

## Appendix O –Odor Impact Minimization Plan



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### ODOR IMPACT MINIMIZATION PLAN Revision 4, October 2016

**Program: ODOR IMPACT MINIMIZATION FOR CHIPPING, GRINDING AND ORGANIC MATERIAL TRANSFER, RECYCLING AND IN-VESSEL DIGESTION OPERATIONS**

**Facility: Davis Street Transfer Station**

**Facility Location:** 2615 Davis Street, San Leandro CA 94577

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#### INTRODUCTION

This Odor Impact Minimization Plan (OIMP) has been developed to provide guidance to on-site personnel in the handling, storage, processing, and removal of organic fraction of MSW, green waste and food waste in accordance with Title 14 of the California Code of Regulations (14 CCR) Sections 17863.4 and 17896.31. This OIMP will be revised as necessary to reflect any changes in facility design or operations. A copy of the revisions will be given to the Local Enforcement Agency within 30 days of those changes. In addition, this OIMP will be reviewed annually to determine if revisions are necessary.

#### IDENTIFIED POTENTIAL SOURCES OF ODOR

Chipping and grinding of source separated green materials. This process is not regularly conducted at the Davis St. Transfer Station (DSTS). However, DSTS reserves the right to conduct chipping and grinding of green materials as part of diversion efforts. Green waste is received from public customers, inter-company sources and third-party commercial haulers. These materials are stored in the Organics Processing and Transfer Building until they are shipped in a processed or un-processed form. Most green waste contains food waste and is shipped out unprocessed (chipping and grinding of wood waste is still conducted on a regular basis).

Tipping and transfer green and wood waste at the Organics Processing and Transfer Building. The fully enclosed Organics Processing and Transfer Building is a 29,000 square foot building where green material and source-separated organics material such as yard and food waste, is tipped by WMAC's intercompany collection vehicles. Materials are tipped on to a concrete pad and then top loaded in to transfer trailers, for shipment to off-site composting facilities. These materials can be a source of odor on the tipping floor and transfer tunnel, or when pushed from place to place or loaded into transfer trailers for off-site shipment.

Sorting of Multi-Family Mixed Waste (MMW) at the Dry Waste Materials Recovery Facility (MRF). The MMW can be an odor source on the tipping floor or as it is being processed on sort lines for recovery of recyclables. DSTS utilizes and expects the water spray will be adequate to prevent any odor issues. MMW will not be stored longer than 24 hours prior to processing and the bunkers with sorted materials will be emptied after every shift.

Sorting and processing of Multi-Family, Single Family and Commercial Waste at the Organic Material Recycling Facility (OMRF) and Organic Material Processing Facility (OMCF). Both facilities will be closed to the general public. Municipal solid waste (MSW) will be received and processed Monday through Saturday at the OMRF. MSW deliveries to the OMRF will be via Waste Management refuse collection vehicles or by

conveyor from the main transfer building at DSTS. Through a combination of highly automated mechanical, optical and pneumatic systems, recyclables and non-organics will be removed, and organics will be size-reduced for further processing at the OMCf. Processed material from the OMRf will be bunkered and baled or conveyed to the Green Waste Processing and Transfer Building, (OMCF or as residual back to the main transfer building at DSTS during each operating shift.

Pre-sorted MSW will be conveyed from the OMRf and received and processed at the OMCf Monday through Friday. The OMCf may receive material on Saturdays as needed. The MSW materials will be further processed to remove recyclables and non-organics. The organics-rich fraction of municipal solid waste (OFMSW) will then be biologically treated via in-vessel composting (SMARTURN System) to create a marketable compost product. As a future project a portion of the OFMSW will be anaerobically digested to generate a biogas fuel source (Anaerobic Digester System).

Potential odor sources at the OMRf and OMCf include tipping, conveying and processing of MSW, and loading and unloading of pre- and post-processed materials into the compost vessels. All activities at the OMRf and OMCf will be within enclosed buildings, equipped with engineered air handling systems for dust and odor control. Additional odor control design and operational measures are described herein.

## **ODOR MONITORING AND MINIMIZATION PLAN MEASURES**

Listed below are applicable CCR 14 requirements for odor monitoring and control, recordkeeping and existing or proposed measures to comply with those requirements.

