BOARD MEETING DATE: August 7, 2026 AGENDA NO. 33

PROPOSAL: Determine that Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants, Is Exempt from CEQA; and Amend Rule 1401

SYNOPSIS: Proposed amendments to Rule 1401 will update the list of toxic air containments to reflect new compounds identified by OEHHA or existing compounds with new risk thresholds. This action is to adopt the Resolution: 1) Determining that Proposed Amended Rule 1401 – New Source Review of Toxic Air Containments, is exempt from the requirements of the California Environmental Quality Act; and 2) Amending Rule 1401. (Reviewed: Stationary Source Committee, June 26, 2026)

COMMITTEE: Stationary Source, June 26, 2026, Reviewed

RECOMMENDED ACTIONS:
Adopt the attached Resolution:
1. Determining that Proposed Amended Rule 1401 – New Source Review of Toxic Air Containments, is exempt from the requirements of the California Environmental Quality Act; and
2. Amending Rule 1401 – New Source Review of Toxic Air Containments.

Wayne Nastri
Executive Officer

SR: MK:NF:TT

Background
Rule 1401 – New Source Review of Toxic Air Contaminants, was adopted in 1990 to ensure that new, modified, or relocated equipment meet specific cancer and noncancer health risk thresholds for equipment emitting Toxic Air Contaminants (TACs) listed in Rule 1401 Table I. The TACs listed are those identified by the California Office of Environmental Health Hazard Assessment (OEHHA) who also establish risk exposure levels for TACs.

Since the last Rule 1401 amendment in 2017, OEHHA has adopted nine new toxic air contaminants: 1-bromopropane, cobalt, hexamethylene diisocyanate (HDI) monomer, isoprene, para-chlorobenzotrifluoride (pCBtF), polymeric HDI, tert-butyl acetate (t-BAc), trimethylbenzene, and trivalent chromium. OEHHA also added a new reference exposure level for 1,4-dichlorobenzene, which is a compound already listed in Rule 1401.

The methodology used to estimate health risks for Rule 1401 is based on guidance from OEHHA's Risk Assessment Guidelines which are incorporated in the South Coast AQMD Risk Assessment Procedures. Since 2015, South Coast AQMD uses 8-hour reference exposure levels to evaluate 8-hour chronic hazard index as part of a health risk assessment. PAR 1401 is being amended to reflect the new chemical compounds identified by OEHHA as a TAC and align with the South Coast AQMD Risk Assessment Procedures for 8-hour chronic hazard index.

Proposed Amendments
PAR 1401 will update Table I of the rule to be consistent with OEHHA. Amendments to Table I include the addition of nine new compounds, an update of one existing compound, and the addition of a new column for 8-hour reference exposure level effective dates. PAR 1401 will also add 8-hour chronic hazard index into the rule to align with the South Coast AQMD Risk Assessment Procedures. PAR 1401 includes other administrative amendments and removes an outdated Table II.

Public Process
Development of PAR 1401 has been conducted through a public process. Working Group Meetings were held to provide the public and stakeholders an opportunity to discuss important details about the proposed amended rule and provide input during rule development. The Working Group is composed of representatives from businesses, public agencies, and consultants. Staff held four Working Group Meetings remotely on December 19, 2023, July 9, 2024, March 5, 2026, and April 30, 2026. A Public Workshop was held on May 27, 2026.

Key Issues
Throughout the rule development process, staff has worked with stakeholders to resolve key issues. No key issues remain.

California Environmental Quality Act (CEQA)
Pursuant to CEQA Guidelines Sections 15002(k) and 15061, the proposed project (PAR 1401) is exempt from CEQA pursuant to CEQA Guidelines Sections 15061(b)(3). A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 and is included as Attachment I to this Board letter. If the proposed project is approved, the Notice of Exemption will be filed for posting with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties, and with the State Clearinghouse of the Governor's Office of Land Use and Climate Innovation.

Socioeconomic Impact Assessment
Of the proposed changes which comprise PAR 1401, only new, modified or relocated equipment emitting polymeric HDI, pCBtF, or t-BAc may require the installation of enhanced air pollution control equipment or the modification of existing air pollution control equipment in order to obtain a South Coast AQMD permit. Costs associated with implementing PAR 1401 are mainly due to the purchase, installation, operation and maintenance of control devices, and fees for the initial permit applications and subsequent permit renewals. Based on the projected universe of facilities, the estimated total present value of compliance costs will be $45,798,191 to $38,564,784 at a 1% to 4% discount rate, respectively. The average annual compliance costs over the period from 2026 to 2035 are estimated to range from $4,673,204 to $4,861,145 at a 1% to 4% real interest rate, respectively. Implementing PAR 1401 is expected to result in 37 net jobs foregone annually on average over the period from 2026 to 2035. Overall, the impact of PAR 1401 on production costs and delivered prices in the South Coast AQMD region is expected to be minimal. The Final Socioeconomic Impact Assessment is included as Attachment H to this Board Letter.

AQMP and Legal Mandates
PAR 1401 is needed to reduce exposure and associated health risk impacts from toxic emissions from stationary sources. As set forth in Health and Safety Code Section 44360 and AB 2588, the South Coast AQMD is required to conduct health risk assessments in accordance with guidelines established by OEHHA. However, since PAR 1401 does not implement any control measure from the 2022 AQMP, PAR 1401 will not be submitted for inclusion into the State Implementation Plan.

Implementation and Resource Impact
Existing South Coast AQMD resources are adequate to implement PAR 1401.

Attachments
A. Summary of Proposal
B. Key Issues and Responses
C. Rule Development Process
D. Key Contacts List
E. Resolution
F. Proposed Amended Rule 1401
G. Final Staff Report
H. Final Socioeconomic Impact Assessment
I. Notice of Exemption from CEQA
J. Board Meeting Presentation

ATTACHMENT A

SUMMARY OF PROPOSAL

Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants
Definitions • Add a definition for individual substance 8-hour chronic hazard index and total 8-hour chronic hazard index Requirements • Add a reference to subdivision (f) in subdivision (d) to specify the calculation used to determine health risk and prohibit the issuance of a permit if the health risk thresholds are exceeded • Include 8-hour hazard index to align calculation and assessment requirements in the rule with the South Coast AQMD Risk Assessment Procedures Table I • Add new column to include 8-hour REL effective dates • Add nine new compounds and their effective dates o 1-bromopropane o Cobalt o Hexamethylene Diisocyanate (HDI) (Monomer) o Isoprene o Parachlorobenzotrifluoride (pCBtF) o Polymeric Hexamethylene Diisocyanate o Tertiary Butyl Acetate (t-BAc) o Trimethylbenzenes o Trivalent Chromium • Add new acute reference exposure level effective date for 1,4-Dichlorobenzene • Add child compounds for existing parent compounds • Remove gasoline vapors and methyl mercury • Update compound names and chemical abstract service numbers Table II • Remove

ATTACHMENT B

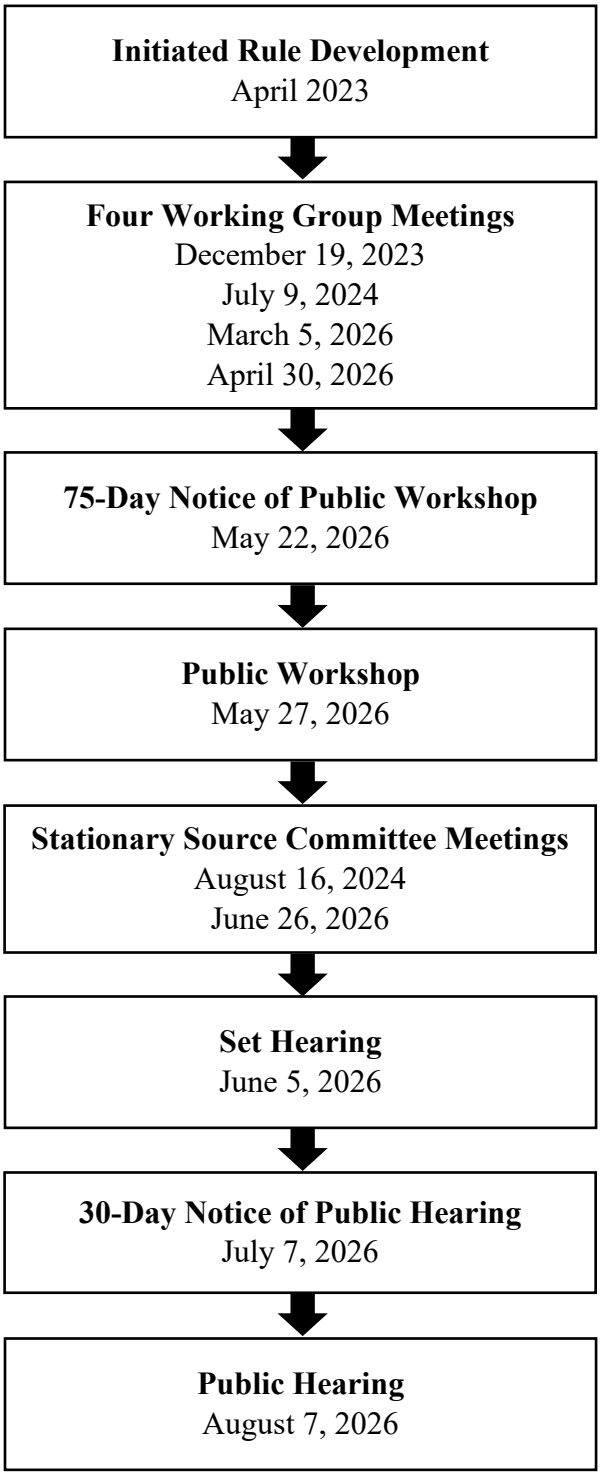
KEY ISSUES AND RESPONSES

Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants
Throughout the rulemaking process, staff worked with stakeholders to resolve key issues. There are no remaining key issues.

ATTACHMENT C

RULE DEVELOPMENT PROCESS

Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants



Twenty-Eight (28) months spent in rule development (Rule development paused from September 2024-September 2025)
One (1) Public Workshop
Four (4) Working Group Meetings
Two (2) Stationary Source Committee Meetings

ATTACHMENT D

KEY CONTACTS LIST

Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants (*listed alphabetically*)

- BASF Corporation
- Bay Area Air Quality Management District
- Boeing Company
- California Air Resources Board
- California Office of Environmental Health Hazard Assessment
- PPG Industries
- Santa Barbara County Air Pollution Control District

ATTACHMENT E

RESOLUTION NO. 26-____

A Resolution of the Governing Board of the South Coast Air Quality Management District (South Coast AQMD) determining that Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants, is exempt from the requirements of the California Environmental Quality Act (CEQA).

