Ventura County Air Pollution Control District
FINAL STAFF REPORT – February 29, 2008

REVISIONS TO RULE 74.29
SOIL DECONTAMINATION OPERATIONS

EXECUTIVE SUMMARY

Rule 74.29 was originally adopted on October 19, 1995, and revised on January 8, 2002. The rule applies to situations where gasoline, diesel fuel or jet fuel has leaked into soil. Usually, defective storage tanks (either underground or above ground) or defective piping cause the leaks. The rule establishes procedures by which reactive organic compound (ROC) emissions are minimized during the aeration, treatment or removal of this soil. Treatment usually involves bioremediation or vapor extraction. Bioremediation is the use of biological agents to degrade soil contaminants. Vapor extraction removes and routes contaminants from in-place or excavated soil using air injection and/or suction. The 2002 revision corrected EPA deficiencies and other minor issues.

In this revision, the rule is being expanded to include requirements for the excavation, transportation, and handling of active and inactive contaminated soil. Many of the proposed revisions appear in the May 11, 2001, revision to South Coast Air Quality Management District (SCAQMD) Rule 1166, *Volatile Organic Compound Emission from Decontamination of Soil*. Other material was taken from Bay Area Air Quality Management District (BAAQMD) Rule 8-40, *Aeration of Contaminated Soil and Removal of Underground Storage Tanks* (last amended 12/15/99). The revisions are required because, under the provisions of Health and Safety Code section 40914(b)(2), staff is required to demonstrate that the District's plan to attain the California ambient ozone standard provides for expeditious implementation of "every feasible measure" to reduce ozone precursor emissions (including ROC). In addition, staff proposes to improve Rule 74.29 by clarifying language and adding definitions where necessary. Revisions to Rule 23.F.23 and Rule 44.B.4 are also proposed.

The proposed revision to Rule 74.29 is expected to reduce ROC emissions by approximately 50 tons per year. The cost-effectiveness of covered storage piles is estimated to be approximately $1399 per ton of ROC removed county-wide.

BACKGROUND

Historical

Rule 74.29 is based on Further Study Control Measure R-606 from the 1991 Air Quality Management Plan (see Appendix A). The measure codified existing District policies on soil aeration, bioremediation, and soil vapor extraction operations for the clean-up of contaminated soil. In 1995, these policies resulted in the reduction of an estimated 65 tons per year of vented ROC from 52 decontamination sites. The 1995 rule limited aeration, established limits on vented gas emissions, and required both the covering of exposed soil and notice of excavation. Revisions to Rule 74.29 in 2002 corrected EPA deficiencies and other minor issues.

Other District Rules

SCAQMD Rule 1166, *Volatile Organic Compound Emission from Decontamination of Soil,* originally went into effect on August 5, 1988, and was last revised on October 11, 2001. In that revision, requirements for excavation , grading and the handling of soil in stockpiles were added. A "mitigation plan" was added as well, intended to help minimize ROC emissions from the decontamination process. Also added were increased recordkeeping requirements and testing information.

BAAQMD Rule 8-40, *Aeration of Contaminated Soil and Removal of Underground Storage Tanks*, was last revised on December 15, 1999. In this revision, uncontrolled aeration was prohibited, a 50 ppm (by weight) threshold for contaminated soil was added, and provisions were added for real time monitoring with an organic vapor analyzer. Emission reduction measures for the excavation and removal of contaminated soil were also added, as well as reporting requirements, definitions and additional exemptions.

PROPOSED RULE REVISIONS

The proposed revisions to Rule 74.29 involve a number of new requirements. The rule is being expanded to include requirements for the excavation, transportation, and handling of active and inactive soil. The thresholds for two of the exemptions in Section C are being lowered. Specific recordkeeping requirements are being added to Section D. In addition, language is being clarified and definitions are being added when necessary.

Section B, Requirements

Subsection B.1 is being revised to more uniformly address certified portable organic vapor analyzer measurements. The other subsections are being written in a similar fashion. The measurement procedure added below is moved from Subsection F.5. Subsection F.4 is modified as well to specify EPA Method 21 for OVA certification.

1. No person shall cause or allow the aeration of soil that contains gasoline, diesel fuel, or jet fuel, if such aeration:

a. Emits reactive organic compounds (ROC), as measured by a certified organic vapor analyzer, ~~organic vapors sufficient to cause a calibrated organic vapor analyzer meeting the specifications of EPA Method 21 to register~~ in excess of 50 parts per million by volume (ppmv) above background, as hexane, ~~or more,~~ except nonrepeatable momentary readings~~, as determined by the method specified in Subsection F.5~~. In determining compliance, a portion of soil measuring three inches in depth and no less than six inches in diameter shall be removed from the soil surface and the probe inlet shall be placed near the center of the resulting hole, level with the soil surface surrounding the hole; or

Offsite aeration is prohibited.

New Subsection B.2 requires an approved portable measurement device (see Subsection F.4) for ROC emission measurements at excavation sites. ROC emissions may not exceed 50 ppm by volume, as hexane. Measurements are taken every 15 minutes.

2. No person shall excavate an underground storage tank and/or transfer piping currently or previously used to store an applicable compound, or excavate or grade soil containing an applicable compound, unless ROC emissions are monitored with a certified organic vapor analyzer at least once every 15 minutes during the excavation period commencing at the beginning of excavation or grading. Soil with emission measurements in excess of 50 parts per million by volume (ppmv), as hexane, shall be considered contaminated.

During excavation, all inactive exposed contaminated soil surfaces shall be treated with a vapor suppressant or covered with continuous heavy duty plastic sheeting (4 mil or greater) or other covering to minimize emissions of ROC to the atmosphere. Covering shall be in good condition, overlapped at the seams, and securely anchored to minimize headspace where vapors may accumulate.

Renumbered Subsections B.3 and B.4 are being revised for clarity. Subsection B.3 will refer to "total system flow rate" rather than "maximum rating of the system's blower or fan" to account for systems that use more than one fan. A "certified organic vapor analyzer," as defined in revised Subsection F.4, is referenced. Subsection B.4 covers "in situ," or "in place," remediation equipment, and Subsection B.3 covers other vapor extraction equipment. Subsection B.3. and Subsection B.4 are proposed for revision as follows:

3~~2~~. No person shall operate a vapor extraction, bioremediation, or bioventing system unless ~~any gasses vented to the atmosphere have an ROC concentration~~ ROC emissions, as measured by a certified organic vapor analyzer, are less than or equal to 100 ppmv, ~~measured~~ as methane. If the total system flow rate ~~maximum rating of the system's blower or fan~~ is greater than 300 standard cubic feet per minute (scfm) and the system would emit ROC at a rate greater than 0.08 lb/hour, a Health Risk Assessment shall be required.

4~~3~~. No person shall operate an in situ soil bioventing or bioremediation system ~~that~~

~~**emits fugitive gasses to the atmosphere if such gasses contain organic compounds sufficient to cause a calibrated organic vapor analyzer meeting the specifications of EPA Method 21 to register**~~ **unless ROC emissions, as measured by a certified organic vapor analyzer, are less than or equal to 50 ppmv above background, as hexane, ~~or more~~, except nonrepeatable momentary readings, when measured at a distance of three inches from the soil surface.**

Renumbered Subsection B.5 is modified to specify that notice shall be required for the excavation of gasoline, diesel and jet fuel storage tanks and transfer piping.

