COMPOSTABLE MATERIALS, ODORS, & COMPLIANCE

CalRecycle
Dana Hachigian & Carley Bartlett
Senate Bill 1383

- State wide effort to reduce green house gas emissions
  - CalRecycle focused on methane

- With respect to CalRecycle
  - 50% reduction in statewide level disposal of organic waste from 2014 levels by 2020
  - 75% reduction by 2025

- 2014 Waste Characterization study
  - Organic material ~40%
    - ~25% food waste

- More material>> More infrastructure
Topics

- History of Jurisdiction
- Common Odor Sources
- How do we Regulate?
- Inspections & Complaint Investigation
- Role of Enforcement
- Commonly Observed BMPs
CalRecycle and LEA’s Jurisdiction

- **California Health and Safety Code Section:**
  - Division 26. AIR RESOURCES PART 4. NONVEHICULAR AIR POLLUTION CONTROL
  - CHAPTER 3. Emission Limitations ARTICLE 1. General Limitations Section 41705
    - “If a district receives a complaint pertaining to an odor emanating from a compost operation exempt from Section 41700 pursuant to paragraph (2) or (3) or subdivision (a), that is subject to the jurisdiction of an enforcement agency under Division 30 of the Public Resources Code, the district shall, within 24 hours or by the next working day, refer the complaint to the enforcement agency.”

- **California Public Resources Code Sections:**
  - 43209.1
    - “(a) Notwithstanding any other provisions of law, if an enforcement agency receives a complaint, pursuant to subdivision (b) of Section 41705 of the Health and Safety Code, from an air pollution control district or an air quality management district pertaining to an odor emanating from a compost facility under its jurisdiction, the enforcement agency shall, in consultation with the district, take appropriate enforcement actions pursuant to this part.”
WHAT ARE COMMON ON SITE ODOR SOURCES?
Feedstock
Drainage/Ponding
Anaerobic Conditions
CalRecycle and Local Enforcement Agencies Oversight

Minimize odors to prevent complaints and nuisance

- Permit
- Odor Impact Minimization Plan
- Inspections
  - Routine - Monthly/Quarterly
  - Focused Inspections – complaint response
- Enforcement
  - Area of Concern
  - Violation
**Title 14 CCR 17863.4 – Odor Impact Minimization Plan (OIMP)**

<table>
<thead>
<tr>
<th>ALL compostable material handling operations and facilities shall prepare, implement and maintain a site specific OIMP.</th>
<th>Exempt due to Excluded Activities (Title 14 CCR 17855)</th>
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</thead>
<tbody>
<tr>
<td>• Composting Facilities</td>
<td>• Agricultural material that doesn’t leave the site</td>
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<td>• Green material composting operations and facilities</td>
<td>• Vermicomposting</td>
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<td>• Vegetative food material composting facilities</td>
<td>• Mushroom farming</td>
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<td>• Research composting operations</td>
<td>• IF total amount of feedstock and compost on-site at any one time does not exceed 100 cubic yards and 750 square feet</td>
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<td>• Chipping and grinding operations and facilities</td>
<td>• Activity is located on facility that has tiered or full permit</td>
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<td>• Bio-solids composting operations at POTWs (Publicly Owned Treatment Works)</td>
<td>*See Regulation, Title 14 CCR 17855 for complete list</td>
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<tr>
<td>• All in-vessel digestion operations and facilities</td>
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</table>
Title 14 CCR 17863.4 – Odor Impact Minimization Plan

- Provides guidance for on-site operations
  - Odor monitoring and data collection protocol for on-site odor sources
  - Describes the proximity of possible odor receptors and a method for accessing odor impacts
  - Meteorological conditions effecting migration
  - A complaint response and recordkeeping protocol
  - Descriptions of design considerations of optimal operation to minimize odors
  - Descriptions of operating procedures for minimizing odor

- Revised to reflect any changes and shall be provided to the EA within 30 days of those changes

- Reviewed annually by the operator to determine if revisions are necessary
Keys to an OIMP

- Operational Best Management Practices (BMPs)
  - *Time to process feedstock*
  - *Type of Feedstock*
  - *Amount of Material*
  - *Porosity of Material*
  - *Maintenance*
    - Water control
    - Proper aeration
  - *Turning piles*
    - Avoid windy conditions
    - During cooler times of the day

- Odor Control Measures BMPs
  - *Misters/Adding deodorant*
  - *Aeration*
  - *Biofiltration*
  - *Covering*
    - Biocap
    - Blankets/covers
  - *Enclosures*
    - Negative pressure buildings
    - Contained bays
Evaluating Sites for Odor Compliance

