January 10, 2017

Daryl Smith, General Manager
West Contra Costa Sanitary Landfill Organic Materials Processing Facility
P.O. Box 4100
Richmond, CA 94804

RE: West Contra Costa Sanitary Landfill Organic Materials Processing Facility
    1 Parr Blvd., Richmond
    SWIS No. 07-AA-0044
    Management Practices and Associated Documents

Dear Mr. Smith:

In response to hundreds of widespread nuisance odor complaints and numerous combustion events (e.g., fires, smoldering, detectable smoke), the Local Enforcement Agency (LEA) reviewed the Organic Materials Processing Facility’s (OMPF) operation and associated documents, including the (1) solid waste permit and (2) the Report of Facility Information (RFI), which includes the Odor Impact Minimization Plan (OIMP). An extensive research of composting literature was also done.

Based on this review and research, as well as numerous onsite inspections, the LEA identified issues that need to be satisfactorily addressed by a compost facility in its operating documents (e.g., RFI/OIMP). Attached is a summary of these issues in a checklist format. This checklist is based on a hazard analysis that follows the movement and handling of feedstock material from its source to its final destination, including all intervening steps, with the intent of identifying issues that must be addressed in order to prevent problems (see flow chart in Appendix 1 of the checklist). If a compost operation has additional steps or details not described in the checklist, these should also be mentioned in the facility’s operating documents, taking into account all relevant considerations. Other pertinent issues that arise should be addressed accordingly.

Some items in the checklist apply to more than one step. Due to extensive operational problems at this facility, the LEA believes it is important to comprehensively deal with each step in the process separately; hence, the repetitiveness of many items. An operating document may address an issue that applies to multiple steps separately for each step or more comprehensively, so long as the expectations and applicability are clearly described. The scope of this checklist extends somewhat beyond what an LEA would normally comment on, but the Contra Costa County LEA is part of the Environmental Health Division, which has broad responsibilities for protecting public health and the environment.
To ensure the public that meaningful actions are being taken to prevent further nuisance odors or combustion events (or other problems), it is important that the items described in the checklist be addressed in the RFI/OIMP and/or other appropriate documents so that expectations regarding the operation are clear to all parties: facility operator and its employees and contractors, regulators, governing bodies, and the surrounding community. It is important that the RFI/OIMP provide unambiguous detail regarding the operation so as to ensure compliance with the State solid waste standards. The fundamental objective is to protect public health and the environment, as well as prevent nuisances or other negative impacts that may affect the quality of life for the surrounding community, which could include residences, businesses, recreational areas, schools, etc.

The recent nuisance odor problems related to the OMPF caused significant and pervasive distress in the surrounding communities for several months, and it is critical that effective operational improvements prevent a recurrence of nuisance odors and combustion events, as well as other deleterious impacts. Such improvements need to be memorialized in the facility’s operating documents. The LEA hopes that the OMPF operator, Republic Services, shares this goal.

Deleterious impacts that can result from operational deficiencies at a compost facility include the aforementioned nuisance odors and combustion events, but also dust, noise, vectors, air and water pollution. The recent inspections by the LEA have also raised concerns regarding the collection and disposal of compost leachate at the OMPF. The operator should also realize that if the feedstock is not processed into a useful final product, or if there is an insufficient market for the amount of finished product produced, this could result in problems at either the compost facility or an offsite location where the material ends up, perhaps far from its own nearby community.

The LEA does not typically regulate the collection and transport of feedstock to a solid waste facility, or the delivery of finished compost to a customer, but these steps can result in hazards or nuisances if not properly addressed. The operator is encouraged to have procedures in place that adequately deal with these offsite steps, where applicable.

Review your current operating documents and submit the following information to the LEA by February 1, 2017:

1. Those items in the checklist that are addressed in the current RFI/OIMP and/or other acceptable documents, including details on how these are addressed.

