SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Preliminary Draft Staff Report
Proposed Amended Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

GOVERNING BOARD

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BACKGROUND

The South Coast Air Quality Management District (SCAQMD) is the lead air pollution agency in the South Coast Air Basin (SCAB) and has jurisdiction over all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SCAQMD performs inspections of more than 27,000 facilities in the SCAB and Coachella Valley, in addition to responding to thousands of public complaints regarding air quality.

Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants (Rule 1466) minimizes fugitive dust emissions containing arsenic, asbestos, cadmium, hexavalent chromium, lead, mercury, nickel, and polychlorinated biphenyls from sites that meet the rule's applicability requirements by establishing dust control measures that can be implemented during earth-moving activities. Applicable sites are those conducting earth-moving activities where the soil contains applicable toxic air contaminant(s) as determined and designated by the U.S. Environmental Protection Agency (U.S. EPA), California Department of Toxics Substances Control (DTSC), State Water Resources Control Board (State Water Board), or Regional Water Quality Control Board (Regional Water Board). Additionally, Rule 1466 has a provision for the Executive Officer to identify sites, based on a set of criteria, to be subject to the requirements of the rule. The rule establishes a PM_{10} ambient dust concentration limit and dust control measures. Notification to the Executive Officer is required prior to beginning earth-moving activities as well as when ambient PM_{10} dust concentration limits are exceeded. Additional requirements include, recordkeeping and signage. Rule 1466 allows alternative dust control measures, ambient dust concentration limits, signage, and other alternative provisions upon Executive Officer approval.

At the July 2017 Board Hearing, the SCAQMD Governing Board adopted Rule 1466. The adoption Resolution directed staff to return the Governing Board with an amendment for the Board's consideration to expand the list of applicable toxic air contaminants to include pesticides, herbicides, other metals, persistent bio-cumulative toxics, and semi-volatile organic compounds. Proposed Amended Rule 1466 (PAR 1466) expands the list of applicable toxic air contaminants consistent with the adoption Resolution and expands the rule's applicability to other government designated sites. Other amendments to PAR 1466 are provided to clarify existing provisions.

REGULATORY BACKGROUND

SCAQMD's regulatory structure for fugitive dust and particulate matter includes rules that address fugitive dust (Rule 403 – Fugitive Dust); volatile organic compounds (VOCs) contaminated soil (Rule 1166 – Volatile Organic Compound Emissions from Decontamination of Soil); soil containing toxic air contaminant(s) (Rule 1466); and particulate matter and hexavalent chromium emissions from cement manufacturing facilities (Rule 1156 – Further Reductions of Particulate Emissions from Cement Manufacturing Facilities).

Rule 1166

Rule 1166 was adopted on August 5, 1988 and established requirements to control VOC emissions from excavating, grading, handling and treating VOC-contaminated soil as a result of leakages from storage or transfer operations, accidental spillage or other deposition. Although Rule 1166 targets VOC emission reductions, implementation of the rule also results in concurrent reductions in toxic-VOCs such as benzene, toluene, xylene, and ethylbenzene, which are generally associated with petroleum products. The rule includes provisions for mitigation plans to limit VOC

emissions, notification to the SCAQMD, and monitoring requirements; as well as measures to reduce VOC emissions during stockpiling and truck loading. Rule 1166 does not apply to sites with soils containing non-VOC toxics, such as metal toxic particulates and the toxic air contaminants covered under Rule 1466.

Rule 403

Rule 403 was adopted on May 7, 1976 and amended six times. The purpose of Rule 403 is to reduce particulate matter entrained in ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 limits particulate matter concentrations, when monitored, and contains control measures to limit fugitive dust. Rule 403 provides a menu of dust control guidance and options for the operator to select. Additional provisions, including more specific dust control measures, are included for large operations (> 50 acres) and for operations where fugitive dust concentrations exceed performance standards. Many sites with toxic air contaminant(s) in the soil are less than 50 acres, and therefore are not required to implement these additional and more specific dust control measures. Also, ambient dust monitoring is not always required under Rule 403. Even when monitoring is required, the 50 $\mu g/m^3$ PM_{10} ambient dust concentration limit may not be sufficiently health protective for toxic air contaminants.

Rule 1156

Rule 1156 was adopted on November 4, 2005 and established requirements to reduce particulate matter emissions and minimize hexavalent chromium emissions from cement manufacturing operations and properties. The rule includes provisions for visible emissions; material loading, unloading and transferring; cement manufacturing operations; material storage; air pollution control devices; internal roadways and areas; and track-out. Rule 1156 also has provisions for a Compliance Monitoring Plan; hexavalent chromium, PM_{10}, and wind monitoring; and source testing. Additional provisions include Operation and Maintenance procedures; reporting and recordkeeping; and requirements after facility closure. Rule 1156 is only applicable to cement manufacturing facilities, only addresses hexavalent chromium, and does not apply to all earth-moving activities.

PUBLIC PROCESS

Development of PAR 1466 is a public process. SCAQMD has held two working group meetings at the SCAQMD Headquarters in Diamond Bar on August 3, 2017 and September 12, 2017. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. The purpose of the working group meetings is to discuss proposed concepts and work through the details of staff's proposal. The Public Workshop is scheduled on September 19, 2017.

PROPOSED AMENDED RULE 1466

PAR 1466 includes provisions to expand the applicability to other government designated sites, expand the list of applicable toxic air contaminants, and clarify existing provisions.

Applicability (Subdivision (b))

Effective January 1, 2018, PAR 1466 expands the applicability of the rule to include the owner or operator of Hazardous Material Release Sites that have been designated and notified by county, local, or state regulatory agencies pursuant to Health and Safety Code section 25260. According

to Health and Safety Code 25260, "'hazardous materials release site' or 'site' means any area, location, or facility where a hazardous material has been released or threatens to be released into the environment. 'Hazardous materials release site' does not include a site subject to a response and cleanup operation under Chapter 7.4 (commencing with Section 8670.1) of Division 1 of Title 2 of the Government Code or a corrective action under Part 6 (commencing with Section 46000) of Division 30 of the Public Resources Code." Health and Safety Code 25261-25263 and 25265 defines "Site Designation Committee" and authorizes the committee, at the request of the responsible party for a hazardous materials release site, to designate an administering agency to oversee the site's investigation and remedial action. County, local, and state regulatory agencies include agencies such as environmental health departments, planning departments, fire departments, and public health offices and have the jurisdiction to supervise, oversee, or approve a site investigation and remedial action at a hazardous materials release site. Concern by stakeholders was raised that sites may avoid Rule 1466 by selecting a county, local, or regulatory agency to oversee a clean-up rather than selecting the U.S. EPA, DTSC, State Water Board, or Regional Water Board. Therefore, expanding the rule's applicability will ensure that earth-moving activities at these sites requiring clean-up of soil with applicable toxic air contaminants will also be applicable to Rule 1466.

