Compostable Materials Management Technical Assistance
Integrated Best Management Practices Development
California Integrated Waste Management Board
OCAP GUIDANCE DOCUMENT

PURPOSE OF THE OPERATIONAL CHALLENGES/CONCERNS ASSESSMENT PROCEDURE(OCAP):

The Operational Challenges/Concerns Assessment Procedure (OCAP) was developed to aid operators and regulators in defining operational areas where changes are required to minimize undesirable impacts on the surrounding area. The procedure guides participates to focus on operational practices that may affect the impact that initiated concerns. Although other regulatory concerns may exist, the OCAP addresses only those operational concerns related to the impact(s) to be minimized. Experience has shown that if the impacts are not minimized, the operation's continued existence is less likely.

SITE NAME AND ADDRESS:

FACILITY SWIS NUMBER:

FACILITY OWNER/OPERATOR:

SITE MANAGER (Person providing daily, on-going direction to site operations personnel):

PURPOSE OF ASSESSMENT:
A statement on the purpose of this particular assessment is an important initial communication between the regulator and the operator. Focusing on the specific impacts of concern yields a more efficient process. Consideration of the time and energy of the participants in this assessment significantly furthers the communication process. A concise statement relating the actual or potential impacts to the goals of current assessment addresses this consideration, and a "win-win" outcome is more likely.

Example: *This assessment of site operations is being requested as a result of several recent odor complaints received by the Enforcement Agency.*

Example: *Because the Enforcement Agency has documented several fires and sub-surface temperatures greater than 165ºF in piles heterogeneous material greater than 12 feet high, the Enforcement Agency requested this assessment of facility operations and site fire prevention measures. The local fire protection officials have been invited to participate in this assessment.*

Example: *This Enforcement Agency requests an assessment of site operations due to the accumulation of compostable and non-compostable materials onsite. These accumulations represent an increased threat of odor, fire, and vector harborage per determinations made by this Enforcement Agency.*

1. GENERAL OPERATION DESCRIPTION

Materials Onsite: Feedstocks/ Additives (added to active compost)/ Amendments (added to curing compost (note: Additives and amendments do not include septage, biosolids, or other compost feedstocks ????) (*list or attach)* -

Total Amounts:

Amounts Processed: (this is an estimate to understand the site and its operation, if there appears to be inconsistencies, check records, otherwise use the operator's estimates) -each day:
-each year: -

Total Amounts:

Source of Feedstocks/Materials Received (ex. Curbside, landscape, chicken farm, ag material): -

Total Amounts:

Materials Onsite: (Feedstocks and other materials processed)
The list exhibits the range of materials that may need specific handling procedures at different stages of the process (e.g., green succulent dense materials need immediate management. Descriptions that contain the type and source of the material are especially helpful, such as, *"two week collection cycle, curbside green material,"* or *"private hauler, landscraper-collected, yard trimmings,"* or *"morning-delivered, by end-dump, 95% moisture biosolids," or "unprocessed", grocery produce with associated packaging by walking-floor trailer."*

Facility Size:
The areas allocated to various stages of the composting facility (e.g.,. receiving and storage of feedstocks, additives/amendments, processing, curing, etc.) are important to evaluate for the efficient movement of materials on the site (e.g., excessive accumulations could indicate potential areas of concern). For example, overloading the receiving area (feedstock stockpiling) could result in odors, vectors, leachate, etc.

Operation Type (types overlap and exceptions are common, use your judgment based on observations and operator's information, such as *"static piles and windrow"*):
Windrow – piles, typically, hundreds of feet long, less than twenty feet wide, and twelve feet high, with relatively uniform geometry, regularly agitated ("turned"), usually "passively aerated," and with moisture added due to their high surface area to volume. This is by far the most common form of composting in California.
Static pile – large piles, typically, infrequently moved; sometimes aerated with forced air, positive or negative. As heterogeneous conditions develop, fires become more likely.
Dynamic pile – piles, usually large; moved ("rolled" or "turned") at a regular interval; usually employ "passive aeration"; may look like a windrow or static pile operation.
Within-vessel (in-vessel) – an enclosed processing step where inputs of air and water and emissions are controlled. The extent and types of controls employed are highly variable.