2. Those issues that are not addressed in the RFI/OIMP or are inadequately addressed, and proposed language to correct these deficiencies. This should include recently adopted practices that were implemented to improve the operation.
An application for an RFI/OIMP revision may accompany this information (e.g., an RFI/OIMP amendment). Please be aware that the LEA can require changes to the RFI/OIMP via a formal Notice & Order. For non-routine services, LEA staff time is billed at an hourly rate, which is currently $174/hour. These costs are in addition to any enforcement penalties or other cost recovery.

The LEA has identified changes that also need to be made to the solid waste permit and will forward information regarding this at a later date.

If you should have any questions, please do not hesitate to call me at (925) 692-2535.

Sincerely,

Joseph G. Doser, REHS
Supervising Environmental Health Specialist

cc: Supervisor John Gioia
    Marilyn Underwood, Contra Costa Environmental Health
    Agnes Vinluan, Contra Costa Environmental Health
    Adam Lenz, City of Richmond
    Beatrice Poroli, CalRecycle
    Ron Pilkington, Bay Area Air Quality Management District
    Cleet Carlton, Regional Water Quality Control Board — San Francisco Bay Area Region
COMPOST REVIEW CHECKLIST
(Provided to the WCCSL OMPF with January 10, 2017 letter)

COLLECTION (The Source of Feedstock)

☐ What is the collection frequency of the compost feedstock(s)?

☐ Are there any feedstock sources that are not collected at least once per week?

☐ Are there any feedstock sources that might arrive already having undergone significant anaerobic decomposition?

☐ Are any source-separated food wastes collected?
  - What types and amounts of food wastes will be collected (e.g., meat, produce, residential, retail, institutional, wholesale)?
  - What are the anticipated future increases in food waste material?

Note: The operator should consider how food waste materials are ultimately incorporated into the windrows or ASPs to ensure acceptable bulk density, porosity, moisture content, aerobic conditions, odor control, and an acceptable final product. This also applies to other problematic feedstock material (e.g., large amounts of grass clippings).

☐ Are there any pre-collection activities by the source that could affect bulk density, porosity, or moisture content (e.g., compaction, mechanical size reduction, drying, wetting, etc.)? If yes, describe the protocols to deal with this.

☐ Are there any collection activities that could affect bulk density or porosity (e.g., compaction by collection vehicle)? If yes, describe the protocols to deal with this.

☐ Do the drivers perform an initial check for contamination (e.g., plastic) or other conditions (e.g., excess moisture) that should be communicated to the operator upon delivery to the compost facility? If yes, describe these protocols.

☐ Are there protocols to reject contaminated loads at the point of collection? If yes, describe these protocols.

☐ Are there protocols to follow-up with the customer if unacceptable feedstocks are found? If yes, describe these protocols.

☐ What is the cleaning frequency for containers (residential and commercial)?

☐ Are waste containers marked as per CCR, Title 14, Section 17316? Specifically, containers of one cubic-yard or more owned by the collection service company must be marked with the company’s name and telephone number.
Is there any ongoing public or customer outreach intended to help maintain an acceptable quality of feedstock? If yes, describe this outreach.

Are collection workers trained on the above issues? If yes, describe this training program.

**TRANSPORT TO COMPOST FACILITY (Collection Vehicles)**

Do the operator and/or other responsible parties have odor control protocols for the collection vehicles? If yes, describe these protocols.

Are waste collection vehicles marked as per CCR, Title 14, Section 17344? Specifically, collection vehicles must be marked with the name of the company operating the vehicle.

**RECEIVING (Arrival at the Compost Facility)**

Are there protocols for an initial inspection upon receipt (e.g., nuisance odors, contaminants, particle size and shape, problematic material types, excess moisture)? If yes, describe these protocols. Include any protocols related to materials not collected at least once per week and which may have undergone pre-collection anaerobic decomposition.

Are there protocols to reject contaminated loads or otherwise unacceptable feedstock? If yes, describe these protocols. Include any protocols used to verify and record contaminant levels (e.g., testing method(s), record keeping, etc.).

Where are unacceptable loads placed and what will happen to them?