Definitions (Subdivision (c))

The definition for Applicable Toxic Air Contaminants is removed and incorporated into the definition of Soil with Applicable Toxic Air Contaminant(s). Additionally, in order to be consistent with subdivision (b), the definition for Soil with Applicable Toxic Air Contaminant(s) includes soil that has been identified by a county, local, or state regulatory agency. The list of applicable toxic air contaminants for sites designated by the U.S. EPA, the DTSC, the State Water Board, the Regional Water Board or a county, local or state regulatory agency has been expanded and is listed in Table I. Effective January 1, 2018, the list of applicable toxic air contaminants for sites designated by the Executive Officer has been expanded to include any toxic air contaminant listed in SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants, Table I or the California Code of Regulations, Section 93001. The applicable toxic air contaminants for sites designated by other regulatory agencies, include those that are commonly found at contaminated sites above background levels and have negative health effects. The list of applicable toxic air contaminants for sites designated by the Executive Officer is much broader and includes all toxic air contaminants identified in SCAQMD Rule 1401 and California Code of Regulations, Section 93001 (see Appendix 1). Both references for toxic air contaminants are included because each list on its own does not include all the categories required by the adoption Resolution. Rule 1401 includes 11 dioxins, whereas Section 93001 of the California Code of Regulations only has one. With respect to metals, Section 93001 includes cobalt compounds and Rule 1401 does not. Section 93001 includes polycyclic organic matter with more than one benzene ring and a boiling point of equal to or greater than 100 degrees Celsius, while Rule 1401 specifies certain polycyclic aromatic hydrocarbons (PAHs). Rule 1401 does not include any pesticides, whereas Section 93001 includes several. Referencing both Rule 1401 and Section 93001 allows the Executive Officer to identify unique sites that contain hazardous materials that are not the common substances listed in PAR 1466 Table I.

Table I, Applicable Toxic Air Contaminants

To be consistent with SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants, Table I, Toxic Air Contaminants, the following changes were made to the current list of applicable toxic air contaminants:

- Arsenic is now listed as arsenic and arsenic compounds (inorganic), including, but not limited to: arsenic compounds (inorganic) and arsine.
- Cadmium is listed as cadmium and cadmium compounds.
- Hexavalent chromium is listed as chromium (hexavalent) and chromium compounds, including, but not limited to: barium chromate, calcium chromate, lead chromate, sodium dichromate, strontium chromate, and zinc chromate.
- Lead is listed as lead and lead compounds (inorganic, including elemental lead), including, but not limited to: lead compounds (inorganic), lead acetate, lead chromate, lead phosphate, and lead subacetate.
- Mercury is listed as mercury and mercury compounds (inorganic), including, but not limited to: mercuric chloride and methyl mercury.
- Nickel is listed as nickel and nickel compound, including, but not limited to: nickel acetate, nickel carbonate, nickel carbonyl, nickel hydroxide, nickel oxide, nickel subsulfide, nickelocene, and refinery dust from the pyrometallurgical process.
- Polychlorinated biphenyls is now listed as polychlorinated biphenyls (PCBs); 3,3',4,4' tetrachlorobiphenyl; 3,4,4',5 tetrachlorobiphenyl; 2,3,3',4,4' pentachlorobiphenyl; 2,3,4,4',5 pentachlorobiphenyl; 2,3',4,4',5 pentachlorobiphenyl; 2',3,4,4',5 pentachlorobiphenyl; 3,3',4,4',5 pentachlorobiphenyl; 2,3,3',4,4',5 hexachlorobiphenyl; 2,3,3',4,4',5' hexachlorobiphenyl; 2,3',4,4',5,5' hexachlorobiphenyl; 3,3',4,4',5,5' hexachlorobiphenyl; and 2,3,3'4,4',5,5' heptachlorobiphenyl.

The adoption Resolution directed staff to expand the list of applicable toxic air contaminants to include pesticides, herbicides, other metals, persistent bio-cumulative toxics, and semi-volatile organic compounds. Staff reviewed these categories and selected the compounds from each category that were commonly found at contaminated sites above background levels. The pesticides and herbicides that staff selected are chlordane and the dichlorodiphenyltrichloroethane (DDT) family of compounds. Staff did not include other metals because the original list of applicable toxic air contaminants covered the commonly found metals. Staff reviewed two years of data regarding clean-up projects and only found one site that would not be applicable to Rule 1466 because the site's contaminant of concern was zinc. Dioxins were included to cover the category of bio-cumulative toxics. Staff did not include any semi-volatile organic compounds because those would fall under Rule 1166.

The following substances were added:

- Dioxins. These are classified as persistent organic pollutants because they are extremely resistant to environmental degradation. Dioxins are highly toxic and have been linked to cancer, developmental problems in children, reproductive and infertility problems in adults, miscarriages, damage to the immune system, and interference with hormones. For consistency, PAR 1466 lists the same dioxins as in Rule 1401, referring to them as dibenzo-p-dioxins (chlorinated), including: 2,3,7,8-tetrachlorodibenzo-p-dioxin; 1,2,3,7,8-pentachlorodibenzo-p-dioxin; 1,2,3,4,7,8-hexachlorodibenzo-p-dioxin; 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin; 1,2,3,7,8,9-hexachlorodibenzo-p-dioxin; 1,2,3,4,6,7,8-

heptachlorodibenzo-p-dioxin; 1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin; total tetrachlorodibenzo-p-dioxin; total pentachlorodibenzo-p-dioxin; total hexachlorodibenzo-p-dioxin; and total heptachlorodibenzo-p-dioxin.