### **Sections 17863.4(1) and 17896.31(b)(1) Odor Monitoring Protocol**

1. Proximity of Odor Receptors
  - a. The closest receptors will be personnel who are on-site daily working at the DSTS facility.
  - b. The closest off-site receptors are industrial and exist along the North, East, and South borders of the DSTS property.
  - c. The Oyster Bay Park borders the property on the West side and visitors to the park could be receptors of odors.
  - d. The closest residential areas are approximately 1km to the South and Northeast of the facility.
2. Methods for Assessing Odor Impacts
  - a. As a part of their daily routine, managers will evaluate on-site odors and operations for their potential to release objectionable odors.
  - b. Best Management practices such as processing material promptly and moving material off-site in a timely manner will be used to minimize the release of objectionable odors.
  - c. If objectionable odors are detected, the following protocols will be implemented:
    - i. Investigate and determine the likely source of the odor.
    - ii. Immediately take steps to mitigate the problem. Possible sources and likely management actions are:
      1. Unprocessed green waste
        - a. Ensure that oldest green waste is processed/shipped first
        - b. Increase processing by increasing hours of operation or by leasing additional processing equipment
        - c. Increase the off-site transport of unprocessed material
        - d. Activate perimeter odor control misting system.
      2. Processed green waste
        - a. Activate perimeter odor control misting system during the “opening” of piles

- b. Increase off-site transport of material
  - 3. Unprocessed MMW
    - a. Reduce storage time by increasing processing hours of operation.
    - b. Apply water and/or activate odor control misting system.
  - 4. Processed MMW
    - a. Reduce storage time by increasing rate of transfer to Organic Material Composting Facility (OMCF) and transfer off-site.
    - b. Activate perimeter odor control misting system.
- iii. Determine if odors are traveling off-site by patrolling site perimeter or, if necessary, contacting neighborhood representatives.

#### **Sections 17863.4(2) and 17896.31(b)(2) Meteorological Conditions**

1. Wind speed, wind direction, and temperature are the climatological conditions that most affect odor migration
2. Average wind speed is generally at its lowest during the early autumn months. Peak winds usually occur during the early summer months increasing the possibility of off-site odor transport.
3. Wind direction is quite variable from day-to-day. However, real time directional information is available from the on-site weather station.

#### **Sections 17863.4(3) and 17896.31(b)(3) Complaint Responses and Record Keeping Protocol**

1. A DSTS manager will respond promptly to any odor complaint in person within 48 hours excluding weekends and holidays.
2. He or she will visit the location of the complainant and determine if the site is indeed responsible for the odor.
3. If is verified that the site is responsible, the manager will implement mitigation measures immediately.
4. If warranted, examine current odor control procedures and modify if necessary.
5. Document complaint and measures taken in the sites Special Occurrence Log.

#### **Sections 17863.4 (4) and 17896.31(b)(4) Design Considerations for Minimizing Odors - Organics Processing and Transfer Building**

1. Method and Degree of Aeration: The DSTS Organics Processing and Transfer Building is engaged in the transfer and processing of source-separated green waste, food waste and OFMSW. Aeration is not required for this activity.
2. Moisture Content of Materials: Green waste of both low moisture content (woody material) and high moisture content (grass clippings), and food waste are received at the DSTS Organics Processing and Transfer Building. All operations are within a fully enclosed building. Tipping indoors or under cover and timely shipping of materials are effective in minimizing odors caused by receipt of high moisture green waste.
3. Feedstock: Consists of green material, yard trimmings, food waste, and wood waste and OFMSW.
4. Air Borne Emission Production: Misting system and ventilation system designed to control air borne emissions production. The building is equipped with a mechanical filtration system for odor control
5. Process Water Distribution: Process water or liquids are loaded out with the green material, food waste and OFMSW. Any discharge that is necessary will be to the sanitary sewer.
6. Pad and Site Drainage and Permeability: The organics/green waste tipping platform is indoors so green material is not exposed to storm water which could create odors when in contact with green waste and food waste.

7. **Equipment Reliability:** Mobile equipment consists of a wheel loader and long-haul transfer trailers. The building also includes a mechanical ventilation/air filtration system. The site employs a staff of mechanics to maintain processing, loading, environmental control and shipping equipment.
8. **Personnel Training:** Employees to whom this plan pertains will be trained at the start of the OIMP implementation and whenever the plan is updated or changed.
9. **Weather Impacts:** Tipping operations for green waste and food waste and OFMSW are conducted indoors or under cover, respectively; so only severe weather events compromising the safety of transfer truck drivers would temporarily cease operations. Storage space in the green waste building is such that a short, temporary shutdown would not adversely affect the operation.
10. **Utility Service Interruption:** In the event of a long-term service interruption of electrical power, green waste would be shipped off-site unprocessed and alternative methods to manage the green waste/food waste will be employed (i.e. transfer to off-site location, taken to the transfer pit, etc.).