Are there protocols to keep track of the amounts and types of feedstock received (e.g., self-haul; curbside collected; source-separated materials; landscaping waste; food waste; biosolids; problematic particle sizes, shapes, and bulk density; materials whose decomposition rate or differential compaction may complicate the compost process; excessively wet, dry, or dense materials; materials whose decomposition byproducts may be problematic)? If yes, describe these protocols.

Are there protocols on how to keep track of the various types and amounts of feedstock received so as to maintain proper controls later on in the composting process (e.g., the “right” blend(s) in the windrows or ASPs)? If yes, describe these protocols. For example, the operator should consider how food waste materials are ultimately incorporated into the windrows or ASPs to ensure acceptable bulk density, aerobic conditions (including no preferential pathways for oxygen movement), odor control, and an acceptable final product.

Are there seasonal variations (e.g., ambient temperature, large amounts of lawn clippings) that may influence pre-collection anaerobic decomposition or the composting process? If yes, describe the protocols to deal with this.
Are there seasonal or geographic variations in the types and amounts of materials collected? If yes, describe the protocols to deal with this.

Where on the site does this step occur (i.e., clearly described boundaries and a means to readily verify these boundaries, such as permanent markers or other suitable reference points)?

Is there a designated material footprint within the boundary for this step? If yes, describe.

What is the maximum daily tonnage or volume allowed? Include any breakdown by type of material. Also include the method used to determine the amount of material received and how this is tracked and recorded.

What is the maximum amount of material kept at any one time at this step? Include any breakdown by type of material. Also include the method used to determine the amounts of materials kept at this step and how this is tracked and recorded.

What is the maximum “storage” time allowed at this step? If different materials have different times, describe accordingly. Include the method used to determine how long material is kept at this step and how this is tracked and recorded.

What are the protocols if daily tonnage received, amount kept at this step, or storage time(s) at this step are exceeded?

What are the protocols at this step to prevent nuisance odors, dust, noise, and vectors, including the actions to take if these issues occur? Include any references to the Odor Impact Management Plan (OIMP).

What are the protocols at this step to prevent fires, including the actions to take if a fire, smoke, or elevated temperatures occur? Include a maximum temperature that triggers corrective action(s) and any criteria related to maximum allowable pile sizes (dimensions).

Does this step occur inside or outside or a combination of both?

What is the surface covering of this area (e.g., dirt, gravel, asphalt, concrete)?

What is the means to collect and remove rainwater, runoff, and leachate from this area and where do these drain to?

Is there any onsite treatment or storage of runoff or leachate? If yes, describe these protocols.

If this area is subject to ponding or mud, what are the protocols to deal with this (particularly if it interferes with or halts this step)?

What type of equipment is used at this step and what are the protocols if this becomes inoperative?

Are workers trained on the above issues? If yes, describe this training program.
PROCESSING (Prior to Placement in Windrows or ASPs or Otherwise Used)

☐ Are there protocols for additional inspection at this step (e.g., odor, contaminants, particle size and shape, excess moisture, etc.)? If yes, describe these protocols.

☐ Are there protocols to deal with any contaminated or otherwise unsuitable feedstock found at this step? If yes, describe these protocols.

☐ Where on the site does this step occur (i.e., clearly described boundaries and a means to readily verify these boundaries, such as permanent markers or reference points)?

☐ Is there a designated material footprint within the boundary for this step? If yes, describe.

☐ What is the maximum amount of material kept at any one time at this step? Include any breakdown by type of material. Also include the method used to determine the amounts of materials kept at this step and how this is tracked and recorded.

☐ What is the maximum "storage" time allowed at this step? If different materials have different times, describe accordingly. Include the method used to determine how long material is kept at this step and how this is tracked and recorded.

☐ What are the protocols if the amount kept at this step or storage time(s) at this step are exceeded?

☐ What are the protocols at this step to prevent nuisance odors, dust, noise, and vectors, including the actions to take if these issues occur? Include any references to the OIMP.

☐ What are the protocols at this step to prevent fires, including the actions to take if a fire, smoke, or elevated temperatures occur? Include a maximum temperature that triggers a corrective action and any criteria related to maximum allowable pile sizes (dimensions).