- Pesticides. Depending on the pesticide, exposure can cause a variety of adverse health effects ranging from irritation of the skin and eyes to more severe effects such as causing cancer, reproductive and developmental problems, and endocrine disruption. PAR 1466 Table I includes the pesticides that are commonly found at contaminated sites above background levels that have negative health effects. The pesticides are: chlordane, dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyldichloroethane (DDD). In general, when a less commonly found pesticide is identified, it generally occurs with one of these four pesticides.
- Polycyclic Aromatic Hydrocarbons (PAHs). Exposure to PAHs is linked to cancer, cardiovascular disease, and poor fetal development. The PAHs included in PAR 1466 are the ones with the highest risk factor and include: benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, and indeno[1,2,3-c,d]pyrene.

Monitoring Requirements (Subdivision (d))

Rule 1466 Appendix 1 provides the alternative PM_{10} monitor requirements. Currently, the performance standard for resolution is 0.1 µg/m^3. PAR 1466 proposes to change the resolution to 1.0 µg/m^3. Increasing the resolution from 0.1 to 1.0 µg/m^3 will increase the number of monitors that could be approved, but will not affect the quality of the data.

Requirements to Minimize Fugitive Dust Emissions (Subdivision (e))

Subparagraph (e)(3)(C) is the track-out provision that prohibits track-out from extending more than 25 feet from the property line and all track-out must be removed using a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles. To be consistent with and as stringent as Rule 403, PAR 1466 changes the provision to not allow track-out to extend beyond 25 feet in cumulative length from the point of origin from an active operation. For clarification, subparagraph (e)(5)(D), replaces the term “freeboard” with “between the soil and the top of the truck bed” in the requirement to maintain at least six inches of space between the soil and the top of the truck while transporting within a site.

Notification Requirements (Subdivision (f))

For the notification of intent to conduct earth-moving activities, subparagraph (f)(1)(G) requires the notification to include a description of the earth-moving activities and a schedule that includes the anticipated start and completion dates of earth-moving activities. PAR 1466 adds a requirement to include the estimated volume of soil with applicable toxic air contaminant(s). Knowing the volume of soil with applicable toxic air contaminant(s) will allow staff to know the extent of the earth-moving activities.

In order to clarify the notification provisions and be consistent with Rule 403, PAR 1466 includes provisions to specify when a notification needs to be updated. Additionally, notifying SCAQMD of the changes allows compliance personnel to be present, if necessary, and ensures that the requirements of the rule are being followed. PAR 1466 proposes that notifications must be updated when there is a change in the start date of any earth-moving activity. If the starting date is changed

to an earlier date, the change must be reported to the SCAQMD at least 72 hours before any earth-moving activities begin. If the starting date is changed to a later date, the change must be reported to the SCAQMD as the information becomes available, but before the original start date.

Executive Officer Designated Sites (Subdivision (i))

Currently, in order to determine whether or not a site is applicable to Rule 1466, the Executive Officer, with evidence that a site contains soil with applicable toxic air contaminant(s), will consult with U.S. EPA, DTSC, the State or Regional Water Boards, and/or local or state health agencies, and based on criteria specified in the rule. In order to be consistent with the new applicability, PAR 1466 adds that the Executive Officer will also consult with local, county, or state regulatory agencies. Additionally, PAR 1466 allows the Executive Officer to consider a site's history, which includes current and previous operation(s) and use(s) and regulatory history, when making a determination. Site history will also be required to substantiate the request for an alternative PM_{10} limit pursuant to subparagraph (d)(2)(A) and a specific provision exemption pursuant to paragraph (k)(1).

Exemptions (Subdivision (k))

The exemption in paragraph (k)(1) allows the designating agency, in consultation with the Executive Officer, to exempt a site from one or more provisions in the rule. To be consistent with subdivision (b), PAR 1466 includes county, local, and state regulatory agencies as a designating agency with this authority.

Paragraph (k)(2) exempts earth-moving activities performed within enclosures vented to approved air pollution control equipment from certain provisions of Rule 1466. One of those exemptions is from subdivision (f), notification requirements; PAR 1466 proposes to remove this. These sites are still applicable to Rule 1466 and notification allows compliance personnel to be present, if necessary, to ensure the requirements are being followed.

Paragraph (k)(3) exempts linear trenching for sewer projects that directly load soil with applicable toxic air contaminant(s) into a truck or bin for transport from certain provisions of Rule 1466. PAR 1466 proposes to include linear trenching for water projects, which is very similar to linear trenching for sewer projects. Fugitive dust emissions will not be significant since activities in one area will have a short timeframe and the soil will be directly loaded into a truck or bin for transport. Linear trenching for water projects on roadways that directly load soil with applicable toxic air contaminant(s) into trucks or bin for transport, shall be exempt from all requirements except:

- Paragraph (e)(2), adequately wet soil
- Paragraph (e)(3), vehicles
- Paragraph (e)(4), stockpiles
- Paragraphs (e)(5) and (e)(6), truck loading and unloading
- Paragraph (e)(7), spilled soil
- Paragraph (e)(8), wind speed
- Paragraph (e)(11), schools, early education centers, and joint use agreement properties
- Subdivision (f), notification requirements
- Subdivision (h), recordkeeping requirements
- Subdivision (i), Executive Officer designated sites

POTENTIALLY IMPACTED SITES

A review of notifications of hazardous site cleanup actions by responsible regulatory agencies between 2015 and 2016 indicate approximately 20-26 sites would have been subject to PAR 1466 had it been in place during that two-year time period. Based on the original list of eight applicable toxic air contaminants, staff estimated that approximately 8 - 9 sites per year would be impacted. PAR 1466's additional applicable toxic air contaminants will increase the number of affected sites by approximately 2-4 sites per year.

SOCIOECONOMIC ASSESSMENT

A socioeconomic analysis will be conducted and released for public review and comment at least 30 days prior to the SCAQMD Governing Board Hearing on PAR 1466, which is anticipated to be heard on December 1, 2017.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) requires that all potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented, if feasible. The purpose of the CEQA process is to inform the SCAQMD Governing Board, public agencies, and interested parties of potential adverse environmental impacts that could result from implementing the proposed project and to identify feasible mitigation measures or alternatives, when an impact is significant.