#### **Sections 17863.4 (4) and 17896.31(b)(4) Design Considerations for Minimizing Odors - Wood Waste Pad**

1. **Method and Degree of Aeration:** The Davis Street Transfer Station is engaged in only the chipping and grinding of green waste delivered to this area of the site. There is no on-site outdoor composting of materials and thus no aeration of materials.
2. **Moisture Content of Materials:** Odor control agent can be added if necessary to water sprayed during dust control to counteract the increased possibility of objectionable odors caused by high moisture content.
3. **Feedstock:** Processed and source-separated wood waste material.
4. **Air Borne Emissions Production:** Water truck misting is designed to control air born emissions production.
5. **Process Water Distribution:** Wood waste tipping operations are conducted outdoors. Drainage is designed to flow through bio swales prior to discharge. Storm water sampling is conducted in accordance with state requirements and the site's general storm water permit.
6. **Pad and Site Drainage Permeability:** The tipping area is maintained by on-site staff and contractors as necessary, to minimize water ponding and reduce potential for odor generation from high moisture content in green materials. The operations area is graded to drain to bioswale structures, which counteracts the potential for objectionable odors due to high liquids content of the wood materials .
7. **Wastewater Pond:** No wastewater ponds that could be an odor source are present at this site.
8. **Storage Practices:** Wood waste is stored on the wood waste transfer and grinding pad.
9. **Equipment Reliability:** In the event of more than a short, temporary shutdown of equipment, equipment to load and ship material will be leased or borrowed from other WM facilities. Personnel to move and process feedstock are provided by union contract and are available as needed.
10. **Personnel Training:** Employees to whom this plan pertains will be trained at the start of the OIMP implementation and whenever the plan is updated or changed.
11. **Weather Impacts:** Tipping operations for wood waste are conducted outdoors; only severe weather events compromising the safety of drivers would temporarily cease operations. Storage space in the wood waste tipping area is such that a short, temporary shutdown would not adversely affect the operation.
12. **Utility Service Interruption:** In the event of a power failure, temporary lighting will be provided if the trans- loading of materials during the hours of operation require lighting.

## **Sections 17863.4 (4) and 17896.31(b)(4) Design Considerations for Minimizing Odors- Dry Waste Material Recovery Facility (MRF)**

1. Method and Degree of Aeration: Commercial/industrial and multi-family MSW processing does not require aeration.
2. Moisture Management: Odor control agent can be added to the misting system to counteract the increased possibility of objectionable odors caused by high moisture content.
3. Feedstock: Commercial/industrial MSW and multi-family MSW.
4. Drainage Controls: Multi-family MSW tipping operations are under cover so MSW is not exposed to storm water which could create odors when in contact with MSW. However, storm water sampling is conducted in accordance with state requirements and the site's general storm water permit.
5. Air Borne Emissions Production: Misting systems are designed to control air borne emissions production.
6. Pad Maintenance: The indoor tipping area is maintained by on-site staff and contractors as necessary, to minimize water ponding and reduce potential for odor generation from high moisture content MSW materials.
7. Wastewater Pond: No wastewater ponds are present at this site.
8. Storage Practices: Adequate tipping storage capacity has been designated for the multi-family MSW deliveries on the west side of the Dry Waste MRF, north of the dry commercial/industrial waste stockpile.
9. Equipment Reliability: In the event of more than a short, temporary shutdown of equipment, equipment to load and ship material will be leased or borrowed from other WM facilities. Personnel to move and process feedstock are provided by union contract and are available as needed.
10. Personnel Training: Employees to whom this plan pertains will be trained at the start of the OIMP implementation and whenever the plan is updated or changed.
11. Weather Impacts: Tipping operations for commercial/industrial/multi-family MSW are conducted indoors undercover.
12. Utility Service Interruption: In the event of a power failure, inbound deliveries will be diverted to the Davis Street Transfer Station main building for outbound loading to the Altamont Landfill for disposal.
13. Tarping: Tarping of feedstock is neither practical nor necessary due to the short time feedstock and processed materials are on-site.

