



Working Group Meeting #2: Proposed Rule 1188 – Vacuum Truck Operations

South Coast Air Quality Management District
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June 12, 2014



Agenda

- § Introductions
- § BAAQMD Test Results
- § BAAQMD VOC Inventory Methodology
- § SCAQMD Proposed Draft Rule (Discussion)
- § Preliminary Sample of Survey Items
- § Preliminary Rule Development Schedule



BAAQMD Test Results

§ 32 Source Tests Completed

§ Tests Conducted at Refineries, Terminals, Bulk Plants and Pipeline Facilities

§ Summary of Test Results

- Pages 2 & 3 of Appendix A of February 2012 Staff Report

§ Test Conditions

- Some Cases: VOC Control Equipment In Place
- Other Cases: No VOC Control Equipment In Place

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BAAQMD VOC Inventory Methodology

§ **Typical Regulated Materials**

- Gasoline, Naphtha, Transmix
- Waterborne Crude, Cutter Diesel, Recovered Oil, Skimmed Oil, Waste Oil

§ **Uncontrolled Vacuum Truck (V.T.) Emissions**

- = "Regulated" Material Throughput x Emission Factor (E.F.)

§ **Emission Factors Based on 32 Tests Conducted**

- **2.41 lb/bbl** : Gasoline and Light Products
- **0.082 lb/bbl** : Wastewater and Waste Oil Products

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BAAQMD VOC Inventory

§ Refinery Findings

- Material Quantities and Types Not Closely Tracked (Prior to Rule Adoption)
- Best Recordkeeping: Chevron, Richmond (Chosen as Baseline)
- Based on 1 Mil. BBL of All Products Loaded to Vacuum Trucks at Chevron, Richmond
- Other Refineries Regulated Material Throughput Estimate Based on Refining Capacity Factor
- Average Daily Vacuum Truck Usage: 22 (For All Refineries, Except for Turnarounds)

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BAAQMD VOC Inventory

§ Terminals, Bulk Plants and Pipeline Facilities Findings

- Based on Estimated 10,000 BBL/Year of All Products Loaded to Vacuum Trucks
- Average Daily Vacuum Truck Usage: 2 (Combined)
- Predominantly Refined Products Loaded
- Extremely Small Amount of Waste Water and Waste Oil Loaded
- Minimal Control Technology Usage Information Available

§ Passive Emissions (Excluded)

- From Vacuum Truck Barrel When Loaded And Driven to Other Locations
- During Unloading of Vacuum Trucks

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BAAQMD Calculation Assumptions

§ Refineries

- 13.5% of All Products Loaded on Vac. Trucks is Light Products
- 86.5% (Remainder) Consists of Wastewater and Waste Oil
- Positive Displacement (PD) Pump Usage: 15% of Transfers
- Control Equipment Usage: 5% of Transfers
- No Control Equipment Usage: 80% of Transfers
- Control Efficiency: PD Pumps (75%); Control Equipment (95%)

§ Terminals, Bulk Plants and Pipeline Facilities

- 75% of Products Loaded to Vacuum Trucks is Light Products
- 25% (Remainder) Consists of Wastewater and Waste Oil
- PD Pump Usage: 17% of Transfers
- Control Equipment Usage: 3 % of Transfers

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SCAQMD Preliminary Draft Rule Applicability and Purpose

§ Applicability

- Petroleum Refineries
- Bulk and Marine Terminals
- Gasoline Terminals
- Oil and Gas Production Operations
- Pipelines
- Other Facilities Pending Feasibility Determination

§ Purpose

- Reduce Emissions Associated with the Transfer of Materials Using Vacuum trucks

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SCAQMD Preliminary Draft Rule VOC Control and Leak Standards

§ Emission Control Requirements

- 500 ppm Max. Allowable Exhaust Concentration:
 - Vacuum Truck Operation or Control Device Exhaust
- 95 Percent Minimum Control Equipment Efficiency

§ Liquid Leak Standards

- Three (3) Drops Per Min. for Vacuum Truck Unless
 - Operator Discovers and Eliminates within 3 Min. of Discovery Or
 - Loading Event is Shut Down within 3 Min. After Operator Discovery