Public Resources Code Section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of a negative declaration or environmental impact report once the secretary of the resources agency has certified the regulatory program. The SCAQMD's regulatory program was certified by the secretary of resources agency on March 1, 1989, and has been adopted as SCAQMD Rule 110 – Rule Adoption Procedures to Assure Protection and Enhancement of the Environment. Pursuant to Rule 110 (the rule which implements the SCAQMD's certified regulatory program), the SCAQMD typically prepares an Environmental Assessment (EA) to evaluate the environmental impacts for rule projects proposed for adoption or amendment.

PAR 1466 is considered a "project" as defined by CEQA. Analysis of PAR 1466 indicates that more toxic air contaminants are proposed to be added to the list of applicable toxic air contaminants without substantially revising the existing requirements that were included in Rule 1466 as adopted in July 2017. As such, SCAQMD staff has determined that PAR 1466 contains new information of substantial importance which was not known and could not have been known at the time the Final EA was certified for the adoption of Rule 1466 in July 2017 (referred to herein as the July 2017 Final EA). However, PAR 1466 is not expected to create new significant effects that were not discussed in the previous July 2017 Final EA. Thus, analysis of the proposed project indicates that the type of CEQA document appropriate for the proposed project is a Subsequent Environmental Assessment (SEA), in lieu of an EA. The SEA is a substitute CEQA document, prepared in lieu of a Subsequent Negative Declaration with no significant impacts (CEQA Guidelines Section 15162(b)), pursuant to the SCAQMD's Certified Regulatory Program (CEQA Guidelines Section 15251(l); codified in SCAQMD Rule 110). The SEA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers and the

general public with information on the environmental impacts of the proposed project; and 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

Thus, the SCAQMD, as lead agency for the proposed project, will be preparing a Draft SEA pursuant to its Certified Regulatory Program. Because PAR 1466 is not expected to have statewide, regional, or areawide significance, a CEQA scoping meeting is not required to be held for the proposed project pursuant to Public Resources Code Section 21083.9(a)(2). Further, since no significant adverse impacts have been identified, an alternatives analysis and mitigation measures are not required (CEQA Guidelines Section 15252(a)(2)(B)). The Draft SEA, upon completion, will be released for a 30-day public review and comment period. All comments received during the public comment period on the analysis presented in the Draft SEA will be responded to and included in an appendix to the Final SEA.

Prior to making a decision on the adoption of PAR 1466, the SCAQMD Governing Board must review and certify the Final SEA, including responses to comments, as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PAR 1466.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing, and in the staff report.

Necessity

Proposed Amended Rule 1466 is needed to expand the list of applicable toxic air contaminants to include pesticides, herbicides, other metals, persistent bio-cumulative toxics, and semi-volatile organic compounds and clarify existing provisions.

Authority

The SCAQMD Governing Board has authority to adopt amendments to Rule 1466 pursuant to the California Health and Safety Code Sections 39002, 39650 et. seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, 41511, 41700, and 41706.

Clarity

Proposed Amended Rule 1466 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

Proposed Amended Rule 1466 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations.

Non-Duplication

Proposed Amended Rule 1466 will not impose the same requirements as any existing state or federal regulations. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD. SCAQMD Rule 403 has some similar provisions but there is minimal overlap between the two rules for applicable sites. Where there is overlap, the provisions in Proposed Amended Rule 1466 supersede those in Rule 403.

Reference

By adopting Proposed Amended Rule 1466, the SCAQMD Governing Board will be implementing, interpreting or making specific the provisions of the California Health and Safety Code Section 41700 (nuisance), and Federal Clean Air Act Section 112 (Hazardous Air Pollutants), and Section 116 (Retention of State authority).

Rule Adoption Relative to Cost-Effectiveness

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether rules being proposed for amendment are considered in the order of cost-effectiveness. The 2016 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the control measures for which costs were quantified. It is generally recommended that the most cost-effective actions be taken first. Although TXM-04 is a control measure that was included in the 2016 AQMP, Proposed Amended Rule 1466 was included in the 2016 AQMP as a toxic control measure and was not ranked relative to other criteria pollutant control measures in the 2016 AQMP.

Incremental Cost-effectiveness

Health and Safety Code Section 40920.6 requires an incremental cost effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments, relative to ozone, carbon monoxide, sulphur oxides, oxides of nitrogen, and their precursors. Since Proposed Amended Rule 1466 is a toxic rule that is designed to reduce toxic air contaminants, the incremental cost effectiveness analysis requirement does not apply.

COMPARATIVE ANALYSIS

Health and Safety Code section 40727.2 requires a comparative analysis of the proposed amended rule with any Federal or District rules and regulations applicable to the same source.

	Proposed Amended Rule 1466	Rule 403	Rule 1166	Rule 1157	Rule 1403	Rule 1156
Purpose	Control fugitive toxic air contaminant emissions during earth-moving activities	Reduce anthropogenic fugitive dust	Control of VOC emissions (including toxic VOCs) from earth-moving activities	Control PM_{10} emissions from aggregate activities	Limit asbestos emissions	Reduce particulate matter and hexavalent chromium emissions
Applicability	Designated cleanup sites with specified toxic air contaminants; Executive Officer designated cleanup sites based on a set of criteria	Any activity or anthropogenic condition capable of generating dust	VOC contaminated soils	Sand, gravel, quarried rock operations	Building demolition and renovation activities	Cement manufacturing operations and the property
Monitoring	Two-hour 25 $\mu g/m^3$ differential limit for PM_{10} emission; Meteorological monitoring	If monitored, five-hour 50 $\mu g/m^3$ differential limit for PM_{10} emission	Fifteen minute monitoring of VOC emissions	None	None	Hexavalent chromium monitoring, wind monitoring, and PM_{10} monitoring if owner/operator accrues three or more notices of violation for Rule 403 exceedance within 36-month period
General Controls	Perimeter fencing and windscreen	Perimeter fencing and windscreen	None	None	Removal procedures	None
	Application of dust suppressants during earth-moving activities	Adequately wet during earth-moving activities	None	None	Handling procedures	Application of dust suppressants
	Cease earth-moving operations during high wind conditions	During high wind conditions some requirements do not apply	None	None	None	Cease open handling of clinker material during high wind conditions