## **Section 17896.31(b)(4) Design Considerations for Minimizing Odors- Organics Material Recycling Facility (OMRF)**

1. Method and Degree of Aeration: Multi-family MSW, single-family MSW, and commercial MSW processing does not require aeration.
2. Moisture Content of Materials: Odor control agent can be added if necessary to water sprayed during dust control to counteract the increased possibility of objectionable odors caused by high moisture content.
3. Feedstock: Consists of single-family, multi-family and commercial mixed waste.
4. Drainage Controls: The processing of multi-family, single-family and commercial MSW will be conducted in the fully enclosed OMRF building. Process water created is discharged to the sanitary sewer via automatic sump pumps.
5. Air Borne Emissions Production: The OMRF building ventilation system is designed to maintain a negative pressure during operating and non-operating hours. The ventilation system will operate 7 days per week 24 hours per day. The building ventilation will discharge through a bio-filter and particulate baghouse systems to reduce or eliminate odors to outdoor receptors. When entering the building the doors open and then automatically close keeping odor inside the building. Additionally, the facility will be built with sort cabins (HVAC enclosure structure for sorters to occupy while performing sorting

tasks) for the workers who will receive ventilation through HVAC conditioned air from exterior of building.

6. Pad Maintenance: The indoor tipping area is maintained by on-site staff and contractors as necessary, including minimize water ponding and potential odor generation.
7. Wastewater Pond: No wastewater ponds are present at this site.
8. Storage Practices: 48 hours excluding weekends and holidays.
9. Equipment Reliability: In the event of more than a short, temporary shutdown of equipment, equipment to load and ship material will be leased or borrowed from other WM facilities. Personnel to move and process feedstock are provided by union contract and are available as needed.
13. Personnel Training: Employees to whom this plan pertains will be trained at the start of the plans implementation and whenever the plan is updated or changed.
10. Weather Impacts: Tipping operations for multi-family, single-family and commercial MSW are conducted indoors
11. Utility Service Interruption: In the event of a power failure, inbound deliveries will be diverted to the Davis Street Transfer Station main building for outbound loading to the Altamont Landfill for disposal.
12. Tarping- Tarping of feedstock is neither practical nor necessary due to the short time feedstock and processed materials are onsite.

#### **Section 17896.31(b)(4) Design Considerations for Minimizing Odors- Organics Material Composting Facility (Pre Processing, Lane Turner, Post Processing) (OMCF)**

1. Method and Degree of Aeration –Positive and negative aeration. A specially designed in-vessel composting (IVC) with covered composting lanes that capture exhaust air generated during the active composting process. The IVC process is located entirely within the enclosed OMCf building. The exhaust air generated from the IVC process is treated in the following manner.
  - a. The OMCf composts OFMSW in a specially designed in-vessel composting with covered composting lanes that capture exhaust air generated during the active composting process. The IVC process is located entirely within the enclosed composting building. The exhaust air generated from the IVC process is treated in the following manner:
    - i. A counter-flow acid scrubber utilizing diluted sulfuric acid captures ammonia in the exhaust air stream generating a ammonium sulfate liquid fertilizer by-product; and
    - ii. Following treatment in the acid scrubber, the exhaust air is treated in a bio filtration system to oxidize remaining volatile organic compounds (VOCs).
2. Moisture Content of Materials: A specially designed IVC with covered composting lanes that are monitored for moisture during the active composting processes.
3. Feedstock: Processed Organic fraction of MSW (received from OMRF), cellulosic materials, food waste and green waste.
4. Drainage Controls: The Pre Processing, Lane Turner and Post Processing will be conducted in the fully-enclosed OMCf building. Process water is re-used in the composting phase. Any process water that is not required for re-use will be discharged to the sanitary sewer through control valves and sump pumps located in the Lane Turner vessels.
5. Air Borne Emissions Production:
  - a. The building ventilation system is designed to maintain a negative pressure during operating and non-operating hours. The ventilation system will operate 7 days per week 24 hours per day. Automatic doors will be utilized to gain access to the Pre-Processing and Post Processing Buildings of the OMCf.
  - b. Building exhaust air will be ventilated to a bio filter.

- c. A counter-flow acid scrubber utilizing diluted sulfuric acid captures ammonia in the exhaust air stream generating an ammonium sulfate liquid fertilizer by-product; and
  - d. Following treatment in the acid scrubber, the exhaust air is treated in a bio filtration system to oxidize remaining VOCs.
- 6. Pad Maintenance: The indoor tipping area is maintained by on-site staff and contractors as necessary, to minimize liquid ponding and reduce potential for odor generation from high moisture content OFMSW materials.
- 7. Wastewater Pond: No wastewater ponds are present at this site.
- 8. Equipment Reliability: In the event of more than a short, temporary shutdown of equipment, equipment to load and ship material will be leased or borrowed from other WM facilities. Personnel to move and process feedstock are provided by union contract and are available as needed.
- 9. Personnel Training: Employees to whom this plan pertains will be trained at the start of the plans implementation and whenever the plan is updated or changed.
- 9. Weather Impacts: OFMSW is conveyed from the OMRF to the OMCF; this operation is entirely indoors. Tipping operations for source separated green waste, food waste and cellulosic materials are also conducted indoors. Weather is not anticipated to affect these operations.
- 11. Utility Service Interruption: In the event of a power failure, inbound deliveries will be diverted to the Davis Street Transfer Station main building for outbound loading to the Altamont Landfill for disposal.
- 12. Tarping: All outbound compost trailers will be loaded inside of the building under cover via conveyor. Trailers will be tarped prior to leaving building. Roll up doors are utilized at loading dock.