5. The owner or operator of any applicable underground storage tank shall notify the District ~~Enforcement Section~~ Compliance Division at least 24 hours prior to beginning the excavation of said storage tank and/or transfer piping.

New Subsections B.6, B.7. B.8 and B.9 are being added to specify requirements for active and inactive storage, treatment and transportation of contaminated soil. The intent is to minimize ROC emissions.

6. Contaminated soil in active storage piles shall be kept visibly moist by water spray, treated with a vapor suppressant, or covered with continuous heavy duty plastic sheeting (4 mil or greater) or other covering to minimize emissions of ROC to the atmosphere. Covering shall be in good condition, overlapped at the seams, and securely anchored to minimize headspace where vapors may accumulate. For any active storage pile, the surface area not covered by plastic sheeting or other covering shall not exceed 6,000 square feet.

7. Contaminated soil in inactive storage piles shall be with covered with continuous heavy duty plastic sheeting (4 mil or greater) or other covering to minimize emissions to the atmosphere. The covering shall be in good condition, overlapped at the seams, and securely anchored to minimize headspace where vapors may accumulate.

8. If not removed within 30 days of excavation, on-site treatment to remove contamination from contaminated soil at an excavation or grading site shall be initiated. The treatment of contaminated soil shall be subject to all applicable District Rules and Regulations.

Originally, Subsection B.8 required the removal of contaminated soil after 30 days of storage. The on-site treatment now specified requires a District Permit to Operate, which must be in place before work can begin. Permits are not typically issued within 30 days. However, as a policy, it is possible for on-site remediation activity to commence after the District receives a complete permit application.

Subsection B.9 establishes requirements for truck transport of contaminated soil.

9. Trucks used to transport contaminated, and associated trailers, shall be tarped prior to leaving the site. Contaminated material shall not be visible beyond the tarp and shall not extend above the sides or rear of the truck or trailer.

A former subsection requiring the cleaning of trucks, trailers and tires prior to leaving the work site has been deleted. These requirements will be covered by new District Rule 55, Fugitive Dust.

Section C, Exemptions

Subsection C.2 is proposed for deletion. No owner or operator is known to have taken advantage of the exemption during its existence. Other exemptions to the aeration restrictions in Subsection B.1.a will remain available in Subsection C.3 (renumbered C.2).

~~**2. Subsection B.1.a shall not apply to any soil aeration project where the owner or operator demonstrates to the satisfaction of the Air Pollution Control Officer that the following two requirements are satisfied:**~~

~~**a. The project is not located within 1,000 feet of the outer boundary of a school, and**~~

~~**b. The project will result in the emission of less than 200 pounds of ROCs per rolling twelve month period.**~~

Renumbered Subsection C.2 (formerly C.3) is being restructured. Also, two of the thresholds in Subsection C.2 are being significantly revised. The threshold in Subsection C.2.d is being reduced from 10 cubic yards to 1 cubic yard. This corresponds to a

similar requirement in SCAQMD Rule 1166. As revised, a soil aeration project of less than 1 cubic yard is exempt from the 50 ppmv ROC emission limitation in Subsection B.1.a.

d. Any ~~To any~~ soil aeration project involving less than 1 cubic yard ~~10 cubic yards~~ of contaminated soil~~, provided the soil contains less than 0.8 percent by weight contaminant, as analyzed in accordance with Subsection F.2~~; or

The threshold in Subsection C.2.e is also being reduced. In this case, soil contamination situations involving less than 5 gallons of applicable material are exempt from the 50 ppmv ROC emission limitation in Subsection B.1.a. The previous threshold was one barrel (55 gallons). This corresponds to a similar requirement in SCAQMD Rule 1166.

e. Situations where ~~Where~~ the soil contamination resulted from a spill or release of less than five (5) gallons ~~one barrel~~ of diesel fuel, jet fuel, or gasoline; or

Staff is also taking the opportunity to update the references in Subsection C.3.f, as follows. [The amendment changed; see page 13]:

f. Contaminated ~~To contaminated~~ soil used as daily cover at permitted Class III Solid Waste Disposal Sites if such soils do not have ~~a gasoline~~ an ROC concentration exceeding 100 parts per million by weight (ppmw) or a diesel fuel concentration exceeding 1,000 ppmw as determined by the method specified in Subsection F.1 ~~F.2~~.

Section D, Recordkeeping

The recordkeeping requirements in Section D are being expanded to include specific information. The requirements for aeration projects remain the same. As noted above, the latest revision to SCAQMD Rule 1166 added a mitigation plan. The requirements for this plan appear in Appendix B. A few of the recordkeeping requirements from the mitigation plan have been included in Section D.

For any soil aeration project subject to this rule, the records specified in Subsection D.1 shall be made available to the Air Pollution Control Officer upon request for at least two years after initial entry.

For any other soil ~~aeration~~ decontamination project subject to this rule, ~~records showing each date that soil was aerated and the quantity of soil aerated on each date~~ the following information shall be made available to the Air Pollution Control Officer upon request for at least two years after initial entry.

1. All dates that soil was disturbed and the quantity of soil disturbed on each date.

2. Reasons for excavation or grading.

3. Cause of ROC soil contamination and history of the site.

4. Description of tanks or piping associated with the soil contamination.

5. Description of mitigation measures employed for dust, odors and ROC emissions.

6. Details of treatment and/or disposal of ROC contaminated soil, including the ultimate receptor.

7. Description of monitoring equipment and techniques.

8. All ROC emission measurements shall be recorded on a continuous permanent strip-chart or in a format approved by the Air Pollution Control Officer (APCO).

9. A map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential areas or other sensitive receptors such as hospitals or locations where children or elderly people live or work.

Section F, Test Methods

As noted above, the 200 pounds per 12 rolling month exemption in Subsection C.2.b is proposed for deletion (see page 3). Therefore, the related calculation method in Subsection F.1 is proposed for deletion.

Renumbered Subsection F.4 (now F.3) below is being revised for clarification and to specify that EPA certified organic vapor analyzers are required.

Figure 1
Proposed New and Revised Definitions (Section G)
(10/3/07)

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1. "Active": A work site to which soil is currently being added or from which soil is currently being removed. Activity must occur within one hour to be current.

5. "Certified organic vapor analyzer": An applicable instrument meeting the specifications and performance criteria in Section 6.0 of EPA Method 21.

7~~5~~. "Contaminated": ~~Containing diesel fuel, gasoline, or jet fuel~~ Emitting ROC in excess of 50 parts per million by volume (ppmv), as hexane.

10. "Excavation": The process of digging out and removing soil. Included is the digging out and removal of any material necessary to expose the contaminated soil, such as asphalt or concrete.

12. "Grading": The process of leveling off material to produce a smooth surface. Included is the removal of any material necessary to expose soil, such as asphalt or concrete.

14. "Jet Fuel": A kerosene-based product having a maximum distillation temperature of 400 degrees Fahrenheit at the 10 percent recovery point and a final maximum boiling point of 572 degrees Fahrenheit and meeting the American Society of Testing and Materials Specification D 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8), used for commercial and military turbojet and turboprop aircraft engines.

19~~15~~. "Soil Aeration Project": One or more operations conducted at a stationary source ~~over any 12-month rolling period,~~ in which excavated and contaminated soil is exposed to the atmosphere without the use of air pollution control equipment or a vapor extraction, bioremediation, or bioventing system.