A Resolution of the South Coast AQMD Governing Board amending Rule 1401 – New Source Review of Toxic Air Contaminants.

WHEREAS, the South Coast AQMD Governing Board finds and determines that Proposed Amended Rule 1401 is considered a "project" as defined by CEQA; and

WHEREAS, the South Coast AQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l), and has conducted a CEQA review and analysis of the proposed project pursuant to such program (South Coast AQMD Rule 110); and

WHEREAS, the South Coast AQMD Governing Board finds and determines, after conducting a review of the proposed project in accordance with CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA, that Proposed Amended Rule 1401 is exempt from CEQA; and

WHEREAS, the South Coast AQMD Governing Board finds and determines that it can be seen with certainty that there is no possibility that Proposed Amended Rule 1401 could cause a significant adverse effect on the environment because: 1) installation of new, enhanced air pollution control equipment or the modification of existing air pollution control equipment (if required), would typically involve minimal construction activities and minor operational differences and would only apply to new, modified, or relocated equipment that emits polymeric hexamethylene diisocyanate (HDI), para-chlorobenzotrifluoride (pCBtF), or tert-butyl acetate (t-BAc); and 2) other changes to Proposed Amended Rule 1401 are administrative in nature. Therefore, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption; and

WHEREAS, the South Coast AQMD staff has prepared a Notice of Exemption for the proposed project that is completed in compliance with CEQA Guidelines Section 15062 – Notice of Exemption; and

WHEREAS, Proposed Amended Rule 1401 and supporting documentation, including but not limited to, the Notice of Exemption, the Final Staff Report, and the Final Socioeconomic Impact Assessment, were presented to the South Coast AQMD Governing Board and the South Coast AQMD Governing Board has reviewed and considered this information, as well as has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the South Coast AQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (Section 30.5(4)(D)(i) of the Administrative Code), that the modifications to Proposed Amended Rule 1401 since the Notice of Public Hearing was published are not so substantial as to significantly affect the meaning of Proposed Amended Rule 1401 within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission reductions, (b) the changes do not affect the number or type of sources regulated by the rule, (c) the changes are consistent with the information contained in the Notice of Public Hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because the proposed project is exempt from CEQA; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the South Coast AQMD 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 Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has determined that a need exists to amend Proposed Amended Rule 1401 to add new toxic air contaminants into Table I so that the chemical compounds will be evaluated during the health risk assessment in the permitting process; and

WHEREAS, Proposed Amended Rule 1401 will not be submitted for inclusion into the State Implementation Plan; and

WHEREAS, the South Coast AQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Health and Safety Code Sections 39002, 39650 et seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, 41700, and 42300 et. seq.; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1401 is written and displayed so that its meaning can be easily understood by the persons directly affected by it; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1401 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1401 does not impose the same requirements as any existing state or federal regulations, and the proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, South Coast AQMD; and

WHEREAS, the South Coast AQMD Governing Board, in adopting Proposed Amended Rule 1401, references the following statutes which the South Coast AQMD hereby implements, interprets, or makes specific: Health and Safety Code Sections 39666 (District new source review rules for toxics), 41700 (prohibited discharges), and 42300 et. seq., (permit system); and

WHEREAS, Health and Safety Code Section 40727.2 requires the South Coast AQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, and the South Coast AQMD's comparative analysis of Proposed Amended Rule 1401 is included in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has determined that the Final Socioeconomic Impact Assessment is consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule adoption; and

WHEREAS, the South Coast AQMD Governing Board has determined that the Final Socioeconomic Impact Assessment is consistent with the provisions of Health and Safety Code Sections 40440.8 and 40728.5; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1401 neither includes new Best Available Retrofit Control Technology (BARCT) requirements nor new feasible measures pursuant to Health and Safety Code Section 40914; therefore, the requirements to conduct an analysis of cost-effectiveness and incremental cost-effectiveness as set forth in the Health and Safety Code Section 40920.6, are not applicable; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 1401 will result in increased costs to affected industries in the South Coast AQMD jurisdiction, yet such costs are considered to be reasonable, with a total annualized cost as specified in the Final Socioeconomic Impact Assessment; and

WHEREAS, the South Coast AQMD Governing Board has actively considered the Final Socioeconomic Impact Assessment, and has made a good faith effort to minimize such impacts; and

WHEREAS, the South Coast AQMD staff conducted a public workshop meeting on May 27, 2026 regarding Proposed Amended Rule 1401; and

WHEREAS, the public hearing has been properly noticed in accordance with the provisions of Health and Safety Code Sections 40725 and 40440.5; and

WHEREAS, the South Coast AQMD Governing Board has held a public hearing in accordance with all applicable provisions of state and federal law; and

WHEREAS, the South Coast AQMD specifies that the Planning, Rule Development, and Implementation Manager overseeing the rule development of Proposed Amended Rule 1401 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of the proposed amended rule is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

NOW, THEREFORE BE IT RESOLVED, that the South Coast AQMD Governing Board does hereby determine, pursuant to the authority granted by law, that Proposed Amended Rule 1401 is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. This information was presented to the South Coast AQMD Governing Board, whose members exercised their independent judgment and reviewed, considered, and approved the information therein prior to acting on the proposed project; and

BE IT FURTHER RESOLVED, that the South Coast AQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 1401 as set forth in the attached, and incorporated herein by reference.

DATE: _____ _____

CLERK OF THE BOARDS

(Adopted June 1, 1990)(Amended December 7, 1990)(Amended July 10, 1998)
(Amended January 8, 1999)(Amended March 12, 1999)(Amended August 13, 1999)
(Amended March 17, 2000)(Amended August 18, 2000)(Amended June 15, 2001)
(Amended May 3, 2002)(Amended February 7, 2003)(Amended May 2, 2003)
(Amended March 4, 2005)(Amended March 7, 2008)(Amended June 5, 2009)
(Amended September 10, 2010)(Amended June 5, 2015)(Amended October 7, 2016)
(Amended September 1, 2017)(Amended Date of Adoption)

PROPOSED AMENDED RULE 1401. NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

[Rule Index to be provided after rule adoption]

(a) Purpose

This rule specifies limits for maximum individual cancer risk (MICR), Ceancer Bburden, and noncancer acute, 8-hour chronic, and chronic hazard index (HI) from new pPermit uUnits, rRelocations, or mModifications to existing pPermit uUnits which emit tToxic aAir cContaminants listed in Table I. The rule establishes allowable risks for pPermit uUnits requiring new permits pursuant to Rules 201 or 203.

(b) Applicability

(1) Applications for new, relocated, and modified pPermit uUnits which were received by the District on or after June 1, 1990 shall be subject to Rule 1401. Applications shall be subject to the version of Rule 1401 that is in effect at the time the application is deemed complete. Permit uUnits installed without a required permit to construct shall be subject to this rule, if the application for a permit to operate such equipment was submitted after June 1, 1990.

(2) This rule shall apply to new, relocated, and modified equipment identified in Rule 219 as not requiring a written permit if the risk from the equipment will be greater than identified in subparagraph (d)(1)(A), or paragraphs (d)(2) or (d)(3) in Rule 1401.

(c) Definitions

(1) ACCEPTABLE STACK HEIGHT for a pPermit uUnit is defined as a stack height that does not exceed two and one half times the height of the pPermit uUnit or two and one half times the height of the building housing the

~~p~~Permit ~~u~~Unit, and shall not be greater than 65 meters (213 feet), unless the applicant demonstrates to the satisfaction of the Executive Officer that a greater height is necessary.

(2) BEST AVAILABLE CONTROL TECHNOLOGY FOR TOXICS (T-BACT) means the most stringent emissions limitation or control technique which:

(A) has been achieved in practice for such ~~p~~Permit ~~u~~Unit category or class of source; or

(B) is any other emissions limitation or control technique, including process and equipment changes of basic and control equipment, found by the Executive Officer to be technologically feasible for such class or category of sources, or for a specific source.

(3) CANCER BURDEN means the estimated increase in the occurrence of cancer cases in a population subject to a MICR of greater than or equal to one in one million (1.0×10^{-6}) resulting from exposure to ~~t~~Toxic ~~a~~Air ~~c~~Contaminants.

(4) CONTEMPORANEOUS RISK REDUCTION means any reduction in risk resulting from a decrease in emissions of ~~t~~Toxic ~~a~~Air ~~c~~Contaminants at the ~~f~~Facility that is permanent, real, quantifiable and enforceable through District permit conditions. Permit applications associated with the increase and decrease in risk must be submitted together and the reduction of risk must occur before the start of operation of the ~~p~~Permit ~~u~~Unit that will have an increased risk. A ~~c~~Contemporaneous R~~r~~isk R~~r~~eduction shall be calculated based on the actual average annual emissions, as determined by ~~f~~Facility records, and annual emissions declarations pursuant to Rule 301 as appropriate, or other data approved by the Executive Officer, whichever is less, which have occurred during the two-year period immediately preceding the date of application.

(5) FACILITY means any ~~p~~Permit ~~u~~Unit or grouping of ~~p~~Permit ~~u~~Units or other air contaminant-emitting activities which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groupings, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one

~~f~~Facility. Notwithstanding the above, sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same ~~f~~Facility which is under the same ownership or use entitlement as the crude oil and gas production ~~f~~Facility on-shore.

(6) INDIVIDUAL SUBSTANCE 8-HOUR CHRONIC HAZARD INDEX (HI) is the ratio of the estimated 8-hour exposure to a Toxic Air Contaminant for a potential maximally exposed individual to its 8-hour reference exposure level.

(7)~~(6)~~ INDIVIDUAL SUBSTANCE ACUTE HAZARD INDEX (HI) is the ratio of the estimated maximum one-hour concentration of a ~~t~~Toxic ~~a~~Air ~~c~~Contaminant for a potential maximally exposed individual to its acute reference exposure level.

(8)~~(7)~~ INDIVIDUAL SUBSTANCE CHRONIC HAZARD INDEX (HI) is the ratio of the estimated long-term level of exposure to a ~~t~~Toxic ~~a~~Air ~~c~~Contaminant for a potential maximally exposed individual to its chronic reference exposure level. The chronic hazard index calculations shall include multipathway consideration, if applicable.