	Proposed Amended Rule 1466	Rule 403	Rule 1166	Rule 1157	Rule 1403	Rule 1156
	Onsite compliance supervisor	Onsite compliance supervisor (large sites only)	None	None	Onsite compliance supervisor	None
	Earth-moving not allowed during hours of operation or facility-sponsored activities when conducted on school, early education center, or joint use agreement properties	None	None	None	None	None
Vehicle Controls	Vehicle speed limit	Vehicle speed limit (large sites only)	None	Vehicle speed limit	Vehicle marking	Vehicle speed limit
	Stabilize road and parking surfaces	Stabilize road and parking surfaces	None	Stabilize road and parking surfaces	None	Stabilize or apply gravel pad to roads
	Clean departing vehicles	None	None	None	None	Truck cleaning on site
	Limited track out	Limited track out	None	Limited track out	None	No track out
	Vehicle egress	Vehicle egress	None	Vehicle egress	None	Vehicle egress
	No internal paved road sweeping provision	None	None	None	None	Sweep internal paved roads
Stockpile Controls	Limited size	None	None	Limited size	Leak-tight containers	None
	Adequately wet or chemically stabilized	Adequately wet or chemically stabilized	Adequately wet or chemically stabilized	Adequately wet or chemically stabilized	None	Apply chemical dust suppressant
	Covered during inactivity	None	Covered during inactivity	Apply chemical stabilizer during inactivity	None	Covered
	Daily inspection	None	Daily inspection	None	None	Records of status of inactive clinker stockpiles
	Segregate	None	Segregate	None	None	None
	Limited at schools, early education centers and joint use agreement properties	None	None	None	None	None

	Proposed Amended Rule 1466	Rule 403	Rule 1166	Rule 1157	Rule 1403	Rule 1156
	No freeboard requirement	None	None	None	None	Freeboard requirements
	No wind fence	None	None	None	None	Wind fence
Loading, Unloading and Transferring Controls	Adequately wet	Adequately wet	None	None	None	Apply dust suppressants as necessary
	Loading techniques	Loading techniques	None	None	None	Minimize height of drop
	Cover loads	Cover loads (contingency only)	Cover loads	None	None	Close cement truck hatches
	No requirement for enclosed system	None	None	None	None	Conducted in enclosed system that is vented to SCAQMD permitted air pollution control device
	No requirement for enclosed conveying systems and transfer points	None	None	None	None	Cover or enclose all conveying systems and enclose all transfer points
	No requirement for belt conveying system	None	None	None	None	Dust curtains, shrouds, belt scrapers, and gaskets along belt conveying system
Notification	Prior to commencing earth-moving activities	Prior to commencing earth-moving activities (large sites only)	Prior to commencing earth-moving activities	None	Prior to commencing asbestos handling	None
	Exceedances of hourly PM_{10} limit	None	None	None	Changes in quantity or schedule	Exceedance of hexavalent chromium, failing source testing compliance limits
	No advisory flyer requirement	None	None	None	None	Fugitive Dust Advisory flyer
Signage	Entrances and along perimeter	Entrances and along perimeter (large sites only)	None	None	Entrances and along perimeter	None

	Proposed Amended Rule 1466	Rule 403	Rule 1166	Rule 1157	Rule 1403	Rule 1156
Recordkeeping	Monitoring results, dust control actions taken, stockpile inspections, volume of soil removed, transport information, complaints	Dust control actions taken (large sites only)	VOC concentration readings; stockpile inspections, transport information	Dust control actions, transport information	Control actions, survey data, notifications, training information, transport information	Dust control and cleaning activities, operation and production records, test reports, equipment records, material handling, monitoring data, maintenance activities, clinker pile reclamation, vehicle traffic

REFERENCES

Air Monitoring Methods - Criteria Pollutants, U.S. EPA, https://www3.epa.gov/ttn/amtic/criteria.html, accessed May 31, 2017

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CAS Number	California Code of Regulations 93001[1]	SCAQMD Rule 1401
75-07-0	Acetaldehyde	acetaldehyde
60-35-5	Acetamide	acetamide
75-05-8	Acetonitrile	
98-86-2	Acetophenone	
53-96-3	2-Acetylaminofluorene	
107-02-8	Acrolein	acrolein
79-06-1	Acrylamide	acrylamide (or propenamide)
79-10-7	Acrylic acid	acrylic acid
107-13-1	Acrylonitrile	acrylonitrile (or vinyl cyanide)
107-05-1	Allyl chloride	allyl chloride
117-79-3		aminoanthraquinone, 2-
7664-41-7		ammonia
92-67-1	4-Aminobiphenyl	
62-53-3	Aniline	aniline
90-04-0	o-Anisidine	
1332-21-4	Asbestos	asbestos
71-43-2	Benzene (including benzene from gasoline)	benzene (including benzene from gasoline)
92-87-5	Benzidine	benzidine (and its salts)
98-07-7	Benzotrichloride	
100-44-7	Benzyl chloride	benzyl chloride
92-52-4	Biphenyl	
117-81-7	Bis (2-ethylhexyl) phthalate (DEHP)	bis(2-ethylhexyl)phthalate (DEHP)
542-88-1	Bis (chloromethyl) ether	bis(chloromethyl)ether
7789-30-2		bromine pentafluoride
75-25-2	Bromoform	
106-99-0	1,3-Butadiene	butadiene, 1,3-
156-62-7	Calcium cyanamide	
105-60-2	Caprolactam	caprolactum
133-06-2	Captan	
63-25-2	Carbaryl	
75-15-0	Carbon disulfide	carbon disulfide
56-23-5	Carbon tetrachloride	carbon tetrachloride (or tetrachloromethane)
463-58-1	Carbonyl sulfide	carbonyl sulfide
120-80-9	Catechol	
133-90-4	Chloramben	
12789-03-6	Chlordane	
7782-50-5	Chlorine	chlorine
10049-04-4		chlorine dioxide