☐ Does any blending or mixing of different types of materials occur at this step? If yes, describe these protocols.

☐ Does this step occur inside, outside, or a combination of both?

☐ What is the surface covering of this area (e.g., dirt, gravel, asphalt, concrete)?

☐ What is the means to collect and remove rainwater, runoff, and leachate from this area, and where do these drain to?

☐ Is there any onsite treatment or storage of runoff or leachate? If yes, describe these protocols.

☐ What are the protocols at this step to prevent nuisance odors, dust, noise, and vectors, including the actions to take if these issues occur? Include any references to the OIMP.

☐ If this area is subject to ponding or mud, what are the protocols to deal with this (particularly if it interferes with or halts operations at this step)?

☐ What type of equipment is used at this step and what are the protocols if it becomes inoperative?
What type(s) of processing occur(s) (chipping, mechanical screening, manual screening, addition or removal of moisture, etc.)

Are any amendments or bulking agents added or otherwise used? If yes, describe.

Are workers trained on the above issues? If yes, describe this training program.

**WINDROWS OR AERATED STAIC PILES (ASP) (The Actual Composting Step)**

Are there protocols for additional inspection at this step (e.g., odor, contaminants, particle size and shape, excess moisture, etc.)? If yes, describe these protocols.

Are there protocols to deal with any contaminated or otherwise unsuitable feedstock found at this step? If yes, describe these protocols.

Where on the site does this step occur (i.e., clearly described boundaries and a means to readily verify these boundaries, such as permanent markers or reference points)?

Is there a designated material footprint within the boundary for this step? If yes, describe.

What is the maximum amount of material kept at any one time at this step? Include any breakdown by type of material. Also include the method used to determine the amounts of materials kept at this step and how this is tracked and recorded.

What is the maximum “storage” time allowed at this step? If different materials have different times, describe accordingly. Include the method used to determine how long material is kept at this step and how this is tracked and recorded.

What are the protocols if the amount kept at this step or storage time(s) at this step are exceeded?

What are the protocols at this step to prevent nuisance odors, dust, noise, and vectors, including the actions to take if these issues occur? Include any references to the OIMP.

What are the protocols at this step to prevent fires, including the actions to take if a fire, smoke, or elevated temperatures occur? Include a maximum temperature that triggers corrective action(s) and any criteria related to maximum allowable pile sizes (dimensions).

What are the temperature monitoring protocols, including the following?
- Locations that provide a representative monitoring
- Depth(s) of measurements
- Type of equipment used and calibration
- Record keeping
- Actions if temperatures are found outside acceptable range

Does any blending or mixing of different types of materials occur at this step? If yes, describe these protocols.

Are any amendments or bulking agents added or otherwise used? If yes, describe.
Are there any protocols related to ultimate nutrient content? If yes, describe.

Does this step occur inside or outside or combination of both?

What is the surface covering of this area (e.g., dirt, gravel, asphalt, concrete)?

What is the means to collect and remove rainwater, runoff, and leachate, and where do these drain to?

Is there any onsite treatment or storage of runoff or leachate? If yes, describe these protocols.

If the area is subject to ponding or mud, what are the protocols to deal with this (particularly if it interferes with or halts operations)?

What type of equipment is used at this step and what are the protocols if it becomes inoperative?

What are the minimum pile dimensions (base width, height, and length) to maintain minimum temperature? Include other dimensions if necessary for the volume calculations (e.g., top width if a trapezoidal prism formula is used). Include any variations that would be based on the feedstock (e.g., seasonal, source, type), bulk density, or other conditions.

What are the maximum pile dimensions (base, height, and length) to ensure aerobic conditions, good oxygen flow, and prevent excessively high temperatures or self-ignition? Include other dimensions if necessary for the volume calculations (e.g., top width if a trapezoidal prism formula is used). Include any variations that would be based on the feedstock (e.g., seasonal, source, type), bulk density, or other conditions.

Are windrow and ASP geometry schematics included in the RFI? If yes, provide these.

What is the formula used for calculating windrow and ASP amounts and/or volume(s)?

What is the windrow turning frequency?