#### **Section 17896.31(b)(4) Design Considerations for Minimizing Odors- Organics Material Composting Facility (Anaerobic Digestion or SmartFerm) (OMCF)**

- 1. Method and Degree of Aeration: Not required for Anaerobic Digestion.
- 2. Moisture Content of Materials: Specially-designed in-vessel anaerobic digestion vessels are monitored through the digestion phase for temperature and humidity. Moisture can be adjusted through the monitoring and control system.
  - a. The Anaerobic Digestion Building ventilation system is designed to maintain a negative pressure during operating and non-operating hours. The ventilation system will operate 7 days per week 24 hours per day.
  - b. Bio-filtration – Bio filtration equipment is utilized in the ventilation system of the anaerobic digestion building.
  - c. Automatic doors will be utilized to gain access to the receiving hall of the Anaerobic Digestion Building.
  - d. Anaerobic digestion occurs in a specially designed gas-tight and watertight environment with no opportunity for fugitive odor discharge.
  - e. Hydrogen sulfide (H<sub>2</sub>S) present in digester gas will be removed by an activated carbon or Sulfur treatment system.
  - f. Digestate will be treated in aerated and heated IVC tunnels to rapidly remove residual ammonia prior to composting in the OMCF. Exhaust air from the IVC tunnels will be treated in an acid scrubber and bio-filtration system.
- 3. Feedstock: Processed Organic fraction of MSW (received from OMRF), cellulosic materials, food waste and green waste
- 4. Drainage Controls: Anaerobic Digestion vessels are fully enclosed. A percolate tank is located underneath the vessels. All process liquids are re circulated and used in the anaerobic digestion process. Any process water that is not used will be discharged to the sanitary sewer through control valves and sump pumps located in the Lane Turner vessels. All tipping, pre-anaerobic digestion and post-anaerobic digestion activities are conducted indoors under cover so organic material is not exposed to storm water.
- 5. Air Borne Emissions Production:

- a. The building ventilation system is designed to maintain a negative pressure during operating and non-operating hours. The ventilation system will operate 7 days per week 24 hours per day.
  - b. Building exhaust air will be ventilated to a bio filter.
  - c. A counter-flow acid scrubber utilizing diluted sulfuric acid captures ammonia in the exhaust air stream generating an ammonium sulfate liquid fertilizer by-product; and
  - d. Following treatment in the acid scrubber, the exhaust air is treated in a bio filtration system to oxidize remaining VOCs.
6. Pad Maintenance: The indoor tipping areas in the OMCF are maintained by on-site staff and contractors as necessary, to minimize liquid ponding and reduce potential for odor generation from high moisture content OFMSW materials.
  7. Wastewater Pond Control: No wastewater ponds are present at this site.
  8. Equipment Reliability: In the event of more than a short, temporary shutdown of equipment, equipment to load and ship material will be leased or borrowed from other WM facilities. Personnel to move and process feedstock are provided by union contract and are available as needed.
  9. Personnel Training: Employees to whom this plan pertains will be trained at the start of the plan's implementation and whenever the plan is updated or changed.
  10. Weather Impacts: OFMSW is conveyed from the OMRF to the OMCF; this operation is entirely indoors. Tipping operations for source separated green waste, food waste and cellulosic materials are also conducted indoors.
  11. Utility Service Interruption: In the event of a power failure, inbound volume will be diverted to the Davis Street Transfer Station main building for outbound loading to the Altamont Landfill for disposal.