3~~4~~. The ~~organic vapor~~ ROC concentration measurements required in Subsections B.1, B.2, B.3, B.4 and B.6 shall be made using an organic vapor analyzer certified according to the requirements ~~in the exhaust of a vapor extraction, bioventing, or bioremediation system shall be determined using an instrument that meets the specifications~~ of EPA Method 21. For stack measurements, the ~~The~~ probe inlet of ~~such instrument~~ the analyzer shall be placed on the centerline of the exhaust or vent, upstream of the point where the exhaust gasses meet the atmosphere.

The soil contamination measurement procedure in Subsection F.5 is being moved to Subsection B.1.

Section G, Definitions

The proposed revisions to Section G, Definitions, appear in Figure 1. The new definition of "Active" is adopted from Bay Area AQMD Rule 8-40. The definitions of "Excavation" and "Grading" are from SCAQMD Rule 1166. The definition of "Contaminated" is being revised to be more consistent with other concentration thresholds in the rule. A definition of "Certified organic vapor analyzer" is being added. A definition of "Jet Fuel" is also being added. Because Section B now includes specific requirements for the containment of ROC emissions from active and inactive storage piles, the definition of "Properly Covered" is no longer needed.

Note that the definition of "Soil Aeration Project" in Subsection G.19 now excludes consideration of a "12 month rolling period." The language is no longer necessary because Subsection C.2, which contains similar language, is proposed for deletion.

Other Rule Revisions

Rule 23 – Exemptions from Permit

As noted above, the exemption in Subsection C.2 is proposed for deletion. As a result, Rule 23.F.23 must

be revised to reflect the change; the reference to Subsection C.2 will be deleted, as follows:

23. Any soil aeration project exempt from the soil aeration limit in Rule 74.29 pursuant to Subsection C.1 or C.2 ~~, C.2, or C.3~~ of Rule 74.29.

Also, Rule 23.J.10, is being amended to exempt only cooling towers and ponds that are not in contact with contaminated process water. Rule 23.J.12, an exemption for nuclear activity, is being reworded and updated.

Rule 44 – Exemption Evaluation Fee

As noted above, the exemption in Subsection C.2 is proposed for deletion. As a result, the fee in Rule 44, Subsection B.4, that is applied to defray the cost of calculating compliance with the exemption is no longer necessary. This fee is proposed for deletion.

~~**4. For Rule 74.29, any person requesting an exemption from the soil aeration requirements pursuant to Subsection C.2 of Rule 74.29 shall be assessed an evaluation fee of $250.**~~

EMISSION REDUCTIONS / COST EFFECTIVENESS

The proposed revisions to Rule 74.29 include requirements for the excavation, transportation, and handling of active and inactive soil. Most of the changes involve covering exposed contaminated soil. Because the concentration of ROC in contaminated soil varies considerably, emissions (and emission reductions) are difficult to predict. In 1995[1], staff estimated that an individual soil cleanup operation may take three years to complete and involve the destruction or treatment of a total of about 7,500 pounds of ROC (2,500 lb per year).

In the 1995 staff report, the cost effectiveness of covering a contaminated soil pile was estimated.[3] The following assumptions were made:

1. The soil contains 5,000 ppmw gasoline.
2. Gasoline contaminated soil weighs 92.6 lbs/ft^3
3. Without covering the soil, all contaminants are emitted into the atmosphere,
4. The cover is 50% effective at controlling gasoline vapor escape.
5. 20' by 100' polyethylene sheets cost $80 each (contractor charges extra 15 percent for sheets).
6. Contractor costs are: Technician $35/hr (2 hrs maximum for 2 technicians), Drive time costs $35/hr (1 hour maximum each way).
7. Soil pile dimensions are: height - 5 feet, width 60 feet, and length 40 feet.

Costs:

Drive time: ($35/hr)(1 hr)(2)	$70
Materials: ($80/sheet)(3 sheets) + (15%)	$276
Labor: ($35/hr)(2 hrs)(2)	$140
TOTAL:	$486

If we assume that covers are changed four times a year, the total annual cost is $1944.

ROC Emissions Reduced:

(5 ft)(60 ft)(40 ft)= 12,000 ft^3 of soil
(12,000 ft^3)(92.6 lbs/ft^3)(5,000/10^6)(0.5) = 2,778 lbs

If we assume an average of 36 decontamination sites per year, 50.0 tons per year of ROC is reduced.

Cost-effectiveness:

For an individual unit:
($1944) / (2,778 lbs ROC) = $0.70 /lb ROC removed

Assuming 36 decontamination sites per year, the county-wide cost-effectiveness of covered piles is: ($1944*36)/(2,778 lbs)(36)/(2000 lb/ton) = $1399.60 per ton of ROC removed. These results relate well to the District's Best Available Control Technology cost effectiveness threshold of $9.00 per pound and $18,000 per ton of ROC reduced.

In the 2001 staff report for the proposed revisions to Rule 1166[2], SCAQMD stated that 300 mitigation plans were issued in 2000. A mitigation plan is issued for each soil decontamination project. "Uncontrolled [ROC] emissions from these activities are about 5 tons per year. The estimated reduction ensured by the current rule is 27 pounds per day, assuming the proposed amendments will achieve about 90% reduction." This translates to about 33 pounds of ROC per year for every project, considerably less that the 1995 VCAPCD estimate.

SOCIOECONOMIC IMPACT ANALYSIS

Assembly Bill 2061 (Polanco), which went into effect on January 1, 1992, requires that the APCD Board consider the socioeconomic impact of any new rule or amendment to an existing rule if air quality or emission limits are affected. The proposed amendments to Rule 74.29 may affect both air quality and emission limits, so the requirements of the bill must be evaluated. The evaluation focuses on the actual cost of the amended rule on affected businesses.

The Board must evaluate the following socio-economic information on the proposed amendments to Rule 74.29:

(1) *The type of industries or business, including small business, affected by the rule or regulation.*

The adoption of amended Rule 74.29 will directly affect approximately 36 facilities per year in Ventura County. These facilities include primarily retail gasoline dispensing facilities and other operations where gasoline, diesel fuel, or jet fuel is dispensed. Some of these facilities can be considered small businesses.

(2) *The impact of the rule or regulation on employment and the economy of the region affected by the adoption of the rule or regulation.*

The adoption of amended Rule 74.29 is expected to have no impact on either employment or the economy of Ventura County.

(3) *The range of probable costs, including costs to industry or business, including small business, of the rule or regulation.*

The cost to comply with the proposed covering requirement is estimated to be 70 cents per pound, or, county-wide, $1399 per ton of ROC removed. The proposed revisions codify existing practice and are expected to result in no significant additional cost to any business in Ventura County.

(4) *The availability and cost effectiveness of alternatives to the rule or regulation being proposed or amended.*

There are no alternatives to the proposed amendments to Rule 74.29.

(5) *The emission reduction potential of the rule or regulation.*

The proposed revision is expected to result in a 50.0 ton per year ROC emission reduction in Ventura County.

(6) *The necessity of adopting, amending, or repealing the rule or regulation in order to attain state and federal ambient air standards pursuant to Chapter 10 (commencing with Section 40910).*

The proposed amendments to Rule 74.29 are needed because, under the provisions of Health and Safety Code section 40914(b)(2), staff is required to demonstrate that the District's plan to attain the California ambient ozone standard provides for expeditious implementation of "every feasible measure" to reduce ozone precursor emissions. ROC is an ozone precursor pollutant.