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CAS Number	California Code of Regulations 93001[1]	SCAQMD Rule 1401
79-11-8	Chloroacetic acid	
532-27-4	2-Chloroacetophenone	
108-90-7	Chlorobenzene	chlorobenzene
510-15-6	Chlorobenzilate	
		chlorofluorocarbons
75-43-4		dichlorodifluoromethane (CFC-12)
75-69-4		trichlorofluoromethane (CFC-11)
76-13-1		trichlorotrifluoroethane (CFC-113)
67-66-3	Chloroform	chloroform (trichloromethane)
95-83-0		chloro-o-phenylenediamine, 4-
95-69-2		chloro-o-toluidine, p-
107-30-2	Chloromethyl methyl ether	
		Chlorophenols
95-57-8		chlorophenol, 2-
87-86-5		pentachlorophenol
76-06-2		chloropicrin
126-99-8	Chloroprene	chloroprene
120-71-8		cresidine, p-
1319-77-3	Cresols/Cresylic acid (isomers and mixture)	**cresols/cresylic acid (all isomers and mixture)**
95-48-7	o-Cresol	cresol, o-
108-39-4	m-Cresol	cresol, m-
106-44-5	p-Cresol	cresol, p-
98-82-8	Cumene	
135-20-6		cupferron
94-75-7	2,4-D, salts and esters	
72-55-9	DDE	
		dialkylnitrosamines
924-16-3		nitrosodi-n-butylamine, n-
621-64-7		nitrosodi-n-propylamine, n-
55-18-5		nitrosodiethylamine, n-
10595-95-6		nitrosomethylethylamine, n-
615-05-4		diaminoanisole, 2,4- (sulfate)
334-88-3	Diazomethane	
132-64-9	Dibenzofurans	**dibenzofurans (chlorinated)**
5120-73-19		tetrachlorodibenzofuran, 2,3,7,8-
57117-41-6		pentachlorodibenzofuran, 1,2,3,7,8-
57117-31-4		pentachlorodibenzofuran, 2,3,4,7,8-

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CAS Number	California Code of Regulations 93001[1]	SCAQMD Rule 1401
70648-26-9		hexachlorodibenzofuran, 1,2,3,4,7,8-
57117-44-9		hexachlorodibenzofuran, 1,2,3,6,7,8-
72918-21-9		hexachlorodibenzofuran, 1,2,3,7,8,9-
60851-34-5		hexachlorodibenzofuran, 2,3,4,6,7,8-
67562-39-4		heptachlorodibenzofuran, 1,2,3,4,6,7,8-
55673-89-7		heptachlorodibenzofuran, 1,2,3,4,7,8,9-
39001-02-0		octachlorodibenzofuran, 1,2,3,4,5,6,7,8
55722-27-5		total tetrachlorodibenzofuran
30402-15-4		total pentachlorodibenzofuran
55684-94-1		total hexachlorodibenzofuran
38998-75-3		total heptachlorodibenzofuran
		dibenzo-p-dioxins (chlorinated)
1746-01-6		tetrachlorodibenzo-p-dioxin, 2,3,7,8-
40321-76-4		pentachlorodibenzo-p-dioxin, 1,2,3,7,8-
39227-28-6		hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-
57653-85-7		hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-
19408-74-3		hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-
35822-46-9		heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-
3268-87-9		octachlorodibenzo-p-dioxin, 1,2,3,4, 6,7,8,9-
41903-57-5		total tetrachlorodibenzo-p-dioxin
36088-22-9		total pentachlorodibenzo-p-dioxin
34465-46-8		total hexachlorodibenzo-p-dioxin
37871-00-4		total heptachlorodibenzo-p-dioxin
		total dioxins, with individual isomers reported
		total dioxins, without individual isomers reported
96-12-8	1,2-Dibromo-3-chloropropane	dibromo-3-chloropropane, 1,2- (DBCP)
84-74-2	Dibutylphthalate	
106-46-7	1,4-Dichlorobenzene (p)	dichlorobenzene, 1,4- (or p-dichlorobenzene)
91-94-1	3,3-Dichlorobenzidene	dichlorobenzidine, 3,3
111-44-4	Dichloroethyl ether (Bis (2-chloroethyl) ether)	bis(2-chloroethyl)ether (DCEE)
542-75-6	1,3-Dichloropropene	
62-73-7	Dichlorvos	
9901 (emittant ID)		diesel PM – diesel particulate matter from diesel-fueled internal combustion engine exhaust
111-42-2	Diethanolamine	
91-66-7	N.N-Diethyl aniline (N.N-Dimethylaniline)	
64-67-5	Diethyl sulfate	
119-90-4	3,3-Dimethoxybenzidine	

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CAS Number	California Code of Regulations 93001[1]	SCAQMD Rule 1401
60-11-7	Dimethyl aminoazobenzene	dimethylaminoazobenzene, p-
119-93-7	3,3-Dimethyl benzidine	
79-44-7	Dimethyl carbamoyl chloride	
68-12-2	Dimethyl formamide	dimethylformamide (N,N-)
57-14-7	1,1-Dimethyl hydrazine	
131-11-3	Dimethyl phthalate	
77-78-1	Dimethyl sulfate	
534-52-1	4,6-Dinitro-o-cresol, and salts	
51-28-5	2,4-Dinitrophenol	
121-14-2	2,4-Dinitrotoluene	dinitrotoluene, 2,4-
123-91-1	1,4-Dioxane (1,4-Diethyleneoxide)	dioxane, 1,4- (or 1,4-diethylene dioxide)
122-66-7	1,2-Diphenylhydrazine	hydrazobenzene (or 1,2-diphenylhydrazine)
106-89-8	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	epichlorohydrin (or 1-chloro-2,3-epoxypropane)
106-88-7	1,2-Epoxybutane	epoxybutane,1,2-
140-88-5	Ethyl acrylate	ethyl acrylate
100-41-4	Ethyl benzene	ethyl benzene
51-79-6	Ethyl carbamate (Urethane)	urethane (or ethyl carbamate)
75-00-3	Ethyl chloride (Chloroethane)	ethyl chloride (or chloroethane)
106-93-4	Ethylene dibromide (Dibromoethane)	ethylene dibromide (or 1,2-dibromoethane)
107-06-2	Ethylene dichloride (1,2-Dichloroethane)	ethylene dichloride (or 1,2-dichloroethane)
107-21-1	Ethylene glycol	
151-56-4	Ethylene imine (Aziridine)	
75-21-8	Ethylene oxide	ethylene oxide (or 1,2-epoxyethane)
96-45-7	Ethylene thiourea	ethylene thiourea
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	dichloroethane, 1,1-
1101		Fluorides (except hydrogen fluoride, listed separately)
50-00-0	Formaldehyde	formaldehyde
		gasoline vapors
111-30-8		glutaraldehyde
76-44-8	Heptachlor	
118-74-1	Hexachlorobenzene	hexachlorobenzene
87-68-3	Hexachlorobutadiene	
608-73-1 319-85-6 319-85-7		**hexachlorocyclohexanes (mixed or technical grade)** hexachlorocyclohexane, alpha hexachlorocyclohexane, beta
77-47-4	Hexachlorocyclopentadiene	hexachlorocyclopentadiene
67-72-1	Hexachloroethane	