#### **Sections 17863.4(5) and 17896.31(b)(5) Operating Considerations for Minimizing Odors-Organics Processing and Transfer Building**

1. Method and Degree of Aeration: The Davis Street Organics Processing and Transfer Building is engaged in the transfer and processing of green waste, food waste and OFMSW. Aeration is not required for this operation.
2. Moisture Content of Materials: Green waste of both low moisture content (woody material) and high moisture content (grass clippings), food waste and OFMSW are received at the Davis Street Organics Processing and Transfer Building. Tipping indoors or under cover and timely shipping of materials are effective in minimizing odors caused by receipt of high moisture green waste or Food Waste and OFMSW. Odor control agent can be added if necessary to water sprayed during dust control to counteract the possibility of objectionable odors caused by high moisture content.
3. Feedstock: Consists of source separated green material, yard trimmings, food waste, and wood waste, and OFMSW.
4. Equipment Reliability: The site employs a staff of mechanics to maintain processing, loading, and shipping equipment.
5. Personnel Training: Employees to whom this OIMP pertains will be trained at the start of the plan's implementation and whenever the plan is updated or changed.
6. Process Water Distribution: Feedstock may be sprayed with water before, during and after processing to control dust. An odor control agent is added if necessary to the water for application before and after processing to minimize odors.
7. Pad Maintenance: The indoor tipping area is maintained by on-site staff and contractors as necessary, to minimize liquid ponding and reduce potential for odor generation from high moisture content green, food and yard materials.
8. Waste Water Pond Control: No wastewater ponds are present at this site.
9. Storage Practices: All inbound materials are tipped inside of the building. Within 48 hours, material is transferred to final processing. Tipped loose material is pushed up into piles to maximize open floor space.

10. Contingency:

- a. Power: In the event of a long-term service interruption of electrical power, green waste would be shipped off-site.
- b. Volume: Excess inbound volume will be diverted off-site in the event of inbound volume in excess of peak capacity.
- c. Mechanical Failure: Spare rolling stock is maintained at DSTS or rental units will be used to respond to a mechanical failure.

**Sections 17863.4(5) and 17896.31(b)(5) Operating Considerations for Minimizing Odors- Wood Waste Pad**

1. Method and Degree of Aeration: The Davis Street Transfer Station is engaged in only the chipping and grinding of green waste delivered to this area of the site. There is no on-site outdoor composting of materials and thus no aeration of materials.
2. Moisture Management: An odor control agent can be added if necessary to water sprayed during dust control to counteract the increased possibility of objectionable odors caused by high moisture content.
3. Feedstock: Consists of processed and source separated wood waste
4. Drainage Controls: Run off is diverted to bio swales.  
However, storm water sampling is conducted in accordance with state requirements and the site's general storm water permit.
5. Pad Maintenance: The tipping area is maintained by on-site staff and contractors as necessary, to minimize water ponding and reduce potential for odor generation from high moisture content green and wood materials.
6. Waste Water Pond Control: No wastewater ponds are present at this site.
7. Storage Practices: Wood waste material is stored and stock piled on the pad. Materials are push up into piles to maximize open tipping and operating space. Processed materials are shipped off-site within 48 hours of receipt excluding weekends and holidays.
8. Contingency:
  - a. Power: In the event of a power failure, temporary lighting will be provided for the trans-loading of materials during the hours of operation that require lighting.
  - b. Volume: Excess inbound volume will be diverted to the Davis St. Transfer Station for outbound loading to the Altamont Landfill for disposal in the event of inbound volume in excess of peak capacity.
  - c. Mechanical Failure: In the event of more than a short, temporary shutdown of equipment, equipment to load and ship material will be leased or borrowed from other WM facilities. Personnel to move and process feedstock are provided by union contract and are available as needed.
9. Tarping: Tarping of feedstock is neither practical nor necessary due to the short time feedstock and processed materials are onsite.

**Sections 17863.4(5) and 17896.31(b)(5) Operating Considerations for Minimizing Odors - Dry Waste MRF**

1. Method and Degree of Aeration: Commercial/industrial/multi-family MSW processing does not require aeration.
2. Moisture Management: Odor control agent can be added to the misting system if necessary to counteract the increased possibility of objectionable odors caused by high moisture content.
3. Feedstock: Consists commercial/industrial and multi-family mixed MSW.
4. Drainage Controls: Tipping operations are under cover and not exposed to storm water which could create odors when in contact with MSW.

5. Pad Maintenance: The indoor tipping area is maintained by on-site staff and contractors as necessary, to minimize liquid ponding.
6. Waste Water Pond Controls: No wastewater ponds are present at this site.
7. Storage Practices: Commercial/industrial and multi-family MSW is processed within 24 hours to minimize odors.
8. Contingency:
  - a. Power: In the event of a power failure, inbound deliveries will be diverted to the Davis Street Transfer Station main building for outbound loading to the Altamont Landfill for disposal.
  - b. Volume: Excess inbound volume will be diverted to the Davis St. Transfer Station for outbound loading to the Altamont Landfill for disposal in the event of inbound volume in excess of peak capacity.
  - c. Mechanical Failure: In the event of more than a short-term mechanical failure, inbound volume will be diverted to the Davis St. Transfer Station for outbound loading to the Altamont Landfill for disposal in the event of a mechanical failure.
9. Tarping: Tarping of feedstock is neither practical nor necessary due to the short time feedstock and processed materials are onsite.