The proposed amendments to both Rule 23 and Rule 44 affect neither air quality nor emission limits, so a socio-economic impact analysis is not required.

ENVIRONMENTAL IMPACTS OF METHODS OF COMPLIANCE / CEQA

California Health and Safety Code Section 21159 requires the District to perform an environmental analysis of the reasonably foreseeable methods of compliance. The analysis must include the following information on proposed Rule 74.29:

(1) *An analysis of the reasonably foreseeable environmental impacts of the methods of compliance.*

(2) *An analysis of the reasonably foreseeable mitigation measures*.

(3) *An analysis of the reasonably foreseeable alternative means of compliance with the rule or regulation.*

The proposed revision includes requirements for the excavation, transportation, and the handling of contaminated and uncontaminated soil. The

reasonably foreseeable methods of compliance include covers, timed exposure periods and additional ROC measurements. No reasonably foreseeable mitigation measures or reasonably foreseeable alternative means of compliance with the rule are known. The Notice of Exemption prepared for the revisions to SCAQMD Rule 1166 on May 11, 2001, states that "the proposed project has no potential to adversely effect air quality or any other environmental area." Because the proposed revisions to Rule 74.29 are based on revisions to Rule 1166, no averse environmental impact is expected.

The proposed amendments to both Rule 23 and Rule 44 do not include emission limits or compliance criteria, so analysis is not required.

CEQA Requirements

Staff has determined that the adoption of the proposed revisions to Rule 74.29 is within the scope of the categorical exemptions from the California Environmental Quality Act (CEQA) under state CEQA Guideline Sections 15307, Protection of Natural Resources, and 15308, Protection of Environment, and no exception to these categorical exemptions applies. In addition, staff has determined that adoption of the proposed revisions to both Rule 23 and Rule 44 are exempt from CEQA under Section 15061(b)(3) of the CEQA Guidelines because it can be seen with certainty that there is no possibility that these changes may have a significant effect on the environment.

ANALYSIS OF EXISTING FEDERAL AND DISTRICT REGULATIONS

California Health & Safety Code Section 40727.2(a) requires districts to provide a written analysis of existing regulations prior to adopting, amending or repealing a regulation. Section 40727.2(a) states:

> In complying with Section 40727, the district shall prepare a written analysis as required by this section. In the analysis, the district shall identify all existing federal air pollution control requirements, including, but not limited to, emission control standards constituting best available control technology for new or modified equipment, that apply to the same equipment or source type as the rule or regulation proposed for adoption or modification by the district. The analysis shall also identify any of that district's existing or proposed rules and regulations that apply to the same equipment or source type, and all air pollution control requirements and guidelines that apply to the same equipment or source type and of which the district has been informed pursuant to subdivision (b).

Aside from Rule 74.29 and the VCAPCD permit rules, no other known state or federal air pollution control regulations apply to soil decontamination operations in Ventura County. However, these operations may be subject to federal Resource Conservation and Recovery Act (RCRA) regulations for underground storage tanks (USTs) in 40 CFR Part 280 and 40 CFR Part 281. In addition, the California State Water Resources Control Board operates a UST Cleanup Program in conjunction with the Ventura County Environmental Health Division's Leaking Underground Fuel Tank (LUFT) program.

The proposed amendments to both Rule 23 and Rule 44 include no emission control standards; therefore, the requirements of Health & Safety Code § 40727.2(a) are satisfied pursuant to Health & Safety Code § 40727.2(g).

COMMENTS AND MEETINGS

Public Workshop
November 7, 2006

Staff stated that the rule applies only to gasoline, diesel and jet fuel. Aeration is permitted if the soil contains these compounds in concentrations less than 50 ppmv ROC. The following questions and comments from attendees were addressed:

1. Why does Subsection B.1.a (and former Subsection F.5) require operators to dig a small hole in a pile of soil to measure ROC concentration? Staff stated that volatiles at the surface of a pile can evaporate. By digging the prescribed hole, the ROC concentration of the soil is determined more accurately.

2. In Subsection B.6, what does "continuous" mean with respect to heavy duty plastic sheeting? It was stated that covering large areas in plastic sheeting is difficult. For hazardous pollutants, two sided sticky-tape is sometimes required to join sheets. 100 foot by 100 foot 10 mil plastic sheets cost $1600 - $2000. Staff stated that piles must be covered with overlaps, but bonding is not required. In the staff report, a 50 percent emission reduction efficiency is assumed in the cost-effectiveness calculations.

3. Water spraying for ROC suppression may cause run-off problems. There is no definition of "visibly moist" in Subsection B.6. Also, an attendee asked for the origin of the 6000 square foot active work area specification. Staff agreed to look into this issue. [Staff believes "visibly moist" requires no definition. BAAQMD Rule 8-40-304 limits active storage piles to 6,000 square feet.]

4. Is the requirement for "permanent strip charts" in Subsection D.8 necessary? Many analyzers have only a digital screen. Staff stated that both strip charts and field notes are acceptable and that the proposed rule will be revised.

5. The definition of "active storage pile" in Subsection G.1 specifies that active piles become inactive after one hour of no activity. An attendee commented that productivity could be lost if work occurs around a lunch hour. Staff agreed to discuss this issue. [No change to the rule is proposed]

The Boeing Company
November 27, 2006

1. *Under Section B.l.a., "In determining compliance, a portion of soil measuring three inches in depth and no less than six inches in diameter shall be removed from the soil surface and the probe inlet shall be placed near the center of the resulting hole, level with the soil surface surrounding the hole." By creating a hole, is the OVA concentration being artificially increased? It is not clear whether the requirement to dig a hole is consistent with U.S. EPA RCRA SW846 Sampling Plan for evaluating solid waste, physical/ chemical method (http://www.epa.gov/epaoswer/hazwaste/test/index.htm). It seems that measuring the surface of the soil pile is more consistent with RCRA.*

Since reactive organic compound (ROC) material may evaporate from the surface of a storage pile, the measured concentration at the surface could be artificially low. We believe the three inch hole enables a more accurate measurement of the contamination within a storage pile.

2. *It is not clear what the monitoring frequency for measuring ROC's is under Section B.1.a. For example, if a company is aerating multiple piles of soil, is every soil pile that is generated required to be monitored for ROC's using an Organic Vapor Analyzer (OVA)? If so, that would pose an undo burden for large jobs involving the aeration of 15,000- 20,000 cubic yards of soil.*

Aeration is prohibited for soils that emit ROC in excess of 50 parts per million by volume. Once it is established that the threshold has not been exceeded in a particular situation, aeration may commence. ROC emissions are not expected to increase after the commencement of aeration.