(9)~~(8)~~ MAXIMUM INDIVIDUAL CANCER RISK (MICR) is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to ~~t~~Toxic ~~a~~Air ~~c~~Contaminants for residential ~~r~~Receptor ~~l~~Locations calculated pursuant to the Risk Assessment Procedures referenced in subdivision (e). The MICR for worker ~~r~~Receptor ~~l~~Locations shall be calculated pursuant to the Risk Assessment Procedures referenced in subdivision (e). The MICR calculations shall include multipathway consideration, if applicable.

(10)~~(9)~~ MODIFICATION means any physical change in, change in method of operation, or addition to an existing ~~p~~Permit ~~u~~Unit that requires an application for a permit to construct and/or operate. Routine maintenance and/or repair shall not be considered a physical change. A change in the method of operation of equipment, unless previously limited by an enforceable permit condition, shall not include:

(A) an increase in the production rate, unless such increase will cause the maximum design capacity of the equipment to be exceeded; or

(B) an increase in the hours of operation; or

(C) a change in ownership of a source; or

(D) a change in formulation of the materials processed which will not result in a net increase of the MICR, ~~c~~Cancer ~~b~~Burden, Total Acute HI, Total 8-Hour Chronic HI, or Total Chronic HI ~~or chronic or acute HI~~ from the associated ~~p~~Permit ~~u~~Unit.

For ~~f~~Facilities that have been issued a ~~f~~Facility permit pursuant to Regulation XX or a Title V permit pursuant to Regulation XXX, ~~m~~Modification means any physical change in, change in method of operation of, or addition to an existing individual article, machine, equipment or other contrivance which would have required an application for a permit to construct and/or operate, were the unit not covered under a ~~f~~Facility permit or Title V permit.

(11)~~(10)~~ PERMIT UNIT means any article, machine, equipment, or other contrivance, or combination thereof, which may cause or control the issuance of air contaminants, and which requires a written permit pursuant to Rules 201 and/or 203. For ~~f~~Facilities that have been issued a ~~f~~Facility permit or Title V permit, a ~~p~~Permit ~~u~~Unit for the purpose of this rule means any individual article, machine, equipment or other contrivance which may cause or control the issuance of air contaminants and which would require a written permit pursuant to Rules 201 and/or 203 if it was not covered under a ~~f~~Facility permit or Title V permit. For publicly-owned sewage treatment operations, each process within multi-process ~~p~~Permit ~~u~~Units at the ~~f~~Facility shall be considered a separate ~~p~~Permit ~~u~~Unit for purposes of this rule.

(12)~~(11)~~ RECEPTOR LOCATION means

(A) for the purpose of calculating Total ~~a~~Acute HI, any location outside the boundaries of the ~~f~~Facility at which a person could experience acute exposure; and

(B) for the purpose of calculating Total 8-Hour Chronic HI, Total ~~c~~Chronic HI and MICR, any location outside the boundaries of the ~~f~~Facility at which a person could experience chronic exposure.

The Executive Officer shall consider the potential for exposure in determining whether the location will be considered a ~~r~~Receptor ~~l~~Location.

(13)~~(12)~~ RELOCATION means the removal of an existing ~~p~~Permit ~~u~~Unit from one parcel of land in the District and installation at another parcel of land where

two parcels are not in actual physical contact and are not separated solely by a public roadway or other public right-of-way. The removal of a ~~p~~Permit ~~u~~Unit from one location within a ~~f~~Facility and installation at another location within the ~~f~~Facility is a ~~r~~Relocation only if an increase in maximum individual cancer risk in excess of one in one million (1.0×10^{-6}) or a Hazard Index of 1.0 occurs at any ~~r~~Receptor ~~l~~Location.

(14) TOTAL 8-HOUR CHRONIC HAZARD INDEX (HI) is the sum of the Individual Substance 8-hour HIs for all Toxic Air Contaminants affecting the same target organ system.

(15)~~(13)~~ TOTAL ACUTE HAZARD INDEX (HI) is the sum of the ~~i~~Individual ~~s~~Substance ~~a~~Acute HIs for all ~~t~~Toxic ~~a~~Air ~~c~~Contaminants affecting the same target organ system.

(16)~~(14)~~ TOTAL CHRONIC HAZARD INDEX (HI) is the sum of the ~~i~~Individual ~~s~~Substance ~~c~~Chronic HIs for all ~~t~~Toxic ~~a~~Air ~~c~~Contaminants affecting the same target organ system.

(17)~~(15)~~ TOXIC AIR CONTAMINANT is an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. For the purpose of this rule, ~~t~~Toxic ~~a~~Air ~~c~~Contaminants are those listed in Table I.

(d) Requirements

The Executive Officer shall deny the permit to construct for a new, relocated or modified ~~p~~Permit ~~u~~Unit if emissions, calculated pursuant to subdivision (f), of any ~~t~~Toxic ~~a~~Air ~~c~~Contaminant listed in Table I may occur, unless the applicant has substantiated to the satisfaction of the Executive Officer all of the following:

(1) MICR and Cancer Burden

The cumulative increase in MICR which is the sum of the calculated MICR values for all ~~t~~Toxic ~~a~~Air ~~c~~Contaminants emitted from the new, relocated or modified ~~p~~Permit ~~u~~Unit will not result in any of the following:

(A) an increased MICR greater than one in one million (1.0×10^{-6}) at any ~~r~~Receptor ~~l~~Location, if the ~~p~~Permit ~~u~~Unit is constructed without T-BACT;

(B) an increased MICR greater than ten in one million (10×10^{-6}) at any ~~r~~Receptor ~~l~~Location, if the ~~p~~Permit ~~u~~Unit is constructed with T-BACT;

(C) an increased ~~c~~Cancer ~~b~~Burden greater than 0.5.

(2) Chronic Hazard Index and 8-Hour Chronic Hazard Index

(A) The cumulative increase in ~~t~~Total ~~c~~Chronic HI for any target organ system due to total emissions from the new, relocated or modified ~~p~~Permit ~~u~~Unit owned or operated by the applicant for which applications were deemed complete on or after the date when the risk value for the compound is finalized by the state Office of Environmental Health Hazard Assessment (OEHHA) will not exceed 1.0 at any R~~r~~eceptor ~~l~~Location.

(B) The cumulative increase in Total 8-Hour Chronic HI for any target organ system due to total emissions from the new, relocated or modified Permit Unit owned or operated by the applicant for which applications were deemed complete on or after the date when the risk value for the compound is finalized by OEHHA will not exceed 1.0 at any Receptor Location.

(3) Acute Hazard Index

The cumulative ~~increase in t~~Total ~~a~~Acute HI for any target organ system due to total emissions from the new, relocated or modified ~~p~~Permit ~~u~~Unit owned or operated by the applicant for which applications were deemed complete on or after the date when the risk value for the compound is finalized by OEHHA will not exceed 1.0 at any ~~r~~Receptor ~~l~~Location.

(4) If a permit contains operating conditions imposed pursuant to Rule 1401, which prohibit or limit the use or emission of ~~t~~Toxic ~~a~~Air ~~c~~Contaminants, those conditions shall apply only to those ~~t~~Toxic ~~a~~Air ~~c~~Contaminants listed in the version of Rule 1401 applicable at the time the permit conditions were imposed.

(5) Federal New Source Review for Toxics

Pursuant to Section 112(g) of the federal Clean Air Act (CAA), no person shall begin construction or reconstruction of a major stationary source emitting hazardous air pollutants listed in Section 112 (b) of the CAA, unless the source is constructed with Best Available Control Technology for Toxics (T-BACT) and complies with all other applicable requirements, including definitions and public noticing, referenced in 40 CFR 63.40 through 63.44. The requirements of this paragraph shall not apply to:

(A) any source that is subject to an existing National Emission Standard for Hazardous Air Pollutants (NESHAP) pursuant to sections 112(d), 112(h), or 112(j) of the federal CAA;

(B) any source that is exempted from regulations under a NESHAP issued pursuant to sections 112(d), 112(h), or 112(j) of the federal CAA;

(C) any source that has received all necessary air quality permits for such construction or reconstruction before June 29, 1998;

(D) electric utility steam generating units, unless and until such time as these units are added to the source category list pursuant to the requirements of section 112(c)(5) of the federal CAA;

(E) any sources that are within a source category that has been deleted from the source category list pursuant to section 112(c)(9) of the federal CAA; or

(F) research and development activities.

Compliance with this paragraph does not relieve any owner or operator of a major stationary source from complying with all other applicable District rules and regulations, including this rule, any applicable state airborne toxic control measure, or other applicable state and federal laws. Exemptions under subdivision (g) of this rule do not apply to this paragraph. This paragraph shall take effect retroactively from June 29, 1998.

(e) Risk Assessment Procedures

(1) The Executive Officer shall periodically publish procedures for determining health risks under this rule. To the extent possible, the procedures will be consistent with the most recently adopted policies and procedures of the state OEHHA.

(2) To calculate the cumulative increase in MICR pursuant to paragraph (d)(1), the increase from each ~~p~~Permit ~~u~~Unit shall be based on the emissions of ~~t~~Toxic ~~a~~Air ~~c~~Contaminants, the risk values, and risk assessment procedures applicable at the time when each complete application was deemed complete by the District.

(f) Emissions Calculations

(1) For the purpose of determining MICR and C~~c~~ancer B~~b~~urden due to a new or relocated ~~p~~Permit ~~u~~Unit pursuant to this rule, the total Toxic Air Contaminant emissions from the new or relocated ~~p~~Permit ~~u~~Unit shall be calculated on an annual basis from permit conditions which directly limit the emissions or, when no such conditions are imposed, from:

(A) the maximum rated capacity;

(B) the maximum possible annual hours of operation;

(C) the maximum annual emissions; and

(D) the physical characteristics of the materials processed.

(2) For the purpose of determining Total 8-Hour Chronic HI and Total eChronic HI due to a new or relocated pPermit uUnit pursuant to this rule, the total emissions from a pPermit uUnit shall be calculated on an annual average basis from permit conditions which directly limit the emissions or, when no such conditions are imposed, from:

(A) the maximum rated capacity;

(B) the annual average hours of operation;

(C) the annual average emissions; and

(D) the physical characteristics of the materials processed.