Does turning take into consideration meteorological conditions, weekends, or holidays?

Are there any protocols to ensure a homogenized final product? If yes, describe.

What is the method of turning windrows, including the equipment used?

How will excessive compaction of windrows and ASPs be prevented? If any type of equipment is prohibited (e.g., bulldozer), include this information.

What time and temperature protocols that will be used? Include any variations based on the type of feedstock placed into the windrows or ASPs.

What is the acceptable range for particle size, bulk density, oxygen content, carbon/nitrogen ratio, pH, temperature, holding times, and moisture content? Include testing protocols. Also include the protocols if any factors are found outside the acceptable range.

Are there protocols for the mixing of food waste and other compostable materials? If yes, describe.
Are there protocols if improper feedstock mixture is found? If yes, describe these protocols.

What is the airflow rate for the ASPs? Include the method of monitoring this. Also include the protocols if the airflow is found outside the acceptable range.

Are there pile aeration cycles for the ASPs? If yes, describe.

Are the ASPs positive airflow or negative pressure airflow?

If the ASPs are negative pressure, are there protocols to protect blower equipment from compost gasses and treat the removed air for odors? If yes, describe these protocols.

What biofilter material(s) will be used for the ASP and windrows? If yes, describe.

Are there protocols to ensure sufficient air flow that is evenly distributed and prevent preferential pathways for oxygen movement? If yes, describe these protocols.

Are the windrows and ASPs in-vessel or exposed to the atmosphere? If in-vessel is used, provide containment specifications.

Is any tarping proposed, including seasonally? If yes, describe.

Are there protocols to add or remove moisture from windrows or ASPs? If yes, describe these protocols.

Are workers trained on the above issues? If yes, describe this training program.

CURING PILES

What is the definition of “curing pile” or “curing compost”?

Are there criteria used to determine if material is ready to be placed in a curing pile? If yes, describe.

Are there protocols for additional inspection at this step (e.g., odor, contaminants, particle size and shape, excess moisture, etc.)? If yes, describe these protocols.

Are there protocols to deal with any contaminated or otherwise unsuitable feedstock found at this step? If yes, describe these protocols.

Where on the site does the processing step occur (i.e., clearly described boundaries and a means to readily verify these boundaries, such as permanent markers or reference points)?

Is there a designated material footprint within the boundary for this step? If yes, describe.

What is the maximum amount of material kept at any one time at this step? Include any breakdown by type of material. Also include the method used to determine the amounts of materials kept at this step and how this is tracked and recorded.
□ What is the maximum “storage” time allowed at this step? If different materials have different times, describe accordingly. Include the method used to determine how long material is kept at this step and how this is tracked and recorded.

□ What are the protocols if the amount kept at this step or storage time(s) at this step are exceeded?

□ What are the protocols at this step to prevent nuisance odors, dust, noise, and vectors, including the actions to take if these issues occur? Include any references to the OIMP.

□ What are the protocols at this step to prevent fires, including the actions to take if a fire, smoke, or elevated temperatures occur? Include a maximum temperature that triggers corrective action(s) and any criteria related to maximum allowable pile sizes (dimensions).

□ What are the temperature monitoring protocols, including the following?
   • Locations that provide a representative monitoring
   • Depth(s) of measurements
   • Type of equipment used and calibration
   • Record keeping
   • Actions if temperatures are found outside acceptable range

□ Does any blending or mixing of different types of materials occur at this step? If yes, describe these protocols.

□ Does this step occur inside, outside, or a combination of both?

□ What is the surface covering of this area (e.g., dirt, gravel, asphalt, concrete)?

□ What is the means to collect and remove rainwater, runoff, and leachate, and where do these drain to?

□ Is there any onsite treatment or storage of runoff or leachate? If yes, describe these protocols.

□ If the area is subject to ponding or mud, what are the protocols to deal with this (particularly if it interferes with or halts operations at this step)?

□ What type of equipment is used at this step and what are the protocols if it becomes inoperative?