3. *In Section B.6., the requirement that contaminated soil in active storage piles be kept visibly moist by water spray or treated with a vapor suppressant would seem to cause a surface water runoff problem. On the other hand, the requirement to cover and securely anchor piles with heavy duty plastic sheeting such that the surface area not covered by the plastic sheeting does not exceed 6,000 square feet would potentially cause numerous interruptions. (Refer to comment #9 also.)*

We assume that work is occurring at an active storage pile and that 6,000 square feet is an adequate area within which to work. To minimize ROC emissions, the remaining contaminated soil must be covered. SCAQMD Rule 1166 requires operators to "spray VOC-contaminated soil stockpiles with water and/or approved vapor suppressant and cover them with plastic sheeting for all periods of inactivity lasting more than one hour" [§(c)(2)(B)]. BAAQMD Regulation 8, Rule 40, requires "contaminated soil shall be kept visibly moist by water spray, treated with a vapor suppressant, or covered with continuous heavy duty plastic sheeting" [8-40-304]. We agree that vapor suppression with water must be done in a way to either minimize or prevent runoff problems. However, we are reluctant to eliminate water as a vapor suppression material. The covering requirements in Subsection B.6 are necessary to minimize ROC emissions into the atmosphere.

4. *Section B.6. and B.7., requires that coverings "be joined at the seams." Please explain the intent of joined at the seams. Materials such as Visqueen, which are commonly used in these types of jobs, cannot be seamed. Cover materials that can be seamed such as Pondliner are cost prohibitive for temporary jobs such as soil aeration.*

"Joined at the seams" means that the sheets must overlap and be secured to prevent the exposure of contaminated soil to the air. It is not necessary to clip, bind, or permanently seam the sheets.

5. *Under Section B.8., if contaminated soil is not removed within 30 days of excavation, on-site treatment must be initiated. We believe that it would be very difficult to meet the 30-day period for soil off-site removal. For example, once it is determined that the soil is contaminated, a sample must be taken to a laboratory for analysis which takes several weeks. Please ensure that the 30-day period is not more stringent than the hazardous waste rule requirement.*

According to Lori Wynd, the hazardous waste rules referenced above appear 40CFR262.34, which allows a hazardous waste "generator" to wait 90 days before disposing of waste placed in containers, tanks, drip pads or containment buildings. This is very different from the requirements of Rule 74.29, which applies to soil containing either gasoline, diesel fuel or jet fuel. Contaminated soil is removed from the area of a leaking tank or piping and stored in piles on the ground. Contamination is easily determined. SCAQMD Rule 1166 also requires treatment or removal of VOC contaminated soil within 30 days [§(c)(2)(F)].

6. *Under Section D, Recordkeeping Requirements, the rule indicates that recordkeeping is required "for any soil <u>decontamination</u> project subject to this rule..." However, in the definitions section there is no definition of "decontamination." Therefore, it is unclear whether records are needed for soil aeration in which ROC level are less than 50 ppm. Please define decontamination.*

Aeration decontaminates soil by evaporation. Aeration is allowed only for situations where the ROC concentration is less than 50 ppmv (Subsection B.1). Recordkeeping is required for all operations subject to the rule.

7. *Section D lists the following recordkeeping requirements as: all dates that soil was disturbed and the quantity of soil disturbed on each date; reasons for excavation of grading; cause of VOC soil contamination and history of the site; description of tanks or piping associated with the soil contamination; description of mitigation measures employed for dust, odors and ROC emissions; details of treatment and/or disposal of ROC contaminated soil, including the ultimate receptor; description of monitoring equipment and techniques; all ROC emission measurements from the strip chart; and a facility map. These requirements seem excessive for a soil aeration job. Can the recordkeeping requirements for aeration be reduced?*

We agree that reduced recordkeeping requirements for soil aeration are appropriate. We propose to require for soil aeration only the information specified in Subsection D.1.

8. *Section F.2. requires the use of an "OVA with a strip chart recorder." Most OVA's do not have strip charts but rather digital readings that are recorded by hand. Would a hand-recording meet with VCAPCD's approval?*

Subsection D.8 requires the use of either a strip chart recorder or "a format approved by the Air Pollution Control Officer." The latter specification can include field notes in an approved format.

9. *Under Section G., Definitions, the definition of "Active Storage Pile," seems to be unnecessarily stringent, particularly for large aeration jobs. Active storage pile is defined as "a storage pile to which soil is currently being added or from which soil is currently being removed. <u>Activity must occur within one hour to be current."</u> We recommend that a more realistic activity period of three to four hours to be used to define "current," rather than the one hour proposed in the rule. A one-hour period does not take into account crew breaks and unforeseen obstacles.*

As noted above, SCAQMD Rule 1166 requires operators to "spray VOC-contaminated soil stockpiles with water and/or approved vapor suppressant and cover them with plastic sheeting for all periods of inactivity lasting more than one hour [§(c)(2)(B)]. BAAQMD Regulation 8, Rule 40, states that "contaminated soil shall be covered during periods of inactivity longer than one hour" [8-40-305]. We are reluctant to deviate from this regulatory standard. In

addition, we believe the one hour threshold will limit ROC emissions from storage piles by minimizing the size of working area.

10. *Under Section G.4., the definition of contaminated is "emitting ROC's in excess of 50 ppmv, as hexane." This definition of contaminated seems to be inconsistent with the definition in 40 CFR Subpart CC: application of air controls for contaminated soils where the threshold is 500 ppmw.*

According to Lori Wynd, the referenced regulations (40 CFR 264.182) apply "to the management of hazardous waste in tanks, surface impoundments, and containers..." Contaminated soil is not mentioned. Gasoline, diesel fuel and jet fuel do not appear to be listed as hazardous waste. In addition, contaminated soil is removed from the area of a leaking tank or piping and stored in piles on the ground. Because these regulations appear to be unrelated, we believe no conflict exists.

Advisory Committee
January 23, 2007

After a staff presentation, the Committee posed questions and discussed the following issues:

- What is the purpose of the 30 day restriction in section B.8? It is inconsistent with hazardous waste laws that allow on-site storage for 180 days. Does section B.8 conflict with the requirements of other government agencies? If emissions are being managed by plastic sheeting, why should there be a time limit? Could the language be revised to say "commence treatment or remove within 30 days?" How is the 30-day limit related to the amount of time it takes to issue an APCD permit? At the end of 30 days, how much of the VOC has already evaporated and how is this related to the 50% assumed control efficiency of the plastic sheeting?

- Why was the 0.08 pound per hour threshold in section B.2 deleted? Was a toxicologist consulted? Why is the 100 ppm limit in section B.2 independent of flow rate?

- Should a definition be added for "heavy duty" plastic sheeting?

- If contaminated soil is removed to comply with the 30-day limit, where is it taken?

- Why does the rule apply only to gasoline, diesel and jet fuel? Why not all VOC-contaminated soil like the SCAQMD rule? How much is emitted from contaminated soil in oilfields? Should they be regulated too?

- Should agricultural sources continue to be exempted?

- The rule seems to apply only to emissions from the storage pile. Can emissions from the excavated hole be controlled while it remains open?

- Does the District issue a permit for the location of the soil, or for the contractor decontaminating the soil? For excavations of un-permitted tanks, is an APCD permit issued to implement the rule?

After discussion , the Committee voted unanimously to direct staff to reconsider all comments and report back with revised rule amendments. The Committee specifically directed staff to reexamine the following issues.

1. Section B.8 requires sources to remove contaminated soil within 30 days. Determine if on-site treatment should be allowed and whether it is possible to have VCAPCD permits in place for such treatment.

2. In (renumbered) Subsection C.2.a, the aeration prohibition does not apply to soil excavation activities provided the exposed soil is covered within one hour of terminating activity. Proposed a definition for "excavation activity."