(3) For the purpose of determining MICR, eCancer Bburden, Total 8-Hour Chronic HI, and Total eChronic HI due to a modified pPermit uUnit pursuant to this rule, the increase in emissions from the modified pPermit uUnit shall be calculated based on the difference between the total permitted emissions after the mModification, calculated pursuant to the criteria established in subparagraphs (f)(1)(A), (B), (C), and (D), and:

(A) the total permitted emissions prior to the mModification as stated in the permit conditions; or

(B) if there are no existing permit conditions that limit emissions, the average annual emissions which have occurred during the two-year period immediately preceding the date of the complete permit application for mModification or other appropriate period determined by the Executive Officer to be representative of a pPermit uUnit's operation; or

(C) for mModification of any source installed prior to October 8, 1976, resulting from the addition of air pollution controls installed solely to reduce the issuance of air contaminants, emission shall be calculated from permit conditions which directly limit the emissions or, when no such conditions are imposed, from:

(i) the maximum rated capacity; and

(ii) the maximum proposed daily hours of operation; and

(iii) the physical characteristics of the materials processed.

(4) For the purpose of determining Total ~~a~~Acute HI due to a new, relocated or modified ~~p~~Permit ~~u~~Unit pursuant to this rule, the total emissions from a ~~p~~Permit ~~u~~Unit shall be calculated on a maximum hourly basis from permit conditions which directly limit the emissions or, when no such conditions exist, from:

(A) the maximum rated capacity;

(B) the maximum hourly emissions; and

(C) the physical characteristics of the materials processed.

(5) De Minimi~~us~~ Values

Any P~~p~~ermit ~~u~~Unit with values at or below the screening levels as specified in the procedures for determining health risks under this rule, published pursuant to paragraph (e)(1), shall be deemed in compliance with the requirements of subdivision (d).

(g) Exemptions

(1) The requirements of subdivision (d) shall not apply to:

(A) Permit Renewal or Change of Ownership

Any ~~p~~Permit ~~u~~Unit which is in continuous operation, without ~~m~~Modification or change in operating conditions, for which a new permit to operate is required solely because of permit renewal or change of ownership.

(B) Modification with No Increase in Risk

A ~~m~~Modification of a ~~p~~Permit ~~u~~Unit that causes a reduction or no increase in the ~~c~~Cancer ~~b~~Burden, MICR, ~~or~~ Total ~~a~~Acute HI, Total 8-Hour Chronic HI, or Total ~~c~~Chronic HI at any ~~r~~Receptor ~~l~~Location.

(C) Functionally Identical Replacement

A ~~p~~Permit ~~u~~Unit replacing a functionally identical ~~p~~Permit ~~u~~Unit, provided there is no increase in maximum rating or increase in emissions of any ~~t~~Toxic ~~a~~Air ~~c~~Contaminants. For replacement of dry cleaning ~~p~~Permit ~~u~~Units only, provided there is no increase in any ~~t~~Toxic ~~a~~Air ~~c~~Contaminants.

(D) Equipment Previously Exempt Under Rule 219 - Equipment Not Requiring A Written Permit Pursuant to Regulation II

Equipment which previously did not require a written permit pursuant to Rule 219 that is no longer exempt, provided that the

equipment was installed prior to the Rule 219 amendment eliminating the exemption and a complete application for the permit is received within one (1) year after the Rule 219 amendment removing the exemption.

(E) Modifications to Terminate Research Projects

Modifications restoring the previous permit conditions of a ~~p~~Permit ~~u~~Unit, provided that: the applicant demonstrates that the previous permit conditions were modified solely for the purpose of installing innovative control equipment as part of a demonstration or investigation designed to advance the state of the art with regard to controlling emissions of ~~t~~Toxic ~~a~~Air ~~c~~Contaminants; the emission reductions achieved by the demonstration project are not used for permitting any equipment with emission increases under the contemporaneous emission reduction exemption as specified in paragraph (g)(2); the demonstration project is completed within two (2) years; and a complete application is submitted no later than two (2) years after the date of issuance of the permit which modified the conditions of the previous permit for the purpose of the demonstration or investigation.

(F) Emergency Internal Combustion Engines

Emergency internal combustion engines that are exempted under Rule 1304.

(G) Wood Product Stripping

Wood product stripping ~~p~~Permit ~~u~~Units, provided that the risk increases due to emissions from the ~~p~~Permit ~~u~~Unit owned or operated by the applicant for which complete applications were submitted on or after July 10, 1998 will not exceed a MICR of 100 in one million (100×10^{-6}) or a ~~t~~Total ~~a~~Acute or ~~c~~Chronic ~~h~~Hazard ~~i~~Index of five (5) at any ~~r~~Receptor ~~l~~Location. This exemption shall not apply to permit applications received after January 10, 2000, or sooner if the Executive Officer makes a determination that T-BACT is available to enable compliance with the requirements of paragraphs (d)(1), (d)(2) and (d)(3).

(H) Gasoline Transfer and Dispensing Facilities

For gasoline transfer and dispensing facilities, as defined in Rule 461 – Gasoline Transfer and Dispensing, the Executive Officer shall

not, for the purposes of paragraphs (d)(1) through (d)(4), consider the risk contribution of methyl tert-butyl ether for any gasoline transfer and dispensing permit applications deemed complete on or before December 31, 2003. If the state of California extends the phase-out requirement for methyl tert-butyl ether as an oxygenate in gasoline, the limited time exemption shall be extended to that expiration date or December 31, 2004, whichever is sooner.

(2) Contemporaneous Risk Reduction

(A) Paragraph (d)(1) shall not apply if the applicant demonstrates that a ~~e~~Contemporaneous R~~r~~isk R~~r~~eduction resulting in a decrease in emissions will occur such that both of the following conditions are met:

(i) no ~~r~~Receptor ~~l~~Location will experience a total increase in MICR of greater than one in one million (1.0×10^{-6}) due to the cumulative impact of both the ~~p~~Permit ~~u~~Unit and the ~~e~~Contemporaneous R~~r~~isk R~~r~~eduction; and

(ii) the C~~e~~ontemporaneous R~~r~~isk R~~r~~eduction occurs within 100 meters of the ~~p~~Permit ~~u~~Unit.

T-BACT shall be used on ~~p~~Permit ~~u~~Units exempted under this subparagraph if the MICR from the ~~p~~Permit ~~u~~Unit exceeds one in one million (1.0×10^{-6}).

(B) The requirements of paragraphs (d)(2) and (d)(3) shall not apply if the applicant substantiates to the satisfaction of the Executive Officer that a C~~e~~ontemporaneous R~~r~~isk R~~r~~eduction will occur such that any increase in ~~i~~Individual ~~s~~Substance ~~a~~Acute HI, Individual Substance 8-Hour Chronic HI, or Individual Substance ~~e~~Chronic HI from the ~~p~~Permit ~~u~~Unit exceeding 1.0 is mitigated with an equal or greater decrease in the same ~~i~~Individual ~~s~~Substance ~~a~~Acute HI, Individual Substance 8-Hour Chronic HI, or Individual Substance ~~e~~Chronic HI, respectively, from the C~~e~~ontemporaneous R~~r~~isk R~~r~~eduction such that both of the following conditions are met:

(i) no R~~r~~eceptor ~~l~~Location will experience an increase in ~~t~~Total ~~a~~Acute HI, Total 8-Hour Chronic HI, or Total ~~e~~Chronic HI of more than 1.0 due to the cumulative impact of both the ~~p~~Permit ~~u~~Unit and the ~~e~~Contemporaneous R~~r~~isk R~~r~~eduction; and

(ii) the ~~c~~Contemporaneous ~~r~~Risk ~~r~~Reduction occurs within 100 meters of the ~~p~~Permit ~~u~~Unit.

(3) Alternate Hazard Index Levels

The requirements of paragraphs (d)(2) and (d)(3) shall not apply if the applicant substantiates to the satisfaction of the Executive Officer that at all R~~r~~eceptor ~~l~~Locations and for every target organ system, the Total Acute HI, Total 8-Hour Chronic HI, and ~~t~~Total ~~c~~Chronic HI~~- and acute HI level~~ resulting from emissions from the new, modified or relocated ~~p~~Permit ~~u~~Unit owned or operated by the applicant for which applications were submitted on or after July 10, 1998 shall not exceed alternate HI ~~levels~~ which are determined by the Executive Officer in consultation with the Office of Environmental Health Hazard Assessment to be protective against adverse health effects. No alternate HI ~~level~~ shall exceed 10.

TABLE I
TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
75-07-0	acetaldehyde	December 7, 1990	September 8, 1998	September 10, 2010
60-35-5	acetamide	January 8, 1999		
107-02-8	acrolein		June 15, 2001	August 13, 1999
79-06-1	acrylamide (or propenamide)	December 7, 1990	**	
79-10-7	acrylic acid		*	August 13, 1999
107-13-1	acrylonitrile (or vinyl cyanide)	December 7, 1990	May 3, 2002	
107-05-1	allyl chloride	January 8, 1999		
117-79-3	aminoanthraquinone, 2-	January 8, 1999		
7664-41-7	ammonia		August 18, 2000	August 13, 1999
62-53-3	aniline	January 8, 1999		
7440-38-2	**arsenic and arsenic compounds (inorganic)** including, but not limited to: arsenic compounds (inorganic)	December 7, 1990	June 15, 2001	August 13, 1999
7784-42-1	arsine		September 10, 2010	August 13, 1999
1332-21-4	asbestos	June 1, 1990		
71-43-2	benzene (including benzene from gasoline)	June 1, 1990	August 18, 2000	August 13, 1999
92-87-5	benzidine (and its salts)	December 7, 1990	**	
100-44-7	benzyl chloride	September 8, 1998	**	August 13, 1999
7440-41-7	beryllium and beryllium compounds	December 7, 1990	May 3, 2002	
111-44-4	bis(2-chloroethyl)ether (DCEE)	December 7, 1990		
117-81-7	bis(2-ethylhexyl)phthalate (DEHP)	September 8, 1998	**	

TABLE I
TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
542-88-1	bis(chloromethyl)ether	December 7, 1990		
7789-30-2	bromine pentafluoride		*	
106-99-0	butadiene, 1,3-	December 7, 1990	June 15, 2001	September 1, 2017
7440-43-9	cadmium and cadmium compounds	June 1, 1990	June 15, 2001	
105-60-2	caprolactum		September 1, 2017	September 1, 2017
75-15-0	carbon disulfide		May 3, 2002	August 13, 1999
56-23-5	carbon tetrachloride (or tetrachloromethane)	June 1, 1990	June 15, 2001	August 13, 1999
463-58-1	carbonyl sulfide		September 1, 2017	September 1, 2017
7782-50-5	chlorine		August 18, 2000	August 13, 1999
10049-04-4	chlorine dioxide		June 15, 2001	
95-83-0	chloro-o-phenylenediamine, 4-	January 8, 1999		
95-69-2	chloro-o-toluidine, p-	January 8, 1999		
108-90-7	chlorobenzene		June 15, 2001	
	chlorofluorocarbons			
75-43-4	dichlorodifluoromethane (CFC-12)		*	
75-69-4	trichlorofluoromethane (CFC-11)		*	
76-13-1	trichlorotrifluoroethane (CFC-113)		*	
67-66-3	chloroform (trichloromethane)	December 7, 1990	August 18, 2000	August 13, 1999