□ What are the minimum pile dimensions (base width, height, and length) to maintain minimum temperature? Include other dimensions if necessary for the volume calculations (e.g., top width if a trapezoidal prism formula is used). Include any variations that would be based on the feedstock (e.g., seasonal, source, type) or bulk density.

□ What are the maximum pile dimensions (base, height, and length) to ensure aerobic conditions and prevent excessively high temperatures or self-ignition? Include other dimensions if necessary for the volume calculations (e.g., top width if a trapezoidal prism formula is used). Include any variations that would be based on the feedstock (e.g., seasonal, source, type) or bulk density.

□ Are geometry schematics included in the RFI? If yes, provide these.
What is the formula used for calculating volume?

What is the turning frequency of the curing compost piles?

What is the method of turning (e.g., equipment)?

How will excessive compaction of curing compost piles be prevented? If any type of equipment is prohibited (e.g., bulldozer), include this information.

What time and temperature protocols that will be used? Include any variations based on the type of feedstock placed into the curing compost piles.

Are there any minimum temperature and/or hold times and protocols if these aren’t met? If yes, describe.

Will a biofilter material be used? If yes, describe.

Is any tarping proposed, including seasonally? If yes, describe.

Are there any protocols to reintroduce material to the compost process if it is found that material at this step has not been sufficiently composted (e.g. excess temperatures)?

Are workers trained on the above issues? If yes, describe this training program.

FINISHED COMPOST

What is the definition of “finished compost” used by the facility? Include any maturity standard that is used (e.g., Solvita).

What criteria are used to determine if material is ready to be placed in a finish compost pile?

Are there protocols for additional inspection at this step (e.g., odor, contaminants, particle size and shape, excess moisture, etc.)? If yes, describe these protocols.

Are there protocols to deal with any contaminated or otherwise unsuitable feedstock found at this step? If yes, describe these protocols.

Where on the site does this step occur (i.e., clearly described boundaries and a means to readily verify these boundaries, such as permanent markers or reference points)?

Is there a designated material footprint within the boundary for this step? If yes, describe.

What is the maximum amount of material kept at any one time at this step? Include any breakdown by type of material. Also include the method used to determine the amounts of materials kept at this step and how this is tracked and recorded.

What is the maximum “storage” time allowed at this step? If different materials have different times, describe accordingly. Include the method used to determine how long material is kept at this step and how this is tracked and recorded.
What are the protocols if the amount kept at this step or storage time(s) at this step are exceeded?

What are the protocols at this step to prevent nuisance odors, dust, noise, and vectors, including the actions to take if these issues occur? Include any references to the OIMP.

What are the protocols at this step to prevent fires, including the actions to take if a fire, smoke, or elevated temperatures occur? Include a maximum temperature that triggers corrective action(s) and any criteria related to maximum allowable pile sizes (dimensions).

What are the temperature monitoring protocols, including the following?
- Locations that provide a representative monitoring
- Depth(s) of measurements
- Type of equipment used and calibration
- Record keeping
- Actions if temperatures are found outside acceptable range

Does any blending or mixing of different types of materials occur at this step? If yes, describe these protocols.

Does this step occur inside or outside?

What is the surface covering of this area (e.g., dirt, gravel, asphalt, concrete)?

What is the means to collect and remove rainwater, runoff, and leachate, and where do these drain to?

Is there any onsite treatment or storage of runoff or leachate? If yes, describe these protocols.

If the area is subject to ponding or mud, what are the protocols to deal with this (particularly if it interferes with or halts operations at this step)?

What type of equipment is used at this step and what are the protocols if it becomes inoperative?

What are the minimum pile dimensions (base width, height, and length) to maintain minimum temperature? Include other dimensions if necessary for the volume calculations (e.g., top width if a trapezoidal prism formula is used). Include any variations that would be based on type of feedstock (e.g., seasonal, source) or bulk density.

What are the maximum pile dimensions (base, height, and length) to ensure aerobic conditions and prevent excessively high temperatures or self-ignition? Include other dimensions if necessary for the volume calculations (e.g., top width if a trapezoidal prism formula is used). Include any variations that would be based on type of feedstock (e.g., seasonal, source) or bulk density.

