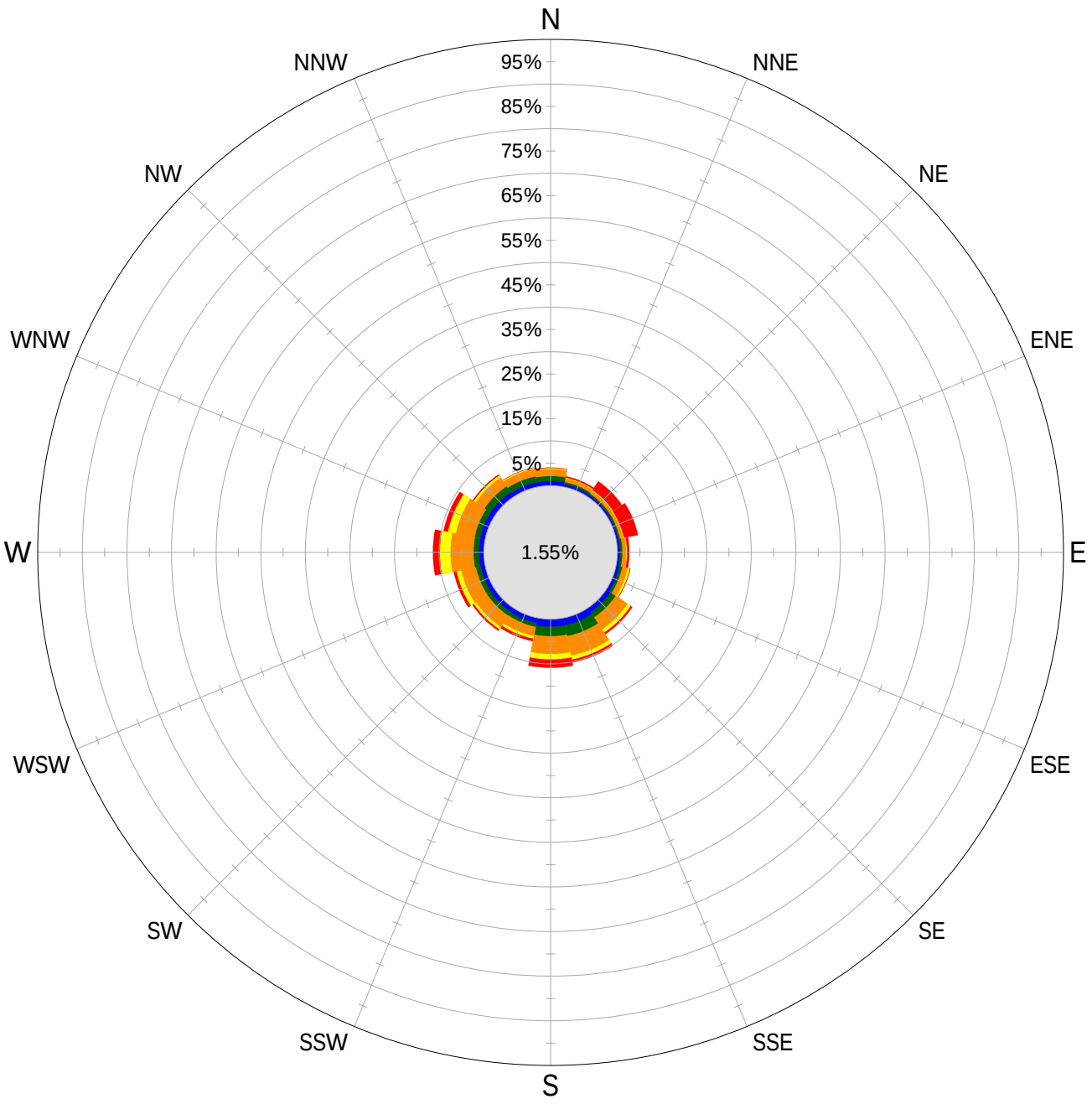
Valid Records: 98949

Wind Rose [FRB-1]



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8.00	39.40%
4.00	17.96%
2.50	14.31%
<=1.00	1.55%

Data Period :
From : 6/1/2017 00:00
To : 4/1/2018 00:00
Data Source : 1-Minute
W.Dir : WD(Degrees)
W.Speed: WS(MPH)
Total Records: 369539
Valid Records: 369539

EXHIBIT 2

BEE CANYON GREENERY COMPLAINT LOG

Updated: XXXXXX by XXXXXXX

ODOR INSPECTIONS LOG

No.	Date and Time Complaint Received	Date and Time of Incident	Complaint Type (i.e., Odors, Noise, View)	Complainant Name and Contact Information	OC W&R Complaint Recipient	Description of Complaint Landfill Operational Conditions Weather Conditions Working Area	PIO Follow-Up and Closure
1	X/X/XX 1:15 PM Response	X/X/XX 1:15PM	Odor	John Doe XXX Sand Canyon, Irvine 949-211-0701 Jdoe@gmail.com	HQ Notice	Description of complaint - see email/response Site Daily Report - 1.2.18 Phase C3 480'	
2							
3							
4							
5							
6							
7							
8							
9							