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TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
	Chlorophenols			
95-57-8	chlorophenol, 2-		*	
88-06-2	trichlorophenol, 2,4,6-	December 7, 1990		
	tetrachlorophenols (TECPH)		*	
87-86-5	pentachlorophenol	September 8, 1998	**	
76-06-2	chloropicrin		May 3, 2002	August 13, 1999
126-99-8	chloroprene		**	
18540-29-9	**chromium (hexavalent) and chromium compounds**	June 1, 1990	June 15, 2001	
	including, but not limited to:			
10294-40-3	barium chromate	June 1, 1990	June 15, 2001	
13765-19-0	calcium chromate	June 1, 1990	June 15, 2001	
7758-97-6	lead chromate	September 8, 1998	June 15, 2001	
10588-01-9	sodium dichromate	June 1, 1990	June 15, 2001	
7789-06-2	strontium chromate	June 1, 1990	June 15, 2001	
13530-65-9	zinc chromate	June 1, 1990	June 15, 2001	
1333-82-0	chromic trioxide	June 1, 1990	June 15, 2001	
7440-50-8	copper and copper compounds		*	August 13, 1999
120-71-8	cresidine, p-	January 8, 1999		
1319-77-3	**cresols/cresylic acid (all isomers and mixture)**		June 15, 2001	

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TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
108-39-4	cresol, m-		June 15, 2001	
95-48-7	cresol, o-		June 15, 2001	
106-44-5	cresol, p-		June 15, 2001	
135-20-6	cupferron	January 8, 1999		
	dialkylnitrosamines			
924-16-3	nitrosodi-n-butylamine, n-	December 7, 1990		
621-64-7	nitrosodi-n-propylamine, n-	September 8, 1998		
55-18-5	nitrosodiethylamine, n-	December 7, 1990		
62-75-9	nitrosodimethylamine, n-	December 7, 1990		
10595-95-6	nitrosomethylethylamine, n-	September 8, 1998		
615-05-4	diaminoanisole, 2,4- (sulfate)	January 8, 1999		
95-80-7	diaminotoluene, 2,4-	January 8, 1999		
	dibenzo-p-dioxins (chlorinated)			
1746-01-6	tetrachlorodibenzo-p-dioxin, 2,3,7,8-	June 1, 1990	August 18, 2000	
40321-76-4	pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	June 1, 1990	August 18, 2000	
39227-28-6	hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	June 1, 1990	August 18, 2000	
57653-85-7	hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-	June 1, 1990	August 18, 2000	
19408-74-3	hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-	June 1, 1990	August 18, 2000	
35822-46-9	heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-	June 1, 1990	August 18, 2000	
3268-87-9	octachlorodibenzo-p-dioxin, 1,2,3,4, 6,7,8,9-	June 1, 1990	August 18, 2000	

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TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
41903-57-5	total tetrachlorodibenzo-p-dioxin	June 1, 1990	August 18, 2000	
36088-22-9	total pentachlorodibenzo-p-dioxin	June 1, 1990	August 18, 2000	
34465-46-8	total hexachlorodibenzo-p-dioxin	June 1, 1990	August 18, 2000	
37871-00-4	total heptachlorodibenzo-p-dioxin	June 1, 1990	August 18, 2000	
	total dioxins, with individual isomers reported	June 1, 1990	August 18, 2000	
	total dioxins, without individual isomers reported	June 1, 1990	August 18, 2000	
	dibenzofurans (chlorinated)			
5120-73-19	tetrachlorodibenzofuran, 2,3,7,8-	June 1, 1990	August 18, 2000	
57117-41-6	pentachlorodibenzofuran, 1,2,3,7,8-	June 1, 1990	August 18, 2000	
57117-31-4	pentachlorodibenzofuran, 2,3,4,7,8-	June 1, 1990	August 18, 2000	
70648-26-9	hexachlorodibenzofuran, 1,2,3,4,7,8-	June 1, 1990	August 18, 2000	
57117-44-9	hexachlorodibenzofuran, 1,2,3,6,7,8-	June 1, 1990	August 18, 2000	
72918-21-9	hexachlorodibenzofuran, 1,2,3,7,8,9-	June 1, 1990	August 18, 2000	
60851-34-5	hexachlorodibenzofuran, 2,3,4,6,7,8-	June 1, 1990	August 18, 2000	
67562-39-4	heptachlorodibenzofuran, 1,2,3,4,6,7,8-	June 1, 1990	August 18, 2000	
55673-89-7	heptachlorodibenzofuran, 1,2,3,4,7,8,9-	June 1, 1990	August 18, 2000	
39001-02-0	octachlorodibenzofuran, 1,2,3,4,5,6,7,8	June 1, 1990	August 18, 2000	
55722-27-5	total tetrachlorodibenzofuran	June 1, 1990	August 18, 2000	
30402-15-4	total pentachlorodibenzofuran	June 1, 1990	August 18, 2000	

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TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
55684-94-1	total hexachlorodibenzofuran	June 1, 1990	August 18, 2000	
38998-75-3	total heptachlorodibenzofuran	June 1, 1990	August 18, 2000	
96-12-8	dibromo-3-chloropropane, 1,2- (DBCP)	September 8, 1998	**	
106-46-7	dichlorobenzene, 1,4- (or p-dichlorobenzene)	September 8, 1998	June 15, 2001	
91-94-1	dichlorobenzidine, 3,3	December 7, 1990		
75-34-3	dichloroethane, 1,1-	January 8, 1999		
75-35-4	dichloroethylene, 1,1- (see vinylidene chloride)			
9901 (emittant ID)	diesel PM – diesel particulate matter from diesel-fueled internal combustion engine exhaust	March 7, 2008	March 7, 2008	
111-42-2	diethanolamine		May 3, 2002	
60-11-7	dimethylaminoazobenzene, p-	January 8, 1999		
68-12-2	dimethylformamide (N,N-)		June 15, 2001	
121-14-2	dinitrotoluene, 2,4-	December 7, 1990		
123-91-1	dioxane, 1,4- (or 1,4-diethylene dioxide)	December 7, 1990	August 18, 2000	August 13, 1999
106-89-8	epichlorohydrin (or 1-chloro-2,3-epoxypropane)	December 7, 1990	June 15, 2001	August 13, 1999
106-88-7	epoxybutane,1,2-		June 15, 2001	
140-88-5	ethyl acrylate		*	
100-41-4	ethyl benzene	June 5, 2009	August 18, 2000	
75-00-3	ethyl chloride (or chloroethane)		August 18, 2000	

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TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
106-93-4	ethylene dibromide (or 1,2-dibromoethane)	June 1, 1990	May 3, 2002	
107-06-2	ethylene dichloride (or 1,2-dichloroethane)	June 1, 1990	June 15, 2001	
75-21-8	ethylene oxide (or 1,2-epoxyethane)	June 1, 1990	June 15, 2001	
96-45-7	ethylene thiourea	January 8, 1999		
1101	Fluorides (except hydrogen fluoride, listed separately below)		September 10, 2010	August 13, 1999
50-00-0	formaldehyde	December 7, 1990	August 18, 2000	August 13, 1999
	gasoline vapors		*	
111-30-8	glutaraldehyde		June 15, 2001	
	glycol ethers (and their acetates)			
107-21-1	ethylene glycol		August 18, 2000	
111-76-2	ethylene glycol butyl ether		*	August 13, 1999
110-80-5	ethylene glycol ethyl ether		August 18, 2000	February 10, 1999
111-15-9	ethylene glycol ethyl ether acetate		August 18, 2000	August 13, 1999
109-86-4	ethylene glycol methyl ether		August 18, 2000	August 13, 1999
110-49-6	ethylene glycol methyl ether acetate		August 18, 2000	
118-74-1	hexachlorobenzene	December 7, 1990	**	

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TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
608-73-1	**hexachlorocyclohexanes (mixed or technical grade)**	December 7, 1990	**	
319-85-6	hexachlorocyclohexane, alpha	September 8, 1998		
319-85-7	hexachlorocyclohexane, beta	September 8, 1998		
58-89-9	hexachlorocyclohexane, gamma- (lindane)	September 8, 1998	**	
77-47-4	hexachlorocyclopentadiene		*	
110-54-3	hexane		August 18, 2000	
302-01-2	hydrazine	September 8, 1998	June 15, 2001	
122-66-7	hydrazobenzene (or 1,2-diphenylhydrazine)	December 7, 1990		
7647-01-0	hydrochloric acid (or hydrogen chloride)		August 18, 2000	August 13, 1999
7664-39-3	hydrofluoric acid (or hydrogen fluoride)		September 10, 2010	August 13, 1999
10035-10-6	hydrogen bromide (HBR)		*	
74-90-8	hydrogen cyanide		August 18, 2000	August 13, 1999
7783-06-4	hydrogen sulfide		August 18, 2000	February 10, 1999
7783-07-5	hydrogen selenide			August 13, 1999
	isocyanates			
624-83-9	methyl isocyanate		May 3, 2002	
78-59-1	isophrone		May 3, 2002	
67-63-0	isopropyl alcohol		August 18, 2000	August 13, 1999

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TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
7439-92-1	**lead and lead compounds (inorganic, including elemental lead)** including, but not limited to:	September 8, 1998	**	
	lead compounds (inorganic)		September 8, 1998	**
301-04-2	lead acetate		September 8, 1998	**
7758-97-6	lead chromate		September 8, 1998	**
7446-27-7	lead phosphate		September 8, 1998	**
1335-32-6	lead subacetate		September 8, 1998	**
	lead compounds (other than inorganic)	September 8, 1998	**	
108-31-6	maleic anhydride		May 3, 2002	
7439-96-5	manganese and manganese compounds		August 18, 2000	
7439-97-6	**mercury and mercury compounds (inorganic)** including, but not limited to:		August 18, 2000	August 13, 1999
7487-94-7	mercuric chloride		August 18, 2000	
593-74-8	methyl mercury		August 18, 2000	
67-56-1	methanol (methyl alcohol)		August 18, 2000	August 13, 1999
74-83-9	methyl bromide (or bromomethane)		August 18, 2000	August 13, 1999
71-55-6	methyl chloroform (or 1,1,1-trichloroethane)		August 18, 2000	August 13, 1999
78-93-3	methyl ethyl ketone		*	August 13, 1999
80-62-6	methyl methacrylate		*	