§ Vapor Leak Standards

- 500 ppm for Vacuum Truck or Associated Equipment Unless
 - Operator Discovers and Reduces to <500 ppm within 3 Min. of Discovery Or
 - Loading Event is Shut Down within 3 Mins. After Operator Discovery

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SCAQMD Preliminary Draft Rule VOC Monitoring Requirements

§ Non Carbon Adsorber Control Equipment Exhaust (Concentration) Monitoring

- If Vacuum Truck < 20 % Full Prior to Loading
 - One Measurement Before Vacuum Truck is 20 % Full
 - Another Measurement Before Vacuum Truck is 60% Full
- If Vacuum Truck Already \geq 20 % Full Prior to Loading
 - One Measurement After Start of Loading
 - Another Measurement Before Vacuum Truck is 60% Full
- If Vacuum Truck \geq 60 % Full Prior to Loading
 - One Measurement Immediately After Start of Loading

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SCAQMD Preliminary Draft Rule VOC Monitoring Requirements

§ Carbon Adsorber Exhaust Monitoring

- Measurement Within 2 Minutes After the Start of Each Loading Event
- Additional Measurements Every 10 Minutes thereafter
- When Replacement or Back-Up Carbon Vessel is Used
 - Measurement Within 2 Minutes After Replacement

§ Control Equipment Efficiency

- Source Test to Verify Efficiency of Control Equipment, Or
- Documentation to Indicate Testing Conducted Within 12 Months Prior to Vacuum Truck Operation

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SCAQMD Preliminary Draft Rule Recordkeeping

§ Effective 12 Months Following Rule Adoption

- Monitoring and Source Test Data
- Date, Time and Loading Duration
- Type and Volume of Regulated Material Transferred To Vacuum Trucks During Each Loading Event
- Daily Volume of Crude Oil Loaded Onto Vacuum Trucks
- Volume of Oil Recovered From Centrifuging Loaded Onto Vacuum Trucks
- Make, Model and Serial No. of Pump or Control Equipment Used
- Make, Model and Serial No. of VOC Measuring Device Used
- Any Analyses Performed to Determine Whether a Material is “Regulated”

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SCAQMD Preliminary Draft Rule Reporting

§ Scheduled Loading Events

- Upon SCAQMD Request
 - Submit List of Loading Events To Be Conducted Within 30 Days
 - Submit Scheduled List of Loading Events Within 3 Working Days of Start of Activities
 - Submit Notice of Any Changes to Schedule 24 Hours Prior To A Loading Event

§ Other Data

- Start Date and Time of Loading Event
- Facility Info. Including Name, Plant No., Tank, Equipment or Pipeline Location
- Control Equipment Company Name, Equipment Type Operator's Information
- Estimated Volume and Material Type to Be Loaded

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Preliminary Sample of Survey Items

§ Regulated Materials

- List of Materials Transferred from Each Source
- Volume of Material Loaded by Vacuum Truck
- Percentage of Material Discharged Off-Site vs. Percentage Transferred On-Site
- Locations from which Material is Transferred
- Locations to which Material is Transferred to Onsite

§ Vacuum Truck Equipment

- List of Vacuum Truck Companies Utilized
- Frequency of Vacuum Truck Usage
- Frequency of Usage and Types of Control Equipment
- Frequency of On-Site Vacuum Truck Cleaning

§ Survey Period (Discussion)

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Preliminary Rule Development Schedule

Item	Action	Target
Vacuum Truck Activities at Affected Facilities	Form Working Group to: § Study Vacuum Truck Activities; § Conduct Source Testing; and § Collect Data and Use to Estimate VOC Emissions	May 2014 thru July 2014
Control Technology Application		
Field Visits		
Milestones	Working Group Mtg. #2	June 2014
	Working Group Mtg. #3; Survey Distribution	July 2014
	Public Workshop	Sept. 2014
	Set Hearing	Oct. 2014
	Final Hearing	Nov. 2014

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