#### **Section 17896.31(b)(5) Operating Considerations for Minimizing Odors- Organics Material Recycling Facility (OMRF)**

1. Method and Degree of Aeration: Not required for multi-family, single-family and commercial MSW.
2. Moisture Management: The processing of multi-family, single-family and commercial MSW will be conducted in a fully enclosed building with bio-filtration. The ventilation system will operate 7 days per week 24 hours per day. Automatic doors will be closed when not in use. All building exhaust air will be ventilated to a bio filter and bag house.
3. Feedstock: Consists of multi-family, single-family and commercial MSW.
4. Drainage Controls: Alltipping operations are conducted indoors so MSW is not exposed to storm water. Any process water created is discharged to the sanitary sewer via automatic sump pumps.
5. Pad Maintenance: The indoor tipping area is maintained by on-site staff and contractors as necessary, to minimize liquid ponding and reduce potential for odor generation from high moisture content MSW materials.
6. Waste Water Pond Controls: No wastewater ponds are present at this site.
7. Storage Practices: Multi-family, single-family and commercial MSW are processed within 48 hours with the excluding of weekends and holidays.
  - a. Non-recyclable residue/residual material is delivered to the main MSW transfer building via a covered conveyor. All processed OFMSW is conveyed inside of the OMRF and OMCF buildings.
  - b. All outbound material commodity trailers will be loaded at a sealed dock with a dock-sealing baffle.
  - c. Commodities will be loaded directly into trailers staged at the dock. High-speed doors will be utilized at loading dock.
8. Contingency:
  - a. Power: In the event of a power failure, inbound volume will be diverted to the Davis Street Transfer Station for outbound loading to the Altamont Landfill for disposal.
  - b. Volume: Excess inbound volume will be diverted to the Davis St. Transfer Station for outbound loading to the Altamont Landfill for disposal in the event of inbound volume in excess of peak capacity.
  - c. Mechanical Failure: In the event of more than a short-term mechanical failure, inbound volume will be diverted to the Davis St. Transfer Station for outbound loading to the Altamont Landfill for disposal in the event of a mechanical failure.

9. Bio-filtration: Bio-filtration equipment is utilized in the ventilation system of the OMRF building. The equipment is maintained by on-site personnel and contractors as necessary.

### **Section 17896.31(b)(5) Operating Considerations for Minimizing Odors- Organics Material Composting Facility (Pre Processing, Lane Turner, Post Processing) (OMCF)**

1. Method and Degree of Aeration: Positive and negative aeration. A specially designed IVC with covered composting lanes that capture exhaust air generated during the active composting process. The IVC process is located entirely within the enclosed composting building. The exhaust air generated from the IVC process is treated in the following manner:
  - a. The OMCF composts OFMSW in a specially designed IVC with covered composting lanes that capture exhaust air generated during the active composting process. The IVC process is located entirely within the enclosed composting building. The exhaust air generated from the IVC process is treated in the following manner:
    - i. A counter-flow acid scrubber utilizing diluted sulfuric acid captures ammonia in the exhaust air stream generating a ammonium sulfate liquid fertilizer by-product; and
    - ii. Following treatment in the acid scrubber, the exhaust air is treated in a bio filtration system to oxidize remaining VOCs.
  - b. The equipment is maintained by on-site personnel and contractors as necessary.
2. Moisture Content of Materials: A specially designed IVC with covered composting lanes that are monitored for moisture during the active composting processes.
3. Feedstock: Consists of OFMSW, cellulosic material, inert, organic materials, and food waste/food scraps.
4. Drainage Controls: The Pre Processing, Lane Turner and Post Processing will be conducted in the fully-enclosed OMRF building. Process water is re-used in the composting phase. Any process water that is not required for re-use will be discharged to the sanitary sewer through control valves and sump pumps located in the Lane Turner vessels. The equipment is maintained by on-site personnel and contractors as necessary.
5. The processing of OFMSW from multi-family, single-family and commercial MMW will be conducted in a fully enclosed building with bio filtration.
6. The building ventilation system is designed to maintain a negative pressure during operating and non-operating hours. The ventilation system will operate 7 days per week 24 hours per day.
7. Automatic high-speed doors will be utilized to gain access to the Pre-Processing and Post Processing Buildings of the OMCF.
8. Pre Processing, Lane Turner and Post Processing building exhaust air will be ventilated to a bio-filter.
9. All pre, composting and post composting activities are conducted indoors under cover so compost is not exposed to storm water.
10. Pad Maintenance The indoor tipping area is maintained by on-site staff and contractors as necessary, including minimizing puddling.
11. Waste Water Pond Controls: No wastewater ponds are present at this site.
12. Storage Practices
  - a. Pre Processing Bunker: Materials are loaded into the rotary drum reactor within 48 hours excluding weekends and holidays.
  - b. Lane Turner Bunker: Materials are loaded into the Lane Turner Vessel System within 48 hours excluding weekends and holidays.
  - c. Post Processing Surge Hopper: Materials are loaded into the Post Processing system within 48 hours excluding weekends and holidays.