Which direction are the closest neighbors and distance from the site? (circle) N S E W
_____ ft / miles
Has the site experienced encroachment? (circle one) Yes No Wind Direction? (circle) N S E W _____

Are there other nearby sources of odors? (circle one) Yes No What are they?
_____ *ex. Dairy farm to north or site located on a landfill*
Weather Monitoring: _*ex. windsock*_____ Odor Controls:
_____
Site Supervision: Manager on Site (circle one) Yes No Trained Personnel: (circle one) Yes No

Closest neighbors; How close, in which direction? Receptors are necessary for defining impacts. The distribution of receptors and their relationship to surrounding land use is extremely important. The investigation/description of surrounding land uses may also assist in identifying other potential impact sources.

Is the operator communicating with neighbors? Where "encroachment" has occurred, the operator may be struggling with equity issues, but the right of a person to enjoy their property remains a powerful ally to encroachment.

Weather-related operational changes must be considered by some operations. If wind direction or meteorological conditions may cause off-site impacts, operations personnel should implement an operations adjustment. A typical protocol may include the following:

1. Stop all operations that will cause off-site impacts.
2. Determine if on-site management practices may remedy impacts and immediately take steps to address the situation.
3. Determine whether or not the impacts continue beyond the site by patrolling the site perimeter. Do not start operations again until the wind and meteorological conditions are favorable and will not promote off-site impacts.

Maintenance of operational areas for spreading and/or temporary storage may be necessary for some operations during adverse weather conditions.

2. OPERATION AREA

Is there sufficient area for unloading and stockpiling? Yes No
Is there sufficient area between and around existing piles? Yes No
If there were a fire would there be sufficient space to spread out piles? Yes No
Is there access to all parts of the facility? Yes No
Please explain any "no" response: _____

Each processing step requires the appropriate space. An "overloaded" area could result in impacts (odors, dust, vectors, leachate, fires, etc). As fires and resulting products of combustion may cause off-site impacts, temperatures of high-risk piles should be monitored daily. Ample areas for spreading and wetting of burning materials should be maintained adjacent to feedstock receipt and initial chipping/grinding areas.

3. OPERATIONAL CAPACITY (THRU-PUT):

Does material appear to be stockpiled for excessive amounts of time? Yes No
Does the facility appear to have insufficient equipment? Yes No
Please explain any "yes" response: _____

A facility should be able to competently verify daily and annual throughputs. Incoming volumes are indicative of processing capability and marketing capability.

4. MATERIAL HANDLING PROCESS (BY PROCESSING STEP)

(Evaluation of materials at the various steps of handling for adequate moisture, oxygen/airspace, available carbon, available nitrogen, …)

The concept is to divide a facility into its critical processing steps. Each processing step may have unique processing step. (Its not that the facility has an odor, rather various parts of the facility have an odor

Each area has the potential for impacts; the cumulative impacts cause the off-site impacts.

4A. FEEDSTOCK RECEIPT, STORAGE, PROCESSING AND EQUIPMENT

Does the Facility have a scale? Yes No Are all loads weighed? Yes No
Obvious odors from incoming material? Yes No
Level of contamination in incoming material? (approximate) _____
Types of Contaminants? _____
How are contaminants identified and removed?
_____
Condition of material? _____
Is material below temperature threshold (122 F) when received? Yes No Don't Know
Are some or all feedstocks stockpiled? Yes No Approx. Storage time? _____
Are there obvious odors from the material processing area? Yes No
Is the working surface in good condition? Yes No
Does all material get processed in one day? Yes No If not, average time before processing_____
Is the equipment is good working condition? Yes No Are there adequate staffing and equipment? Yes No
Is there redundant equipment? Yes No
List of Equipment: (*or attach the list*)_____
_____

The receipt of material is a critical control point. (e.g. bi-weekly collection may deliver odorous materials which, if not managed appropriately may lead to odors.)

In certain cases, immediate incorporation may be the only acceptable alternative.

Are adequate resources (people and equipment) dedicated to receipt?

4B. ADDITIVES AND/OR AMENDMENTS RECEIPT AND STORAGE

Is material below temperature threshold (122 F) when received? Yes No Don't Know
Are there bulking agents? Yes No Adequate bulking agent storage? Yes No
Types of bulking materials(*or attach list)*_____
_____

Bulking agents which have differential moisture contents and generate high temperatures may be a fire risk.

Is there an adequate source of bulking materials to handle the material which needs bulking. People and equipment? What is the condition of the working surface?