3. As noted above, Subsection C.2.a says exposed soil must be covered within one hour of terminating activity. Propose a definition for "terminating activity."

4. The rule currently applies to soils containing gasoline, diesel or jet fuel. Explore the feasibility of expanding the rule to apply to soil containing any ROC.

5. Add a definition for "jet fuel" to Section G.

Responses to these comments appear in Appendix C.

Advisory Committee
January 29, 2008

After two staff presentations, a general presentation on the proposed revisions and a second presentation on the issues raised on January 23, 2007, the Committee unanimously recommended the proposed revisions to the Air Pollution Control Board. This included a late revision to Rule 74.29 based on a comment from the Air Resources Board. In 2007, Subsection C.2.f appeared as follows:

2~~3~~. The requirements of Subsection B.1.a shall not apply to:

f. Contaminated ~~To contaminated~~ soil used as daily cover at permitted Class III Solid Waste Disposal Sites if such soils do not have ~~a gasoline~~ an ROC concentration exceeding the limit specifed by the Los Angeles Regional Water Quality Control Board (RWQCB), as determined by RWQCB methods.~~100 parts per million by weight (ppmw) or a diesel fuel concentration exceeding 1,000 ppmw as determined by the method specified in Subsection F.2~~.

Although a representative from the Los Angeles Regional Water Quality Control Board (RWQCB) has stated that "historically, a limit of 100 mg/kg [ppm] for gasoline and/or diesel has been used ... [as a] soil screen level for shallow groundwater sites" such as regional landfills[4], no RWQCB regulation could be located to definitively establish this limit. Therefore, staff has agreed to revise the proposed revision to Subsection C.2.f as follows:

f. Contaminated ~~To contaminated~~ soil used as daily cover at permitted Class III Solid Waste Disposal Sites if such soils do not have a gasoline concentration exceeding 100 parts per million by weight (ppmw) or a diesel fuel concentration exceeding 1,000 ppmw as determined by the method specified in Subsection F.1 ~~F.2~~.

In addition, Subsection F.2 (renumbered F.1), for the calculation of soil contamination, is no longer proposed for deletion.

See Appendix D for an RWQCB chart on allowable contamination levels.

REFERENCES

1. Staff Report - Proposed Rule 74.29, Soil Decontamination Operations, Final, David Martinez, October 10, 1995, page 15

2. *Staff Report for Proposed Amended Rule 1166 – Volatile Organic Compound Emissions From Decontamination of Soil,* Moustafa Elsherif, SCAQMD, April 5, 2001

3. *Staff Report - Proposed Rule 74.29, Soil Decontamination Operations, Final,* David Martinez, October 10, 1995, page 18

4. Telephone and email conversation with Mr. Enrique Casas, Los Angeles Regional Water Quality Control Board, January xx, 2008.

APPENDIX A

1991 VCAPCD Air Quality Management Plan

Appendix H-91, Stationary Source Control Measure Documentation
Further Study Control Measure R-606, Page H-290

R-606, Soil Decontamination Containing ROCs: The purpose of this control measure is to limit ROC emissions from soil contaminated with organic liquids such as gasoline.

The Ventura County APCD does not have a control measure or a specific rule that regulates soil decontamination operations. However, the Ventura County APCD regulates soil decontamination activities through APCD Rule 10, Permits Required. Rule 10 requires that any person conducting activities that may release air contaminants shall apply for and obtain an APCD permit prior to conducting such activities. Permits issued for soil decontamination operations contain conditions to minimize the release of organic compounds to the atmosphere. The conditions are based on the requirements of Bay Area AQMD's Rule 40, Aeration of Contaminated Soil and Removal of Underground Storage Tanks and Rule 47, Air Stripping and Soil Vapor Extraction Operations.

The South Coast AQMD also has a rule that regulates soil decontamination operations. South Coast AQMD Rule 1166, Volatile Organic Compound Emissions from Decontamination of Soil, requires, in part, implementation of contaminated soil mitigation measures that reflect BACT during all decontamination operations. BACT for soil decontamination operations includes, but is not limited to, installation and operation of an underground ROC collection and disposal system, and collection and disposal of the ROC from the excavated soil.

This control measure is being recommended for inclusion in the 1991 Ventura County AQMP as a further study measure pending evaluation of the South Coast and Bay Area AQMD rules to determine applicability to Ventura County.

Consideration Date: 06/30/94
Implementation Date: Not determined
Control Efficiency Estimate: Unknown
Emission Reduction Potential: Unknown
Cost Effectiveness: Unknown

APPENDIX B

SCAQMD Mitigation Plan Requirements
(Rule 1146, May 11, 2001)

VOC Contaminated Soil Mitigation Plans shall be written to minimize VOC emissions to the atmosphere during excavation, grading, handling and treatment of VOC contaminated soil. VOC Contaminated Soil Mitigation Plans shall consist of three types: Various Locations, Site Specific and Facility Treatment.

(1) General Requirements

(A) A plan is not transferable.
(B) A person responsible for the excavation, grading or handling of VOC contaminated soil must be completely familiar with the plan and must adhere to the plan requirement. The APCO may require that the plan be signed by the owner and/or operator.
(C) A plan may be amended upon renewal.
(D) Permission to excavate, grade or handle VOC contaminated soil may be withdrawn by the District upon a finding by the APCO that the excavation, grading or handling of the VOC contaminated soil is causing a public nuisance or violating other District rules or regulations.

(2) Various Location Plans:

(A) Shall be limited to the excavation of 2000 cubic yards or less of VOC contaminated soil in any consecutive 12 month period at the same site.
(B) Shall not be used in conjunction with any other various location plan at the same site within a consecutive 12-month period.
(C) Shall expire after one year from issuance unless renewed.
(D) Shall not be issued for nor used for operations that involve grading, soil treatment or remediation, or landfills.

(3) Site Specific Plans:

(A) Shall be for excavation of greater than 2000 cubic yards of VOC contaminated soil.
(B) Shall be issued for specific excavation or grading locations for a period not to exceed two years.
(C) Shall not be renewable.

(4) Facility Treatment Plans:

(A) Shall be issued for a treatment facility at a permanent location.
(B) Shall expire after one year from issuance unless renewed.

(5) Applications for Site Specific Plans shall contain as a minimum:

(A) Reasons for excavation or grading.
(B) Cause of VOC soil contamination and history of the site.
(C) Description of tanks or piping associated with the soil contamination.
(D) An estimate of the amount of contaminated soil.
(E) The operating schedule for excavation and removal.
(F) Description of how the excavation or grading will be conducted.
(G) Description of mitigation measures for dust, odors and VOC.
(H) Details of disposal of VOC contaminated soil, including the ultimate receptor.
(I) Description of monitoring equipment and techniques.
(J) A map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential areas or other sensitive receptors such as hospitals or locations where children or elderly people live or work.

(K) Designation of a person who can conduct a site inspection with the APCO prior to issuance of the plan.