- d. Post Processing Trailer Loading: Material is loaded into the automatic trailer loading system and shipped within 48 hours excluding weekends and holidays.
- 13. All outbound compost trailers will be loaded inside of the building under cover via conveyor. Trailers will be tarped prior to leaving building. High-speed doors are utilized at loading dock.
- 14. Contingency-
  - a. Power: In the event of a power failure, inbound volume will be diverted to the Davis Street Transfer Station for outbound loading to the Altamont Landfill for disposal.
  - b. Volume: Excess inbound volume will be diverted to the Davis St. Transfer Station for outbound loading to the Altamont Landfill for disposal in the event of inbound volume in excess of peak capacity.
  - c. Mechanical Failure: In the event of more than a short-term mechanical failure, inbound volume will be diverted to the Davis St. Transfer Station for outbound loading to the Altamont Landfill for disposal in the event of a mechanical failure.

**Section 17896.31(b)(5) Operating Considerations for Minimizing Odors- Organics Material Composting Facility (Anaerobic Digestion or SmartFerm) (OMCF)**

- 1. Method and Degree of Aeration: Not required for Anaerobic Digestion.
- 2. Moisture Content of Materials: Specially designed in-vessel anaerobic digestion vessels are monitored through the digestion phase for temperature and humidity. Moisture can be adjusted through the monitoring and control system.
  - a. The ventilation system will operate 7 days per week 24 hours per day.
  - b. Automatic doors will be closed when not in use.
  - c. Building exhaust air will be ventilated to a bio filter.
  - d. Hydrogen sulfide (H<sub>2</sub>S) present in digester gas will be removed by an activated carbon or Sulfur treatment system.
  - e. All digestate will be treated in aerated and heated IVC tunnels to rapidly remove residual ammonia prior to composting in the OMCf. All Exhaust air from the IVC tunnels will be treated in an acid scrubber and bio-filtration system.
- 3. Feedstock: Consists of OFMSW, cellulosic material, inert, organic materials, and food waste/food scraps.
- 4. Drainage Controls: Any excess process water that is not reclaimed in the process is discharged to the sanitary sewer via automatic sump pumps. All tipping, pre-anaerobic digestion and post-anaerobic digestion activities are conducted indoors under cover so organic material is not exposed to storm water.
- 5. Pad Maintenance: The indoor tipping areas (Pre- and Post- Processing) are maintained by on-site staff and contractors as necessary, to minimize liquid ponding and reduce potential for odor generation from high moisture content OFMSW materials.
- 6. Waste Water Pond Controls: No wastewater ponds are present at this site.
- 7. Storage Practices: Feedstock is loaded into the Anaerobic Digestion within 48 hours excluding weekends and holidays.
- 8. Contingency:
  - a. Power: In the event of a power failure, inbound volume will be diverted to the Davis Street Transfer Station for outbound loading to the Altamont Landfill for disposal.
  - b. Volume: Excess inbound volume will be diverted to the Davis St. Transfer Station for outbound loading to the Altamont Landfill for disposal in the event of inbound volume in excess of peak capacity.
  - c. Mechanical Failure: In the event of more than a short-term mechanical failure, inbound volume will be diverted to the Davis St. Transfer Station for outbound loading to the Altamont Landfill for disposal in the event of a mechanical failure.

**Sections 17863.4 (c) and 17896.31(c) OIMP Revisions**

The odor impact minimization plan shall be revised to reflect any changes, and a copy shall be provided to the EA, within 30 days of those changes.

**Sections 17863.4 (d) 17896.31(d) OIMP Revisions**

The odor impact minimization plan shall be reviewed annually by the operator to determine if any revisions are necessary.