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CAS Number	California Code of Regulations 93001[1]	SCAQMD Rule 1401
822-06-0	Hexamethylene-1,6-diisocyanate	
680-31-9	Hexamethylphosphoramide	
110-54-3	Hexane	hexane
302-01-2	Hydrazine	hydrazine
10035-10-6		hydrogen bromide (HBR)
74-90-8		hydrogen cyanide
7783-07-5		hydrogen selenide
7783-06-4		hydrogen sulfide
7647-01-0	Hydrochloric acid	hydrochloric acid (or hydrogen chloride)
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)	hydrofluoric acid (or hydrogen fluoride)
123-31-9	Hydroquinone	
78-59-1	Isophorone	isophrone
67-63-0		isopropyl alcohol
58-89-9	Lindane (all isomers)	hexachlorocyclohexane, gamma- (lindane)
108-31-6	Maleic anhydride	maleic anhydride
67-56-1	Methanol	methanol (methyl alcohol)
72-43-5	Methoxychlor	
74-83-9	Methyl bromide (Bromomethane)	methyl bromide (or bromomethane)
74-87-3	Methyl chloride (Chloromethane)	
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	methyl chloroform (or 1,1,1-trichloroethane)
78-93-3	Methyl ethyl ketone (2-Butanone)	methyl ethyl ketone
60-34-4	Methyl hydrazine	
74-88-4	Methyl iodide (Iodomethane)	
108-10-1	Methyl isobutyl ketone (Hexone)	
624-83-9	Methyl isocyanate	methyl isocyanate
80-62-6	Methyl methacrylate	methyl methacrylate
1634-04-4	Methyl tert butyl ether	methyl tert-butyl ether
101-14-4	4,4-Methylene bis(2-chloroaniline)	methylene bis(2-chloroaniline), 4,4- (MOCA)
75-09-2	Methylene chloride (Dichloromethane)	methylene chloride (or dichloromethane)
101-68-8	Methylene diphenyl diisocyanate (MDI)	methylene diphenyl diisocyanate
101-77-9	4,4-Methylenedianiline	methylene dianiline, 4,4’- (and its dichloride)
90-94-8		michler's ketone
1135		mineral fibers (other than man-made)
91-20-3	Naphthalene	
7697-37-2		nitric acid
98-95-3	Nitrobenzene	nitrobenzene
92-93-3	4-Nitrobiphenyl	
100-02-7	4-Nitrophenol	

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CAS Number	California Code of Regulations 93001[1]	SCAQMD Rule 1401
79-46-9	2-Nitropropane	nitrosodimethylamine, n-
759-73-9		nitroso-n-ethylurea, n-
684-93-5	N-Nitroso-N-methylurea	nitroso-n-methylurea, n-
62-75-9	N-Nitrosodimethylamine	
86-30-6		nitrosodiphenylamine, n-
156-10-5		nitrosodiphenylamine, p-
59-89-2	N-Nitrosomorpholine	nitrosomorpholine, n-
56-38-2	Parathion	
100-75-4		nitrosopiperidine, n-
930-55-2		nitrosopyrrolidine, n-
108171-26-2		paraffins, chlorinated (average chain length, c12; approx. 60% cl by weight)
82-68-8	Pentachloronitrobenzene (Quintobenzene)	
201-778-6	Pentachlorophenol	
108-95-2	Phenol	phenol
106-50-3	p-Phenylenediamine	
75-44-5	Phosgene	phosgene
7803-51-2	Phosphine	phosphine
7664-38-2		phosphoric acid
7723-14-0 12185-10-3 85-44-9	Phosphorus Phthalic anhydride	**phosphorus and phosphorus compounds** phthalic anhydride
1336-36-3	Polychlorinated biphenyls (Aroclors)	**polychlorinated biphenyls (PCBs)**
32598-13-3		3,3',4,4' Tetrachlorobiphenyl
70362-50-4		3,4,4',5 Tetrachlorobiphenyl
32598-14-4		2,3,3',4,4' Pentachlorobiphenyl
74472-37-0		2,3,4,4',5 Pentachlorobiphenyl
31508-00-6		2,3',4,4',5 Pentachlorobiphenyl
65510-44-3		2',3,4,4',5 Pentachlorobiphenyl
57465-28-8		3,3',4,4',5 Pentachlorobiphenyl
38380-08-4		2,3,3',4,4',5 Hexachlorobiphenyl
69782-90-7		2,3,3',4,4',5' Hexachlorobiphenyl
52663-72-6		2,3',4,4',5.5' Hexachlorobiphenyl
32774-16-6		3,3',4,4',5,5' Hexachlorobiphenyl
39635-31-9		2,3,3'4,4',5,5' Heptachlorobiphenyl
7758-01-2		potassium bromate
1120-71-4	1,3-Propane sultone	propane sultone, 1,3-
57-57-8	beta-Propiolactone	

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CAS Number	California Code of Regulations 93001[1]	SCAQMD Rule 1401
123-38-6	Propionaldehyde	
114-26-1	Propoxur (Baygon)	
78-87-5	Prophylene dichloride (1,2-Dichloropropane)	
115-07-1		propylene
107-98-2		propylene glycol methyl ether
75-56-9	Propylene oxide	propylene oxide (or 1,2-epoxy propane)
75-55-8	1,2-Propylenimine (2-Methylaziridine)	
91-22-5	Quinoline	
106-51-4	Quinone	
1310-73-2		sodium hydroxide
100-42-5	Styrene	tetrachlorodibenzo-p-dioxin, 2,3,7,8-, styrene (or vinyl benzene)
96-09-3	Styrene oxide	
7664-93-9		sulfuric acid (and oleum)
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	
79-34-5	1,1,2,2-Tetrachloroethane	tetrachloroethane, 1,1,2,2-
127-18-4	Tetrachloroethylene (Perchloroethylene)	perchloroethylene (or tetrachloroethylene)
62-55-5		thioacetamide
7550-45-0	Titanium tetrachloride	diaminotoluene, 2,4-
108-88-3	Toluene	toluene (or methyl benzene)
95-80-7	2,4-Toluene diamine	
584-84-9	2,4-Toluene diisocyanate	toluene-2,4-diisocyanate
91-08-7		toluene-2,6-diisocyanate
95-53-4	o-Toluidine	
8001-35-2	Toxaphene (chlorinated camphene)	
120-82-1	1,2,4-Trichlorobenzene	
79-00-5	1,1,2-Trichloroethane	trichloroethane, 1,1,2-
79-01-6	Trichloroethylene	trichloroethylene
95-95-4	2,4,5-Trichlorophenol	
88-06-2	2,4,6-Trichlorophenol	trichlorophenol, 2,4,6-tetrachlorophenols (TECPH)
121-44-8	Triethylamine	triethylamine
1582-09-8	Trifluralin	
540-84-1	2,2,4-Trimethylpentane	
7440-62-2		vanadium (fume or dust)
1314-62-1		vanadium pentoxide
108-05-4	Vinyl acetate	vinyl acetate
593-60-2	Vinyl bromide	dichloroethylene, 1,1- (see vinylidene chloride)