(6) Applications for Facility Treatment Plans shall at a minimum:

(A) Include a list of all District permits to construct or operate which have been issued for that treatment and control equipment.
(B) Provide for the implementation of VOC-contaminated soil decontamination measures, as approved by the APCO in writing, which result in Best Available Control Technology during all operations.
(C) Provide a map showing the facility layout including the location of all proposed VOC and non-VOC contaminated soil stockpiles.
(D) Specify the total amount of VOC contaminated soil proposed to be stockpiled on site.
(E) Provide for VOC contaminated soil stockpiles to be kept moist with water or suppressant and be covered to prevent fugitive emissions.
(F) Provide for VOC contaminated soil stockpiles to be segregated from non-VOC contaminated soil stockpiles.
(G) Provide for maintenance of records for stockpiles according to the source name, address and dates of reception.
(H) Provide for records of the generator, transporter and storage/treatment facilities and indicate their identification and business addresses. Such records shall be signed by each party at the time custody is transferred.
(I) Provide a map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential area or other sensitive receptors such as hospitals, or locations where children or elderly people live or work.
(J) Designation of a person who can conduct a site inspection with the APCO prior to issuance of the plan.
(K) Specify the operating schedule and maximum amount of VOC contaminated soil proposed to be remediated on a daily basis.

(7) In approving a plan, the APCO require reasonable conditions deemed necessary to ensure the operations comply with the plan and District rules. The conditions may include, but shall not be limited to, procedures for ensuring responsibility for the implementation of the plan, accessibility to the site for District staff, notification of actions required by the plan, identification of emission receptors, monitoring and testing, suppression and covering of stockpiles, prevention of public nuisance from VOC or dust emissions, prevention of fugitive emissions of VOC contaminated soil, loading of truck trailers, and disposal and treatment.

(8) In approving a plan, the APCO may require any records deemed necessary to be maintained by the operator to demonstrate compliance with the plan. Such records shall be retained for at least 2 years and be made available to the APCO upon request.

APPENDIX C

Response to Advisory Committee Issues on January 23, 2007
(October 24, 2007)

DISCUSSION

At the Committee meeting on January 23, 2007, a number of questions were posed and several issues with the proposed rule were discussed. Responses to these questions and issues are discussed below. There is no change to the proposed revisions to Rule 23 and Rule 44.

- *What is the purpose of the 30 day restriction in Subsection B.8?*
  The 12/19/06 version of the proposed rule limited contaminated soil storage at a site to no more than 30 days. Subsection B.8 has been replaced as follows:

  8. If not removed within 30 days of excavation, on-site treatment to remove contamination from contaminated soil at an excavation or grading site shall be initiated. The treatment of contaminated soil shall be subject to all applicable District Rules and Regulations.

  The purpose of the subsection is to reduce ROC emissions by preventing contaminated soil from sitting on the ground for extended periods of time.

  It is inconsistent with hazardous waste laws that allow on-site storage for 180 days.
  Written comments referenced hazardous waste rules in 40CFR262.34, which allows a hazardous waste "generator" to wait 90 days before disposing of waste placed in containers, tanks, drip pads or containment buildings. This is very different from the requirements of Rule 74.29, which applies to soil containing either gasoline, diesel fuel or jet fuel. Contaminated soil is removed from the area of a leaking tank or piping and stored in piles on the ground. Contamination is easily determined. SCAQMD Rule 1166 also requires treatment or removal of VOC contaminated soil within 30 days [§(c)(2)(F)].

  Does section B.8 conflict with the requirements of other government agencies?
  See above.

  If emissions are being managed by plastic sheeting, why should there be a time limit?
  Even properly applied plastic sheeting, in good condition, joined at the seams, and securely anchored, emits some ROC.

  How is the 30-day limit related to the amount of time it takes to issue an APCD permit?
  A Permit to Operate must be in place before treatment to begin. Permits are not typically issued within 30 days. However, as a policy, activity may commence after the District receives a complete permit application.

  At the end of 30 days, how much of the VOC has already evaporated and how is this related to the 50% assumed control efficiency of the plastic sheeting?

We believe our contaminated storage pile estimate of 1.4 tons of ROC per year is a reasonable estimate of emissions from each storage pile. For a 30 day period, an estimated 228 pounds of ROC is emitted (0.114 tons).

- *Why was the 0.08 pound per hour threshold in section B.2 deleted?*
  This threshold is being retained. The threshold is the same as 100 ppmv at 300 scfm.

  Why is the 100 ppm limit in section B.2 independent of flow rate?
  It is not independent of flow rate; a flow of 300 scf is assumed.

- *Should a definition be added for "heavy duty" plastic sheeting?*
  The proposed rule now specifies that sheeting must be 4 mil or greater; see Subsections B.2, B.6 and B.7.

- *If contaminated soil is removed to comply with the 30-day limit, where is it taken?*
  There are at least three alternatives. The most contaminated soil can be taken to a hazardous waste dump. Under certain conditions, contaminated soil can be used for daily cover at a landfill. Additionally, an contaminated soil may be treated offsite.

- *Why does the rule apply only to gasoline, diesel and jet fuel? Why not all VOC-contaminated soil like the SCAQMD rule?*
  The proposed rule continues to apply only to gasoline, diesel and jet fuel. In our analysis of this issue, we discovered that most soil decontamination cases are managed locally by the Ventura County Environmental Health LUFT (Leaking Underground Fuel Tank) program. The LUFT program manual describes oversight jurisdiction as follows:

  > "The LUFT Program is the local oversight program and lead agency that regulates soil and groundwater cases involving releases from USTs that contain gasoline, diesel, waste oil, and other petroleum hydrocarbons within Ventura County. The LUFT Program does not regulate the cleanup of home heating oil or farm tanks with capacities of 1,100 gallons or less, or non-tank sources such as sumps or flow-through clarifiers. The cleanup and closure of sites with home heating oil, farm tanks, or non-tank sources may, however, be locally overseen by the VCEHD's Voluntary Cleanup Program; otherwise, these types of sites will be overseen by another State agency such as the Regional Water Quality Control Board – Los Angeles (RWQCB), the Department of Toxic Substances Control (DTSC), or the Department of Health Services (DHS)."

  Non-petroleum releases are handled by local regional water quality control boards under the SLIC (Spills, Leaks, Investigations, and Cleanups) program, which is described as follows:

  > "Sites in the SLIC program are generally small to medium-sized industrial sites with non-fuel contamination. Many of these sites are regulated under Site Cleanup Requirements, which are issued by the Regional Board. Site Cleanup Requirements generally mandate a time schedule for specific tasks that must be

> performed by the responsible party(ies) to investigate and cleanup the site. The SLIC Program is managed by the Toxics Cleanup Division."

The local regional water quality control boards also work with the Department of Defense (DOD) as follows:

> "Decades of defense activities have degraded water quality on and around federally-owned facilities. Working with other agencies, the Regional Board is involved with remedial investigation and cleanup action [at a number of] U.S. Department of Defense (DOD) sites. Agreements with the DOD provide for accelerated cleanups at military bases and other Defense sites scheduled for closure and reuse. Site investigation and cleanup procedures are consistent with State laws and regulations as well as applicable provisions of CERCLA."

CERCLA is the federal Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund.

The State Water Quality Control Board (SWQCB) keeps a database of all remediation cases statewide, called the LUST database (http://geotracker.swrcb.ca.gov/data/). Based on the above, we assume that LUFT (or LUST, Leaking Underground Storage Tank) cases involve only gasoline, diesel or jet fuel. According to the SWQCB LUST database, more than 90 percent of the remediation cases in Ventura County are LUST cases (see chart below). We also assume that SLIC cases involve only non-petroleum materials, which account for less than 2 percent of all cases in Ventura County. Both DOD and "Local Non-LUST" cases can be either petroleum or non-petroleum.