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TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
1634-04-4	methyl tert-butyl ether	May 2, 2003	August 18, 2000	
101-14-4	methylene bis(2-chloroaniline), 4,4- (MOCA)	January 8, 1999		
75-09-2	methylene chloride (or dichloromethane)	June 1, 1990	August 18, 2000	August 13, 1999
101-77-9	methylene dianiline, 4,4'- (and its dichloride)	September 8, 1998	May 3, 2002	
101-68-8	methylene diphenyl diisocyanate		June 15, 2001	September 1, 2017
1135	mineral fibers (other than man-made)		*	
90-94-8	michler's ketone	January 8, 1999		
7440-02-0	**nickel and nickel compounds:** including, but not limited to:	March 12, 1999	August 18, 2000	August 13, 1999
373-02-4	nickel acetate	March 12, 1999	August 18, 2000	August 13, 1999
3333-67-3	nickel carbonate	March 12, 1999	August 18, 2000	August 13, 1999
13463-39-3	nickel carbonyl	March 12, 1999	August 18, 2000	August 13, 1999
12054-48-7	nickel hydroxide	March 12, 1999	August 18, 2000	August 13, 1999
1313-99-1	nickel oxide	March 12, 1999	August 18, 2000	August 13, 1999
12035-72-2	nickel subsulfide	December 7, 1990	August 18, 2000	August 13, 1999
1271-28-9	nickelocene	March 12, 1999	August 18, 2000	August 13, 1999
	refinery dust from the pyrometallurgical process	December 7, 1990	August 18, 2000	August 13, 1999
7697-37-2	nitric acid		*	August 13, 1999
98-95-3	nitrobenzene		*	
79-46-9	nitropropane, 2-		*	

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TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
759-73-9	nitroso-n-ethylurea, n-	December 7, 1990		
684-93-5	nitroso-n-methylurea, n-	December 7, 1990		
86-30-6	nitrosodiphenylamine, n-	December 7, 1990		
156-10-5	nitrosodiphenylamine, p-	September 8, 1998		
59-89-2	nitrosomorpholine, n-	January 8, 1999		
100-75-4	nitrosopiperidine, n-	January 8, 1999		
930-55-2	nitrosopyrrolidine, n-	December 7, 1990		
108171-26-2	paraffins, chlorinated (average chain length, c12; approx. 60% cl by weight)	January 8, 1999		
127-18-4	perchloroethylene (or tetrachloroethylene)	September 8, 1998	September 8, 1998	August 13, 1999
108-95-2	phenol		August 18, 2000	August 13, 1999
75-44-5	phosgene		*	August 13, 1999
7723-14-0	**phosphorus and phosphorus compounds**		*	
7803-51-2	phosphine		February 7, 2003	
7664-38-2	phosphoric acid		August 18, 2000	
85-44-9	phthalic anhydride		June 15, 2001	
1336-36-3	**polychlorinated biphenyls (PCBs)**	December 7, 1990	**	
32598-13-3	3,3',4,4' Tetrachlorobiphenyl	March 4, 2005***	March 4, 2005***	
70362-50-4	3,4,4',5 Tetrachlorobiphenyl	March 4, 2005***	March 4, 2005***	
32598-14-4	2,3,3',4,4' Pentachlorobiphenyl	March 4, 2005***	March 4, 2005***	
74472-37-0	2,3,4,4',5 Pentachlorobiphenyl	March 4, 2005***	March 4, 2005***	

TABLE I
TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
31508-00-6	2,3',4,4',5 Pentachlorobiphenyl	March 4, 2005***	March 4, 2005***	
65510-44-3	2',3,4,4',5 Pentachlorobiphenyl	March 4, 2005***	March 4, 2005***	
57465-28-8	3,3',4,4',5 Pentachlorobiphenyl	March 4, 2005***	March 4, 2005***	
38380-08-4	2,3,3',4,4',5 Hexachlorobiphenyl	March 4, 2005***	March 4, 2005***	
69782-90-7	2,3,3',4,4',5' Hexachlorobiphenyl	March 4, 2005***	March 4, 2005***	
52663-72-6	2,3',4,4',5.5' Hexachlorobiphenyl	March 4, 2005***	March 4, 2005***	
32774-16-6	3,3',4,4',5,5' Hexachlorobiphenyl	March 4, 2005***	March 4, 2005***	
39635-31-9	2,3,3'4,4',5,5' Heptachlorobiphenyl	March 4, 2005***	March 4, 2005***	
	polycyclic aromatic hydrocarbons (PAHs)			
56-55-3	benz[a]anthracene	December 7, 1990		
50-32-8	benzo[a]pyrene	December 7, 1990		
205-99-2	benzo[b]fluoranthene	December 7, 1990		
205-82-3	benzo[j]fluoranthene	January 8, 1999		
207-08-9	benzo[k]fluoranthene	December 7, 1990		
218-01-9	chrysene	December 7, 1990		
226-36-8	dibenz[a,h]acridine	January 8, 1999		
224-42-0	dibenz[a,j]acridine	January 8, 1999		
53-70-3	dibenz[a,h]anthracene	December 7, 1990		
192-65-4	dibenzo[a,e]pyrene	January 8, 1999		
189-64-0	dibenzo[a,h]pyrene	January 8, 1999		
189-55-9	dibenzo[a,i]pyrene	January 8, 1999		

TABLE I
TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
191-30-0	dibenzo[a,l]pyrene	January 8, 1999		
194-59-2	dibenzo[c,g]carbazole, 7h-	January 8, 1999		
57-97-6	dimethylbenz[a]anthracene, 7,12-	January 8, 1999		
42397-64-8	dinitropyrene, 1,6-	January 8, 1999		
42397-65-9	dinitropyrene, 1,8-	January 8, 1999		
193-39-5	indeno[1,2,3-cd]pyrene	December 7, 1990		
56-49-5	methylcholanthrene, 3-	January 8, 1999		
3697-24-3	methylchrysene, 5-	January 8, 1999		
91-20-3	naphthalene	March 4, 2005***	August 18, 2000	
602-87-9	nitroacenaphthene, 5-	January 8, 1999		
7496-02-8	nitrochrysene, 6-	January 8, 1999		
607-57-8	nitrofluorene, 2-	January 8, 1999		
5522-43-0	nitropyrene, 1-	January 8, 1999		
57835-92-4	nitropyrene, 4-	January 8, 1999		
1150/1151	polycyclic aromatic hydrocarbons (PAHs), total	September 8, 1998		
7758-01-2	potassium bromate	January 8, 1999		
1120-71-4	propane sultone, 1,3-	January 8, 1999		
115-07-1	propylene		August 18, 2000	
107-98-2	propylene glycol methyl ether		August 18, 2000	
75-56-9	propylene oxide (or 1,2-epoxy propane)	September 8, 1998	February 23, 2000	August 13, 1999

TABLE I
TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
7782-49-2	**selenium and selenium compounds** other than hydrogen selenide		May 3, 2002	
1310-73-2	sodium hydroxide		*	August 13, 1999
100-42-5	styrene (or vinyl benzene)		August 18, 2000	August 13, 1999
7664-93-9	sulfuric acid (and oleum)		May 3, 2002	August 13, 1999
79-34-5	tetrachloroethane, 1,1,2,2-	January 8, 1999		
62-55-5	thioacetamide	January 8, 1999		
108-88-3	toluene (or methyl benzene)		August 18, 2000	August 13, 1999
	toluene diisocyanates			
584-84-9	toluene-2,4-diisocyanate	September 8, 1998	June 15, 2001	September 1, 2017
91-08-7	toluene-2,6-diisocyanate	September 8, 1998	June 15, 2001	September 1, 2017
79-00-5	trichloroethane, 1,1,2-	January 8, 1999		
79-01-6	trichloroethylene	December 7, 1990	August 18, 2000	
121-44-8	triethylamine		February 7, 2003	August 13, 1999
51-79-6	urethane (or ethyl carbamate)	September 8, 1998		
7440-62-2	vanadium (fume or dust)			August 13, 1999
1314-62-1	vanadium pentoxide			August 13, 1999
108-05-4	vinyl acetate		May 3, 2002	
75-01-4	vinyl chloride (or chloroethylene)	December 7, 1990	**	August 13, 1999
75-35-4	vinylidene chloride (dichloroethylene, 1,1-)		June 15, 2001	

TABLE I
TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
1330-20-7	**xylenes (isomers and mixture)**		August 18, 2000	August 13, 1999
108-38-3	xylene, m-		August 18, 2000	August 13, 1999
95-47-6	xylene, o-		August 18, 2000	August 13, 1999
106-42-3	xylene, p-		August 18, 2000	August 13, 1999
7440-66-6	**zinc and zinc compounds**		*	
	including, but not limited to:			
1314-13-2	zinc oxide		*	

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	**SUBSTANCE**	**EFFECTIVE DATE**			
		CANCER	**CHRONIC**	**8-HOUR**	**ACUTE**
75-07-0	acetaldehyde	12/07/1990	09/08/1998	06/05/2015	09/10/2010
60-35-5	acetamide	01/08/1999			
107-02-8	acrolein		06/15/2001	06/05/2015	08/13/1999
79-06-1	acrylamide (or propenamide)	12/07/1990	**		
79-10-7	acrylic acid		*		08/13/1999
107-13-1	acrylonitrile (or vinyl cyanide)	12/07/1990	05/03/2002		
107-05-1	allyl chloride	01/08/1999			
117-79-3	aminoanthraquinone, 2-	01/08/1999			
7664-41-7	ammonia		08/18/2000		08/13/1999
62-53-3 142-04-1	**aniline** aniline hydrochloride	01/08/1999 01/08/1999			

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
7440-38-2	**arsenic and arsenic compounds (inorganic)** including, but not limited to: arsenic compounds (inorganic oxides)	12/07/1990	06/15/2001	06/05/2015	08/13/1999
7778-39-4	arsenic acid	12/07/1990	06/15/2001	06/05/2015	08/13/1999
1303-28-2	arsenic pentoxide	12/07/1990	06/15/2001	06/05/2015	08/13/1999
1327-53-3	arsenic trioxide	12/07/1990	06/15/2001	06/05/2015	08/13/1999
7784-42-1	arsine		09/10/2010	06/05/2015	08/13/1999
7778-44-1	calcium arsenate	12/07/1990	06/15/2001	06/05/2015	08/13/1999
1303-00-0	gallium arsenide	12/07/1990	06/15/2001	06/05/2015	08/13/1999
1332-21-4	**asbestos**	06/01/1990			
77536-66-4	actinolite	06/01/1990			
12172-73-5	amosite	06/01/1990			
77536-67-5	anthophyllite	06/01/1990			
12001-29-5	chrysotile	06/01/1990			
12001-28-4	crocidolite	06/01/1990			
77536-68-6	tremolite	06/01/1990			
71-43-2	benzene (including benzene from gasoline)	06/01/1990	08/18/2000	06/05/2015	08/13/1999