Are geometry schematics included in the RFI? If yes, provide these.

What is the formula used for calculating volume?

Will a biofilter material will be used? If yes, describe.
□ Is any tarping proposed, including seasonally?  If yes, describe.

□ What protocols are used to perform laboratory testing for heavy metals and pathogen reduction?

□ Are there any protocols to reintroduce material to the compost process if is found that material at this step has not been sufficiently composted (e.g. excess temperatures)?

□ Are workers trained on the above issues?  If yes, describe this training program.

**FINAL PROCESSING AND OVERS**

□ What is the definition of “overs”?

□ What happens to the overs (e.g., where are they kept on site, for how long, where do they do)?

□ What protocols are used to for final processing?

□ What criteria are used to determine if material is ready for final processing?

□ Are there protocols for additional inspection at this step (e.g., odor, contaminants, particle size and shape, excess moisture, etc.)?  If yes, describe these protocols.

□ Are there protocols to deal with any contaminated or otherwise unsuitable feedstock found at this step?  If yes, describe these protocols.

□ Where on the site does this step occur (i.e., clearly described boundaries and a means to readily verify these boundaries, such as permanent markers or reference points)?

□ Is there a designated material footprint within the boundary for this step?  If yes, describe.

□ What is the maximum amounts of material allowed at any one time at this step?

□ What is the maximum “storage” time allowed at this step?  If different materials have different storage times, describe.  Also include how the age of compost piles are tracked and recorded.

□ What are the protocols at this step to prevent nuisance odors, dust, noise, and vectors, including the actions to take if these issues occur?  Include any references to the OIMP.

□ What are the protocols at this step to prevent fires, including the actions to take if a fire, smoke, or elevated temperatures occur?  Include a maximum temperature that triggers corrective action(s) and any criteria related to maximum allowable pile sizes (dimensions).

□ What are the temperature monitoring protocols, including the following?
  • Locations that provide a representative monitoring
  • Depth(s) of measurements
  • Type of equipment used and calibration
  • Record keeping
• Actions if temperatures are found outside acceptable range

☐ Does any blending or mixing of different types of materials occur at this step? If yes, describe these protocols.

☐ Does this step occur inside or outside?

☐ What is the surface covering of this area (e.g., dirt, gravel, asphalt, concrete)?

☐ What is the means to collect and remove rainwater, runoff, and leachate from this area, and where do these drain to?

☐ Is there any onsite treatment or storage of runoff or leachate? If yes, describe these protocols.

☐ If the area is subject to ponding or mud, what are the protocols to deal with this (particularly if it interferes with or halts operations at this step)?

☐ What type of equipment is used at this step and what are the protocols if it becomes inoperative?

☐ What are the minimum pile dimensions (base width, height, and length) to maintain minimum temperature? Include other dimensions if necessary for the volume calculations (e.g., top width if a trapezoidal prism formula is used). Include any variations that would be based on type of feedstock (e.g., seasonal, source) or bulk density.

☐ What are the maximum pile dimensions (base, height, and length) to ensure aerobic conditions and prevent excessively high temperatures or self-ignition? Include other dimensions if necessary for the volume calculations (e.g., top width if a trapezoidal prism formula is used). Include any variations that would be based on type of feedstock (e.g., seasonal, source) or bulk density.

☐ Are geometry schematics included in the RFI? If yes, provide these.

☐ What is the formula used for calculating volume?

☐ Are there any protocols to reintroduce material to the compost process if it is found that material at this step has not been sufficiently composted (e.g., excess temperatures)?

☐ Are workers trained on the above issues? If yes, describe this training program.

**DELIVERY/FINAL DESTINATION**

☐ What are the protocols to make sure compost does not leave site until acceptable laboratory results are verified?

☐ What test protocols are used for testing for pathogen reduction and heavy metals (e.g., collection method, assuring representative samples, storage, transport)?

☐ Are there protocols for sampling non-homogeneous vs. homogeneous piles? If yes, describe.

☐ How are loads tracked?
☐ How are complaints about delivered material handled?