4C. COMPOSTING PROCESS DESCRIPTION (Pile formation and agitation)

How are piles formed? _____
What are the pile dimensions (height & geometry)? _____
How much material is on site? _____ Approx. time for the compost process? _____
Are there obvious odors from the windrows/piles? Yes No
Is there visible standing water? Yes No Are there visible ruts or damage due to over-watering? Yes No
Is there evidence of inefficient watering? Yes No What is the approx. % moisture in the piles? _____ %
How and when is moisture added? _____
Where is the water source? _____
Are piles consistently mixed? Yes No What is the mixing schedule? _____
What are the temperatures in the piles? _____ Any evidence of fires? Yes No
Do the temperature records show any problems? Yes No
Is the porosity (airflow) & oxygen adequate? Yes No Enough porosity (airflow)? Yes No
Do the piles have adequate agitation/turning/aeration? Yes No
What is the sampling method and frequency? _____ _____
Do the sampling records show excessive pathogens? Yes No Metals? Yes No

Redundant equipment
State/condition of equipment
What is the condition of the working surface?
Does all material get processed in one day?
Are some or all feedstocks stockpiled?
List of Equipment:

Adequate equipment and manpower is necessary to meet site processing requirements and scheduled maintenance of equipment. (e.g., in order to meet a 48 hour timeframe, a site may need a redundant grinder).

[How is the facility designed to work? How is it actually working?]

Is the facility operating as designed and described in the RCSI?

4. C. 1: Pile forming

4. C. 2. Pile management:
Inventory control
How much material is on site?
Available equipment
Is there standing water?
Is there evidence of over-watering/inefficient watering?

4. C. 2. a. Pile Size and geometry

Pile geometry affects porosity and the ability of the pile to maintain aerobic conditions. Pile geometry can also affect moisture management, aeration, temperature and other factors which govern the composting process.

4. C. 2. b. Moisture management:
Source of water
Method of application
How often is water added?
How is water added?
Where is the water source?

4. C. 2. c. Porosity

4. C. 2. d. Temperature

4. C. 2. e. Oxygen

4. C. 2. f. Agitation/Turning/Aeration

4. C. 3. Pile monitoring and controls:
Sampling?
History
Data
What's happening in real time (observations)
Pathogen records:
Metals limits
Temperature records?

In addition to regulatory compliance, process data can influence and describe composting conditions (tracking and adjusting process parameters), what measurements is the operator tracking?

4D CURING AND FINISHING and PRODUCT STORAGE AND TRANSPORT

Are the piles screened? Yes No How is product screened? _____
Are there obvious odors from screening operations? Yes No
What is the pile size and geometry? _____ Is it adequate? Yes No
What is the retention time? _____ How is maturity determined?
_____
How are contaminants handled? _____
Is finished compost stored separately from new incoming feedstocks? Yes No
Is the finished compost stockpiled? Yes No Approx. Total time from feedstock receipt to product
_____
Is the final product sampled? Yes No Do the sampling results show any problems? Yes No
When loading out the final product, is there off-site dust? Yes No Material Spillage? Yes No

4. D. 1. a. Forming
4. D. 1. b. Management:
Screening
Pile size and geometry
Retention Time

4. D. 1. c. Monitoring
Maturity determination

It is important to avoid cross-contamination of "new" materials (feedstocks) with "post-pathogen reduction" material. It is important not to cross-contaminate the curing pile.

Curing is essential to avoiding odor and dust generation. Too big a curing pile can catch fire.

4. D. 2. PRODUCT STORAGE AND TRANSPORT

Product sampling should be done at this point to ensure that material meets regulatory and market criteria.

4. D. 2. a. Volume

4. D. 2. b. Final Sampling

4. D. 2. c. Loadout issues
Off-site dust
Proper housekeeping at this stage avoids tracking material off site.
Material spillage

OTHER CONSIDERATIONS:

TRAINING -

Are the employees trained in their job?
Are they cross-trained for other site tasks?
Do they know how to take a representative sample

Proper training, sampling, records, tonnages, are necessary for proper process evaluation and optimization

SITE OBSERVATIONS:

RECOMMENDATIONS:

PERMIT STATUS AND CONDITIONING DOCUMENTS**:**

A. Permit Status and Conditioning Documents. (OIMP?, RCSI?, JTD? …)

Access to relevant documents
Volume Limitations?
Composting System:
Processing requirements
Monitoring requirements
Site Specific requirements