- Be familiar with the OIMP and BMPs
- Inspections & Complaint Response
  - Odor Circuit
- Assess OIMP/State Minimum Standards for Violation
Title 14 CCR 18302(d) Written Complaints of Alleged Violations

- Odor Complaint related to a compostable material handling operation or facility
  - *EA shall investigate as soon as practical within 15 days*
  - *Investigation shall include:*
    - Date and time EA arrived and departed
    - Weather Observations (*wind direction, speed, overall conditions*)
    - Observe for odor at the complainant’s location
    - If odor is detected, document:
      - *Location(s) odor is detected*
      - *Odor characteristics (odor wheel)*
      - *Intensity of odor*
      - *Identify activities conducted at the operation*
    - Any known facts relevant to the alleged violation
Benefits of an Odor Circuit

- Familiarize inspectors with odors and operations in surrounding area
- Collection of useful data
  - Baseline odor profile
  - Make correlations to determine cause of odor with possible solutions
- Help identify potential off site odor sources
Potential Off Site Odor Sources

- Waste water treatment plants
- Publicly Owned Treatment Works (POTWs)
- Dairy farms
- Rendering facilities
- Horse stables
- Animal farms
- Land Application
- Geographic/ Natural features
  - Low Tide
  - Marsh
  - Ponds
What is an Odor Circuit?

- Before the on-site inspection
- Same locations
- Upwind and downwind
- Weather conditions (wind direction? Wind speed? Etc.)
- Odor characteristics and intensity (odor wheel)
Odor Wheel

Figure 1. Composting odor wheel

Source: "Sensory Assessment and Characterization of Odor Nuisance Emissions during the Composting of Wastewater Biosolids," Water Environment Research, Volume 81, Number 7
## Odor Circuit Form

<table>
<thead>
<tr>
<th>Facility:</th>
<th>Date:</th>
<th>Inspector:</th>
<th>Weather:</th>
<th>Location (Cross Streets)</th>
<th>Time</th>
<th>Odor Characteristics</th>
<th>Intensity (0-5)</th>
<th>Wind Speed and Direction</th>
<th>Temp.</th>
<th>Notes</th>
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</table>
Performing an Odor Circuit

- CalRecycle Way
- Second Street
- Composting Facility
- First Street
- Prevailing Wind
- Neighborhood
- Waste Water Treatment Plant
Assess OIMP/State Minimum Standards for Violation

■ When is there a violation?

- OIMP not being followed
- Odor impact occurring
- OIMP being followed & odor impact occurring

■ What is an odor impact?
  - Verifying odor off site or impacts to receptors
    - Complaint investigation
    - Routine/Focused inspections

■ What if chronic odor impacts are occurring but OIMP is being followed?
  - Revise OIMP (if minimal impact)
  - Best Management Practices Feasibility Report
Odor Investigation

No odor impact occurring

Odor impact occurring
No odor impact occurring

Operator is following OIMP → Note in Inspection Report

Operator is not following OIMP → Violation of Title 14 CCR 17863.4 Odor Impact Minimization Plan
Operator is not following OIMP

Violation of Title 14 CCR 17863.4 Odor Impact Minimization Plan & 17867 General Operating Standards (2)

Odor impact occurring

Operator is following OIMP

OIMP FAILURE

Minor/few Violations

Revise OIMP

Chronic Violations

Best Management Practices Feasibility Report

Notice and Order
Benefits of Best Management Practices Feasibility Report

- Gives an idea to which BMP’s are feasible
- Help to create feasible timeline for Notice & Order
- Shows public that there is a plan
# Title 14 Section 17863.4.1 Odor Best Management Practices (BMPs) Feasibility Report

## What is it?

- Gathers and presents data on potential on-site odor sources
- Identifies and ranks on-site sources that are and are not contributing to odor impacts
- Lists BMPs that being used to minimize odor
- Analyzes the BMPs for effectiveness, practicality, costs
- Lists all potential BMPs that could be implemented
- Develops a plan and schedule for implementation of recommended BMPs
# How to use it?

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<table>
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<tbody>
<tr>
<td>• Voluntary or Enforcement Agency may require operator to prepare</td>
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<td>• Tool to use when chronic odor impacts</td>
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<td>• Identifying recommended BMPs that are <strong>feasible</strong></td>
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<td>• Systematic approach to trying each BMP</td>
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<td>• Good faith effort by the operator</td>
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</table>
### ODOR BEST MANAGEMENT PRACTICE FEASIBILITY REPORT (REPORT)

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Facility Address</th>
<th>Facility No.</th>
<th>Report Date (month/day/year)</th>
</tr>
</thead>
</table>

The use of this template is not a specific requirement of 14, California Code of Regulations (CCR), Section 178634.1, or Section 17896.30 but are provided as one possible method for regulated entities to use to provide what is required to comply with those sections.