☐ What types of non-compost material might be removed from this facility and where do these go (e.g., residual waste, ADC, biomass, etc.)?

☐ Are any types of material with possible nuisance odor potential removed? If yes, describe the handling and destination of these materials.

OTHER

☐ Are there any sensitive water resources that could be impacted (e.g., creeks, bays, wetlands, and groundwater)?

☐ Will any supplemental odor control methods will be used (e.g., odor neutralizer agents, misters, water trucks, etc.)? If yes, describe.

☐ What are the meteorological conditions specific to the site, including seasonal variations?

☐ What type of meteorological monitoring will be done? Include the location, factors measured, and record keeping, as well as any operational changes that will be made contingent on any weather conditions.

☐ What form(s) or other means will be used for record keeping purposes?

☐ Are there requirements of other regulatory agencies that may impact the issues described in this checklist or possibly conflict with one another? If yes, describe.

☐ Is there a means to verify the amount of material needed by end users matchings the amount of material brought in as feedstock? If yes, describe.

☐ Is an OIMP included?

☐ Are there any pre-established protocols that would trigger a voluntarily odor feasibility study? If yes, describe.

☐ Is there an overall fire prevention and response plan? The plan should also include protocols to maintain equipment to prevent fires (e.g., cleaning equipment of combustible material on a regular basis). If yes, describe these protocols.

☐ Is there an overall means to track each type of pile, windrow, or ASP as to its type (e.g., windrow, ASP, curing compost, finished product, etc.), age, and amount? If yes, describe these protocols.

☐ Is any of the received material used onsite? If yes, describe.

☐ Are there methods used to prevent cross-contamination (i.e., non pathogen-reduced material contacting pathogen reduced material)? If yes, describe.

☐ What is the orientation of any windrows or ASPs in relation to the site slope (i.e., surface drainage should flow between rows, not through them)? Provide schematic.
☐ Is there any variability of the above protocols based on feedstock or other conditions? If yes, describe.

☐ Do you have worker safety protocols (e.g., protections against “brown lung”, sharps, mechanical injury, etc.)? If yes, describe.

☐ Are there protocols to deal with excess moisture in a pile or windrow, including that from precipitation? If yes describe.

☐ Is there an overall program to (1) reduce contaminants in the feedstock and finished product and (2) remove recyclable materials such as metals (e.g., load checks, magnetic separation, eddy current separation, wet separation, ballistic separation, air classification, etc.)? If yes, describe.

☐ Does the OIMP include details related to any onsite leachate collection or treatment facilities that might produce odors (e.g., treatment or storage ponds)? If yes, describe.

☐ Is all equipment used at the facility described?

☐ Does the facility have any protocols associated with green materials and pest quarantines? If yes, describe.

☐ Does the facility have protocols to keep hazardous materials out of the feedstock? If yes, describe.
APPENDIX 1 – FLOW CHART

Curbside → Transport to Facility → Receipt at Facility → Initial Processing

Load for Transport ← Finished Compost ← Curing Piles ← Windrows

Final Destination
APPENDIX 2 – SAMPLE TABLE OF LIMITS AND RANGES

Material Amounts and Temperatures

<table>
<thead>
<tr>
<th>Step</th>
<th>Maximum daily amount allowed to come into this step (by type and total)</th>
<th>Maximum amount allowed at this step (at any one time)</th>
<th>Maximum time allowed for material to remain at this step</th>
<th>Acceptable temperature range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing - initial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windrows</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curing compost</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finished compost</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing - final</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ACCEPTABLE COMPOST PROCESS RANGES (1)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Acceptable range (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C:N ratio</td>
<td></td>
</tr>
<tr>
<td>Moisture content</td>
<td></td>
</tr>
<tr>
<td>Oxygen content</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>Temperature holding time(s)</td>
<td></td>
</tr>
<tr>
<td>Particle size</td>
<td></td>
</tr>
</tbody>
</table>

(1) If different feedstocks or “recipes” have different ranges, include separate chart for each.
(2) Describe the method and protocols for testing and recording these characteristics.