Program	**Ventura County**		**State-wide**	
	Count	**Percentage**	**Count**	**Percentage**
LUFT/LUST	1373	92.40	39038	87.19
SLIC	26	1.75	1039	2.32
DOD	77	5.18	2290	5.11
Local Non-LUST	10	0.67	2224	4.97
Other	0	0.00	184	0.41
TOTAL	1486	100	44775	100

This data indicates that few contamination sites are non-petroleum. Complicated non-LUFT contamination sites in Ventura County are under the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB). The Water Board typically includes an air monitoring plan in their project requirements. VCAPCD permits reference LARWQCB documents for ROC and toxics air issues on these projects.

There are other reasons for limiting the rule to petroleum-based compounds. Non-petroleum contamination sites tend to be unique; staff believes that District Rule 51, Nuisance, and Rule 36, toxics new source review, are handling these sites on a case-by-case basis. Also, it would be difficult to specify test methods for all compounds that would be covered by an “all ROC” rule; test methods must be specified to establish compliance. Finally, the District does not have the equipment necessary to deal safely with staff

exposure to the toxic compounds that would be subject to Rule 74.29 in an "all ROC" scenario.

How much is emitted from contaminated soil in oilfields? Should they be regulated too?
The Ventura office of the California Division of Oil and Gas has no records of the amount of contaminated soil generated in the oil fields.

- *Should agricultural sources continue to be exempted?*
  As noted above, the LUFT program does not regulate "farm tanks with capacities of 1,100 gallons or less." Without this regulatory framework, enforcement of Rule 74.29 at farm sites will be very difficult.

- *The rule seems to apply only to emissions from the storage pile. Can emissions from the excavated hole be controlled while it remains open?*
  Subsection B.2 covers the excavation of transfer piping and tanks. "Excavation" is defined in Subsection G.10.

- *Does the District issue a permit for the location of the soil, or for the contractor decontaminating the soil? For excavations of un-permitted tanks, is an APCD permit issued to implement the rule?*

  Soil decontamination sites must comply with the provision of Rule 74.29; no Permit to Operate is required. However, a permit is required for on-site treatment; permits are issued for each treatment location.

RESPONSE TO MOTION adopted by the committee on January 23, 2007:

1. *Section B.8 requires sources to remove contaminated soil within 30 days. Determine if on-site treatment should be allowed and whether it is possible to have VCAPCD permits in place for such treatment.*

   Subsection B.8 has been revised to allow onsite treatment of contaminated soil that has not been removed within 30 days, as noted above.

2. *In (renumbered) Subsection C.2.a, the aeration prohibition does not apply to soil excavation activities provided the exposed soil is covered within one hour of terminating activity. The definition of "excavation activity" as it relates to section C.2.a.*

   The 12/19/06 version of the proposed rule included a definition of "Excavation" in Subsection G.10. A definition of "Active Storage Pile" was also included as Subsection G.1 in the 12/19/06 rule; this definition has been changed to a definition of "Active," as follows:

   1. "Active": A worksite to which soil is currently being added or from which soil is currently being removed. Activity must occur within one hour to be current.

3. *Subsection C.2.a says exposed soil must be covered within one hour of terminating activity. Propose a definition of "terminating activity."*

Subsection C.2.a. provides an exemption for certain excavation activities that have been "covered within one hour of terminating the activity." To clarify this subsection, the following is proposed:

a. Soil ~~To soil~~ excavation activities necessary for the removal of in situ soil such as in the removal of an underground storage tank, pipe or piping system, provided the exposed soil is ~~properly~~ covered as specified in Subsection B.7 while inactive ~~within one hour of terminating the activity~~; or

The proposed definition of "Active" noted above establishes when activity is current.

4. *Add a definition of "jet fuel" to Section G.*

A definition of "Jet Fuel" has been added to the proposed rule as Subsection G.14, as follows:

14. "Jet Fuel": A kerosene-based product having a maximum distillation temperature of 400 degrees Fahrenheit at the 10 percent recovery point and a final maximum boiling point of 572 degrees Fahrenheit and meeting the American Society of Testing and Materials Specification D 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8), used for commercial and military turbojet and turboprop aircraft engines.

5. The rule currently applies to soils containing gasoline, diesel or jet fuel. Explore the feasibility of expanding the rule applicability to soil containing any ROC.

See discussion above.

APPENDIX D

Los Angeles Regional Water Quality Control Board Soil Screening Levels
(received January 2X, 2008)

Table 4-1: Maximum Soil Screening Levels (mg/kg) for TPH and BTEX above Drinking Water Aquifers

	Distance Above Groundwater	Carbon Range		
TPH		C4-C12	C13-C22	C23-C32
	>150 feet	1,000	10,000	50,000
	20-150 feet	500	1,000	10,000
	<20 feet	100	100	1,000

	Distance Above Groundwater	Lithology			
BTEX		Gravel	Sand	Silt	Clay
	150 feet	B=0.044 T=2 E=8 X=23	B=0.077 T=4 E=17 X=48	B=0.165 T=9 E=34 X=93	B=0.8 T=43 E=170 X=465
	80 feet	B=0.022 T=1 E=4 X=11	B=0.033 T=2 E=7 X=20	B=0.066 T=4 E=15 X=40	B=0.34 T=18 E=73 X=200
	20 feet	B=0.011 T=0.15 E=0.7 X=1.75	B=0.011 T=0.3 E=0.7 X=1.75	B=0.011 T=0.45 E=2 X=5.3	B=0.044 T=2.3 E=9 X=24.5

- TPH = Total petroleum hydrocarbons.
- BTEX = benzene, toluene, ethylbenzene, and xylenes, respectively. MCLs (ppm): B=0.001, T=0.15, E=0.7, X=1.75.
- MTBE (methyl tertiary butyl ether) must be included in BTEX analyses.
- BTEX screening concentrations determined per the attenuation factor method as described in RWQCB Guidance for VOC Impacted Sites (March 1996), with a natural degradation factor of 11 for benzene. Table values for BTEX can be linearly interpolated between distance above groundwater and are proportional to fraction of each lithological thickness.
- Values in Table 4-1 are for soils above drinking water aquifers. All groundwaters are considered as drinking water resources unless exempted by one of the criteria as defined under SWRCB Resolution 88-63 (TDS>3000 mg/L, or deliverability <200 gal/day, or existing contamination that cannot be reasonably treated). Regional Board staff will make a determination of potential water use at a particular site considering water quality objectives and beneficial uses. For non-drinking water aquifers, regardless of depth, TPH for ">150 feet" category in the table should be used; BTEX screening levels are set at 100 times respective MCLs as preliminary levels determined to be protective of human health and the environment.
- Distance above groundwater must be measured from the highest anticipated water level. Lithology is based on the USCS scale.
- For BTEX, each component is not to exceed the specified screening level.
- For TPH, the total allowable for each carbon range is not to be exceeded. In areas of naturally-occurring hydrocarbons, Regional Board staff will make allowance for TPH levels.
- BTEX to be analyzed by EPA Method 8020 or EPA Method 8260 (usually for confirmation).
- TPH to be analyzed by EPA Methods 418.1 plus 8015 (Modified). Ranges of TPH to be analyzed by GC/MS carbon range methods (EPA Method 8260) or EPA Method 8015 (Modified).