**A. GATHER/PRESENT | 14 CCR, Section 178634.1[b][1] and 17896.30[b][1]**

Present representative and correlating odor data for each on-site source. All tools and resources used to gather data should be included as an attachment to the Report.

<table>
<thead>
<tr>
<th>Date</th>
<th>(1) Odor Impact</th>
<th>(2) Time (when data collected)</th>
<th>(3) Weather</th>
<th>(4) Odor Characteristics</th>
<th>(5) Odor Severity</th>
<th>(6) Operations Description</th>
<th>(7) Potential Sources</th>
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**B. IDENTIFY/RANK | 14 CCR, Section 178634.1[b][2] and 17896.30[b][2]**

1. Identify which potential on-site sources are contributing to the odor impacts and rank those in order of impact.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Area of On-site Source</th>
<th>Potential Sources Contributing to Odor Impacts</th>
<th>Operations Description</th>
<th>Material Type Handled</th>
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C. LIST/ANALYZE | 14 CCR, Section 17863.4.1[b][3][A] and 17896.30[b][3][A]

List and analyze all of the existing Best Management Practices (BMPs) that the operator has used to minimize odor. All resources, analysis, calculations and assumptions used to complete the table should be attached to the Report.

<table>
<thead>
<tr>
<th>BMP No.</th>
<th>Description</th>
<th>(1) Effectiveness in Reducing Odors*</th>
<th>(2) Potential for More Extensive Use</th>
<th>(3) Operationally Practical?</th>
<th>(4) Approx. Cost to Implement**</th>
<th>(5) New Permit(s) or Permit Changes?</th>
<th>(6) Overall Recommendation</th>
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</table>

*Supporting data for all BMPs found to be ineffective should be included as an attachment to the Report.
**All calculations and assumptions used to approximate the costs to implement the BMPs should be included in the Report.

List all existing BMP(s) found to be ineffective.

<table>
<thead>
<tr>
<th>BMP No.</th>
<th>(7) Existing BMP(s) Found to be Ineffective</th>
<th>Rationale</th>
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*Supporting data for all BMPs found to be ineffective should be included as an attachment to the Report.

D. LIST/ANALYZE | 14 CCR, Section 17863.4.1[b][3][B] and 17896.30[b][3][B]

List and analyze all of the potential BMP(s) that the operator has NOT used to minimize odor. All resources, analysis, calculations, and assumptions used to complete the table should be attached to the Report.

<table>
<thead>
<tr>
<th>BMP No.</th>
<th>Description</th>
<th>(1) Potential to Reduce Odor Impacts*</th>
<th>(2) Operationally Practical?</th>
<th>(3) Approx. Cost to Implement**</th>
<th>(4) New Permit(s) or Permit Changes?</th>
<th>(5) Overall Recommendation and Ranking</th>
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E. PLAN/IMPLEMENT | 14 CCR, Section 17863.4.1(b)[3][C] and 17896.30(b)[3][C]

Develop a plan and schedule for implementation of the recommended BMP(s) based on analysis conducted in section C and D above.

<table>
<thead>
<tr>
<th>Existing BMP(s) and Potential BMP(s) To Be Implemented</th>
<th>Plan and Schedule for Implementing Potential BMPs</th>
<th>Action</th>
<th>Start Date</th>
<th>End Date</th>
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</table>
Commonly Cited & Relevant Regulations

- Title 14 CCR 17863.4 Odor Impact Minimization Plan
- Title 14 CCR 17863.4.1 Odor Best Management Feasibility Report
- Title 14 CCR 17866. General Design Requirements
- Title 14 CCR 17867. General Operating Standards
- Title 14 CCR 17867.5 Training
- Title 14 CCR 18227. Report of Compost Site Information (RCSI)
- Title 14 CCR 18302(d) Written Complaints of Alleged Violations
COMMONLY OBSERVED BMPs
Misters with added deodorant to prevent odors
Biocap placed on active windrows
Biofiltration of the air to scrub odors
Aeration in detention pond

Addition of chemicals to neutralize odors

Covered piles
Conclusion

- Ensure OIMP is strong and is being followed
  - *Revisit annually and update with any changes*
- Odor Circuit – investigative and proactive tool
- BMPs Feasibility Report for chronic odor impacts
  - *Completed before Notice & Orders*
- Reduction of GHGs is a statewide effort
QUESTIONS?

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