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
92-87-5	**benzidine (and its salts) values also apply to:**	12/07/1990	**		
1020	benzidine based dyes	12/07/1990			
28407-37-6	C.I. Direct Blue 218 [PAHDerivative/Related, POM]-	12/07/1990			
612-82-8	3,3'-dimethylbenzidine dihydrochloride	12/07/1990			
1937-37-7	direct Black 38	12/07/1990			
2602-46-2	direct Blue 6	12/07/1990			
16071-86-6	direct Brown 95 (technical grade)	12/07/1990			
100-44-7	benzyl chloride	09/08/1998	**		08/13/1999
7440-41-7	**beryllium and beryllium compounds**	12/07/1990	05/03/2002		
13510-49-1	beryllium sulfate	12/07/1990	05/03/2002		
7787-56-6	beryllium sulfate (tetrahydrate)	12/07/1990	05/03/2002		
1304-56-9	beryllium oxide	12/07/1990	05/03/2002		
111-44-4	bis(2-chloroethyl)ether (DCEE) [dichloroethylether]	12/07/1990			
117-81-7	bis(2-ethylhexyl)phthalate (DEHP) [di(2-ethylhexyl)phthalate]	09/08/1998	**		
542-88-1	bis(chloromethyl)ether	12/07/1990			

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
7789-30-2	bromine pentafluoride		*		
106-94-5	1-bromopropane	Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
106-99-0	butadiene, 1,3-	12/07/1990	06/15/2001	06/05/2015	09/01/2017
7440-43-9	**cadmium and cadmium compounds**	06/01/1990	06/15/2001		
10108-64-2	cadmium chloride	06/01/1990	06/15/2001		
141-00-4	cadmium succinate	06/01/1990	06/15/2001		
105-60-2	caprolactum		09/01/2017	09/01/2017	09/01/2017
75-15-0	carbon disulfide		05/03/2002		08/13/1999
56-23-5	carbon tetrachloride (or tetrachloromethane)	06/01/1990	06/15/2001		08/13/1999
463-58-1	carbonyl sulfide		09/01/2017	09/01/2017	09/01/2017
7782-50-5	chlorine		08/18/2000		08/13/1999
10049-04-4	chlorine dioxide		06/15/2001		
95-83-0	chloro-o-phenylenediamine, 4-	01/08/1999			
95-69-2	chloro-o-toluidine, p-	01/08/1999			
108-90-7	chlorobenzene		06/15/2001		

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
	chlorofluorocarbons				
75-43-4	dichlorodifluoromethane (CFC-12)		*		
75-69-4	trichlorofluoromethane (CFC-11)		*		
76-13-1	trichlorotrifluoroethane (CFC-113)		*		
67-66-3	chloroform (trichloromethane)	12/07/1990	08/18/2000		08/13/1999
1060	**chlorophenols**				
95-57-8	chlorophenol, 2-		*		
88-06-2	trichlorophenol, 2,4,6-	12/07/1990			
	tetrachlorophenols (TECPH)		*		
87-86-5	pentachlorophenolT	09/08/1998	**		
76-06-2	chloropicrin		05/03/2002		08/13/1999
126-99-8	chloroprene		**		
98-56-6	1-chloro-4(trifluoromethyl)benzene (pCBtF)	12/31/2027			
16065-83-1	chromium (III)		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	**SUBSTANCE**	**EFFECTIVE DATE**			
		CANCER	**CHRONIC**	**8-HOUR**	**ACUTE**
18540-29-9	**chromium (hexavalent) and chromium compounds**	06/01/1990	06/15/2001		
	including, but not limited to:				
10294-40-3	barium chromate	06/01/1990	06/15/2001		
1189-85-1	t-butyl chromate (IV)	06/01/1990	06/15/2001		
13765-19-0	calcium chromate	06/01/1990	06/15/2001		
7758-97-6	lead chromate	09/08/1998	06/15/2001		
10588-01-9	sodium dichromate	06/01/1990	06/15/2001		
7789-06-2	strontium chromate	06/01/1990	06/15/2001		
13530-65-9	zinc chromate	06/01/1990	06/15/2001		
1333-82-0	chromic trioxide	06/01/1990	06/15/2001		

7440-48-4	**cobalt**	Date of Rule Amendment			
1216	cobalt compounds, insoluble, including but not limited to:	Date of Rule Amendment			
513-79-1	cobalt carbonate	Date of Rule Amendment			
10210-68-1	cobalt carbonyl	Date of Rule Amendment			
21041-93-0	cobalt hydroxide	Date of Rule Amendment			
814-89-1	cobalt oxalate	Date of Rule Amendment			
1307-96-6	cobalt [II] oxide	Date of Rule Amendment			
1308-06-1	cobalt [III] oxide	Date of Rule Amendment			
1317-42-6	cobalt sulfide	Date of Rule Amendment			
1217	Cobalt sulfate and other soluble cobalt compounds, including but not limited to:	Date of Rule Amendment			
71-48-7	cobalt acetate (tetrahydrate)	Date of Rule Amendment			
7646-79-9	cobalt chloride (hexahydrate)	Date of Rule Amendment			
16842-03-8	cobalt hydrocarbonyl	Date of Rule Amendment			
10141-05-6	cobalt nitrate (hexahydrate)	Date of Rule Amendment			
136-52-7	cobalt octoate	Date of Rule Amendment			
10124-43-3	cobalt sulfate	Date of Rule Amendment			
10026-24-1	cobalt sulfate (heptahydrate)	Date of Rule Amendment			

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
		Date of Rule Amendment			
7440-50-8 [1067]	copper and copper compounds [including but not limited to: copper fume (as copper)]		*		08/13/1999
120-71-8	cresidine, p-	01/08/1999			
1319-77-3	**cresols/cresylic acid (all isomers and mixture)**		06/15/2001		
108-39-4	cresol, m-		06/15/2001		
95-48-7	cresol, o-		06/15/2001		
106-44-5	cresol, p-		06/15/2001		
135-20-6	cupferron	01/08/1999			
	dialkylnitrosamines				
924-16-3	nitrosodi-n-butylamine, n-	12/07/1990			
621-64-7	nitrosodi-n-propylamine, n-	09/08/1998			
55-18-5	nitrosodiethylamine, n-	12/07/1990			
62-75-9	nitrosodimethylamine, n-	12/07/1990			
10595-95-6	nitrosomethylethylamine, n-	09/08/1998			
615-05-4	diaminoanisole, 2,4- (sulfate)	01/08/1999			
95-80-7	diaminotoluene, 2,4-	01/08/1999			
	dibenzo-p-dioxins (chlorinated)				

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
1746-01-6	tetrachlorodibenzo-p-dioxin, 2,3,7,8-	06/01/1990	08/18/2000		
40321-76-4	pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	06/01/1990	08/18/2000		
39227-28-6	hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	06/01/1990	08/18/2000		
57653-85-7	hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-	06/01/1990	08/18/2000		
19408-74-3	hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-	06/01/1990	08/18/2000		
35822-46-9	heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-	06/01/1990	08/18/2000		
3268-87-9	octachlorodibenzo-p-dioxin, 1,2,3,4, 6,7,8,9-	06/01/1990	08/18/2000		
41903-57-5	total tetrachlorodibenzo-p-dioxin	06/01/1990	08/18/2000		
36088-22-9	total pentachlorodibenzo-p-dioxin	06/01/1990	08/18/2000		
34465-46-8	total hexachlorodibenzo-p-dioxin	06/01/1990	08/18/2000		
37871-00-4	total heptachlorodibenzo-p-dioxin	06/01/1990	08/18/2000		
1085	total dioxins, with individual isomers reported	06/01/1990	08/18/2000		
1086	total dioxins, without individual isomers reported	06/01/1990	08/18/2000		
	dibenzofurans (chlorinated)				
5120-73-19	tetrachlorodibenzofuran, 2,3,7,8-	06/01/1990	08/18/2000		
57117-41-6	pentachlorodibenzofuran, 1,2,3,7,8-	06/01/1990	08/18/2000		
57117-31-4	pentachlorodibenzofuran, 2,3,4,7,8-	06/01/1990	08/18/2000		

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
70648-26-9	hexachlorodibenzofuran, 1,2,3,4,7,8-	06/01/1990	08/18/2000		
57117-44-9	hexachlorodibenzofuran, 1,2,3,6,7,8-	06/01/1990	08/18/2000		
72918-21-9	hexachlorodibenzofuran, 1,2,3,7,8,9-	06/01/1990	08/18/2000		
60851-34-5	hexachlorodibenzofuran, 2,3,4,6,7,8-	06/01/1990	08/18/2000		
67562-39-4	heptachlorodibenzofuran, 1,2,3,4,6,7,8-	06/01/1990	08/18/2000		
55673-89-7	heptachlorodibenzofuran, 1,2,3,4,7,8,9-	06/01/1990	08/18/2000		
39001-02-0	octachlorodibenzofuran, 1,2,3,4,5,6,7,8	06/01/1990	08/18/2000		
55722-27-5	total tetrachlorodibenzofuran	06/01/1990	08/18/2000		
30402-15-4	total pentachlorodibenzofuran	06/01/1990	08/18/2000		
55684-94-1	total hexachlorodibenzofuran	06/01/1990	08/18/2000		
38998-75-3	total heptachlorodibenzofuran	06/01/1990	08/18/2000		
1080	total dibenzofurans, without individual isomers reported	06/01/1990	08/18/2000		
96-12-8	dibromo-3-chloropropane, 1,2- (DBCP)	09/08/1998	**		
106-46-7	dichlorobenzene, 1,4- (or p-dichlorobenzene)	09/08/1998	06/15/2001	07/18/2025	Date of Rule Amendment
91-94-1	dichlorobenzidine, 3,3	12/07/1990			
75-34-3	dichloroethane, 1,1-	01/08/1999			
75-35-4	dichloroethylene, 1,1- (see vinylidene chloride)				