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75-01-4	Vinyl chloride	vinyl chloride (or chloroethylene)
75-35-4	Vinylidene chloride (1,1-Dichloroethylene)	vinylidene chloride (dichloroethylene, 1,1-)
1330-20-7 95-47-6 108-38-3 106-42-3	Xylenes (isomers and mixture) o-Xylenes m-Xylenes p-Xylenes	**xylenes (isomers and mixture)** xylene, o- xylene, m- xylene, p-
	Antimony Compounds	
7440-38-2 7784-42-1	Arsenic Compounds (inorganic including arsine)	**arsenic and arsenic compounds (inorganic)** including, but not limited to: arsenic compounds (inorganic) arsine
7440-41-7	Beryllium Compounds	beryllium and beryllium compounds
7440-43-9	Cadmium Compounds	cadmium and cadmium compounds
	Chromium Compounds	
18540-29-9 10294-40-3 13765-19-0 7758-97-6 10588-01-9 7789-06-2 13530-65-9 1333-82-0		**chromium (hexavalent) and chromium compounds** including, but not limited to: barium chromate calcium chromate lead chromate sodium dichromate strontium chromate zinc chromate chromic trioxide
	Cobalt Compounds	
7440-50-8		copper and copper compounds
	Coke Oven Emissions	
	Cyanide Compounds [FN1]	
 107-21-1 111-76-2 110-80-5 111-15-9 109-86-4 110-49-6	Glycol ethers [FN2]	**glycol ethers (and their acetates)** ethylene glycol ethylene glycol butyl ether ethylene glycol ethyl ether ethylene glycol ethyl ether acetate ethylene glycol methyl ether ethylene glycol methyl ether acetate
7439-92-1	Lead Compounds	**lead and lead compounds (inorganic, including elemental lead)** including, but not limited to: lead compounds (inorganic)

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CAS Number	California Code of Regulations 93001[1]	SCAQMD Rule 1401
301-04-2		lead acetate
7758-97-6		lead chromate
7446-27-7		lead phosphate
1335-32-6		lead subacetate
		lead compounds (other than inorganic)
7439-96-5	Manganese Compounds	manganese and manganese compounds
7439-97-6	Mercury Compounds	**mercury and mercury compounds (inorganic)**
		including, but not limited to:
7487-94-7		mercuric chloride
593-74-8		methyl mercury
	Fine mineral fibers [FN3]	
7440-02-0	Nickel Compounds	**nickel and nickel compounds:**
		including, but not limited to:
373-02-4		nickel acetate
3333-67-3		nickel carbonate
13463-39-3		nickel carbonyl
12054-48-7		nickel hydroxide
1313-99-1		nickel oxide
12035-72-2		nickel subsulfide
1271-28-9		nickelocene
		refinery dust from the pyrometallurgical process
		polycyclic aromatic hydrocarbons (PAHs)
56-55-3		benz[a]anthracene
50-32-8		benzo[a]pyrene
205-99-2		benzo[b]fluoranthene
205-82-3		benzo[j]fluoranthene
207-08-9		benzo[k]fluoranthene
218-01-9		chrysene
226-36-8		dibenz[a,h]acridine
224-42-0		dibenz[a,j]acridine
53-70-3		dibenz[a,h]anthracene
192-65-4		dibenzo[a,e]pyrene
189-64-0		dibenzo[a,h]pyrene
189-55-9		dibenzo[a,i]pyrene
191-30-0		dibenzo[a,l]pyrene
194-59-2		dibenzo[c,g]carbazole, 7h-
57-97-6		dimethylbenz[a]anthracene, 7,12-
42397-64-8		dinitropyrene, 1,6-

CAS Number	California Code of Regulations 93001[1]	SCAQMD Rule 1401
42397-65-9		dinitropyrene, 1,8-
193-39-5		indeno[1,2,3-cd]pyrene
56-49-5		methylcholanthrene, 3-
3697-24-3		methylchrysene, 5-
91-20-3		naphthalene
602-87-9		nitroacenaphthene, 5-
2043937		nitrochrysene, 6-
607-57-8		nitrofluorene, 2-
5522-43-0		nitropyrene, 1-
57835-92-4		nitropyrene, 4-
1150/1151		polycyclic aromatic hydrocarbons (PAHs), total
	Polycyclic Organic Matter [FN4]	
	Radionuclides (including radon) [FN5]	
7782-49-2	Selenium Compounds	**selenium and selenium compounds**
		other than hydrogen selenide
7440-66-6		**zinc and zinc compounds**
		including, but not limited to:
1314-13-2		zinc oxide

1: For all listing above which contain the word “compounds” and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc) as part of that chemical's infrastructure.

[FN1]

X ><<super>>1 CN where X=HN <<super>>1 or any other group where a formal dissociation may occur. For example KCN or Ca(CN) 2

[FN2]

includes mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol (R(OCH 2 CH 2) n -OR <<super>>1 where

[FNn]

= 1,2 or 3

[FNR]

= alkyl or aryl groups

[FNR]

><<super>>1 = R, H, or groups which, when removed, yield glycol ethers with the structure; R(OCH sub2 CH) subn -OH. Polymers are excluded from the glycol category.

[FN3]

includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

[FN4]

includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 degrees C

[FN5]

a type of atom which spontaneously undergoes radioactive decay.