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	**SUBSTANCE**	**EFFECTIVE DATE**			
		CANCER	**CHRONIC**	**8-HOUR**	**ACUTE**
9901 (emittant ID)	diesel PM – diesel particulate matter from diesel-fueled internal combustion engine exhaust	03/07/2008	03/07/2008		
111-42-2	diethanolamine		05/03/2002		
60-11-7	dimethylaminoazobenzene, p-	01/08/1999			
68-12-2	dimethylformamide (N,N-)		06/15/2001		
121-14-2 1326-41-6	**dinitrotoluene, 2,4-** 2,4-dinitrotoluene, sulfurized	12/07/1990 12/07/1990			
123-91-1	dioxane, 1,4- (or 1,4-diethylene dioxide)	12/07/1990	08/18/2000		08/13/1999
106-89-8	epichlorohydrin (or 1-chloro-2,3-epoxypropane)	12/07/1990	06/15/2001		08/13/1999
106-88-7	epoxybutane,1,2-		06/15/2001		
140-88-5	ethyl acrylate		*		
100-41-4	ethyl benzene	06/05/2009	08/18/2000		
75-00-3	ethyl chloride (or chloroethane)		08/18/2000		
106-93-4	ethylene dibromide (or 1,2-dibromoethane)	06/01/1990	05/03/2002		
107-06-2	ethylene dichloride (or 1,2-dichloroethane)	06/01/1990	06/15/2001		
75-21-8	ethylene oxide (or 1,2-epoxyethane)	06/01/1990	06/15/2001		
96-45-7	ethylene thiourea	01/08/1999			
1101	**Fluorides and compounds (except hydrogen fluoride, listed separately below)**		09/10/2010		08/13/1999

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
1141	modified hydrogen fluoride (MHF)		09/10/2010		08/13/1999
7783-79-1	selenium hexafluoride		09/10/2010		08/13/1999
15096-52-3	sodium aluminum fluoride		09/10/2010		
7681-49-4	sodium fluoride		09/10/2010		
50-00-0	formaldehyde	12/07/1990	08/18/2000	06/05/2015	08/13/1999
	~~gasoline vapors~~		~~*~~		
111-30-8	glutaraldehyde		06/15/2001		
1115	**glycol ethers (and their acetates)**				
107-21-1	ethylene glycol		08/18/2000		
111-76-2	ethylene glycol butyl ether		~~*~~ 05/04/2018	05/04/2018	08/13/1999
110-80-5	ethylene glycol ethyl ether		08/18/2000		02/10/1999
111-15-9	ethylene glycol ethyl ether acetate		08/18/2000		08/13/1999
109-86-4	ethylene glycol methyl ether		08/18/2000		08/13/1999
110-49-6	ethylene glycol methyl ether acetate		08/18/2000		
118-74-1	hexachlorobenzene	12/07/1990	**		

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
608-73-1	**hexachlorocyclohexanes (mixed or technical grade)**	12/07/1990	**		
319-84-6	hexachlorocyclohexane, alpha	09/08/1998			
319-85-7	hexachlorocyclohexane, beta	09/08/1998			
58-89-9	hexachlorocyclohexane, gamma- (lindane)	09/08/1998	**		
77-47-4	hexachlorocyclopentadiene		*		
822-06-0	1,6-hexamethylene diisocyanate (monomer)[n]		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
110-54-3	hexane		08/18/2000		
302-01-2	hydrazine	09/08/1998	06/15/2001		
122-66-7	hydrazobenzene (or 1,2-diphenylhydrazine)	12/07/1990			
7647-01-0	hydrochloric acid (or hydrogen chloride)		08/18/2000		08/13/1999
7664-39-3	hydrofluoric acid (or hydrogen fluoride)		09/10/2010		08/13/1999
10035-10-6	hydrogen bromide (HBR)		*		
74-90-8	hydrogen cyanide		08/18/2000		08/13/1999
7783-06-4	hydrogen sulfide		08/18/2000		02/10/1999
7783-07-5	hydrogen selenide				08/13/1999

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
	isocyanates				
624-83-9	methyl isocyanate		05/03/2002		
78-59-1	isophrone		05/03/2002		
78-79-5	isoprene	Date of Rule Amendment			
67-63-0	isopropyl alcohol		08/18/2000		08/13/1999
7439-92-1	**lead and lead compounds (inorganic, including elemental lead) including, but not limited to:**	09/08/1998	**		
1128	lead compounds (inorganic)	09/08/1998	**		
301-04-2	lead acetate	09/08/1998	**		
7758-97-6	lead chromate	09/08/1998	**		
7446-27-7	lead phosphate	09/08/1998	**		
1335-32-6	lead subacetate	09/08/1998	**		
	lead compounds (other than inorganic)	09/08/1998	**		
108-31-6	maleic anhydride		05/03/2002		
7439-96-5	**manganese and manganese compounds**		08/18/2000	06/05/2015	
12079-65-1	manganese cyclopentadienyl tricarbonyl		08/18/2000	06/05/2015	
12108-13-3			08/18/2000	06/05/2015	

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
	2-methylcyclopentadienyl manganese-tricarbonyl				
7439-97-6	**mercury and mercury compounds (inorganic)** including, but not limited to:		08/18/2000	06/05/2015	08/13/1999
7487-94-7	mercuric chloride		08/18/2000	06/05/2015	
~~593-74-8~~	~~methyl mercury~~		~~08/18/2000~~		
67-56-1	methanol (methyl alcohol)		08/18/2000		08/13/1999
74-83-9	methyl bromide (or bromomethane)		08/18/2000		08/13/1999
71-55-6	methyl chloroform (or 1,1,1-trichloroethane)		08/18/2000		08/13/1999
78-93-3	methyl ethyl ketone		*		08/13/1999
80-62-6	methyl methacrylate		*		
1634-04-4	methyl tert-butyl ether	05/02/2003	08/18/2000		
101-14-4	methylene bis(2-chloroaniline), 4,4- (MOCA)	01/08/1999			
75-09-2	methylene chloride (or dichloromethane)	06/01/1990	08/18/2000		08/13/1999
101-77-9	methylene dianiline, 4,4'- (and its dichloride)	09/08/1998	05/03/2002		
101-68-8	methylene diphenyl diisocyanate		06/15/2001	03/28/2016	09/01/2017
1135	mineral fibers (other than man-made)		*		
90-94-8	michler's ketone	01/08/1999			

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
7440-02-0	**nickel and nickel compounds:**	03/12/1999	08/18/2000	06/05/2015	08/13/1999
	including, but not limited to:				
373-02-4	nickel acetate	03/12/1999	08/18/2000	06/05/2015	08/13/1999
3333-67-3	nickel carbonate	03/12/1999	08/18/2000	06/05/2015	08/13/1999
13463-39-3	nickel carbonyl	03/12/1999	08/18/2000	06/05/2015	08/13/1999
7718-54-9	nickel chloride	03/12/1999	08/18/2000	06/05/2015	08/13/1999
12054-48-7	nickel hydroxide	03/12/1999	08/18/2000	06/05/2015	08/13/1999
13138-45-9	nickel nitrate {nickel (II) nitrate}	03/12/1999	08/18/2000	06/05/2015	08/13/1999
1313-99-1	nickel oxide	03/12/1999	08/18/2000	06/05/2015	08/13/1999
12035-72-2	nickel subsulfide	12/07/1990	08/18/2000	06/05/2015	08/13/1999
1271-28-9	nickelocene	03/12/1999	08/18/2000	06/05/2015	08/13/1999
1146	refinery dust from the pyrometallurgical process	12/07/1990	08/18/2000	06/05/2015	08/13/1999
7786-81-4	nickel sulfate	03/12/1999	08/18/2000	06/05/2015	08/13/1999
7697-37-2	nitric acid		*		08/13/1999
98-95-3	nitrobenzene		*		
79-46-9	nitropropane, 2-		*		
759-73-9	nitroso-n-ethylurea, n-	12/07/1990			

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
684-93-5	nitroso-n-methylurea, n-	12/07/1990			
86-30-6	nitrosodiphenylamine, n-	12/07/1990			
156-10-5	nitrosodiphenylamine, p-	09/08/1998			
59-89-2	nitrosomorpholine, n-	01/08/1999			
100-75-4	nitrosopiperidine, n-	01/08/1999			
930-55-2	nitrosopyrrolidine, n-	12/07/1990			
108171-26-2	paraffins, chlorinated (average chain length, c12; approx. 60% cl by weight)	01/08/1999			
127-18-4	perchloroethylene (or tetrachloroethylene)	09/08/1998	09/08/1998		08/13/1999
108-95-2	phenol		08/18/2000		08/13/1999
75-44-5	phosgene		*		08/13/1999
7723-14-0 7803-51-2	**phosphorus and phosphorus compounds** phosphine		* 02/07/2003		
7664-38-2	phosphoric acid		08/18/2000		
85-44-9	phthalic anhydride		06/15/2001		
1336-36-3 32598-13-3 70362-50-4 32598-14-4	**polychlorinated biphenyls (PCBs)** 3,3',4,4' Tetrachlorobiphenyl 3,4,4',5 Tetrachlorobiphenyl 2,3,3',4,4' Pentachlorobiphenyl	12/07/1990 03/04/2005 ~~***~~ 03/04/2005 ~~***~~ 03/04/2005 ~~***~~	** 03/04/2005 ~~***~~ 03/04/2005 ~~***~~ 03/04/2005 ~~***~~		

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
74472-37-0	2,3,4,4',5 Pentachlorobiphenyl	03/04/2005 ***	03/04/2005 ***		
31508-00-6	2,3',4,4',5 Pentachlorobiphenyl	03/04/2005 ***	03/04/2005 ***		
65510-44-3	2',3,4,4',5 Pentachlorobiphenyl	03/04/2005 ***	03/04/2005 ***		
57465-28-8	3,3',4,4',5 Pentachlorobiphenyl	03/04/2005 ***	03/04/2005 ***		
38380-08-4	2,3,3',4,4',5 Hexachlorobiphenyl	03/04/2005 ***	03/04/2005 ***		
69782-90-7	2,3,3',4,4',5' Hexachlorobiphenyl	03/04/2005 ***	03/04/2005 ***		
52663-72-6	2,3',4,4',5.5' Hexachlorobiphenyl	03/04/2005 ***	03/04/2005 ***		
32774-16-6	3,3',4,4',5,5' Hexachlorobiphenyl	03/04/2005 ***	03/04/2005 ***		
39635-31-9	2,3,3'4,4',5,5' Heptachlorobiphenyl	03/04/2005 ***	03/04/2005 ***		
	polycyclic aromatic hydrocarbons (PAHs) [Treated as B(a)P for HRA]				
56-55-3	benz[a]anthracene	12/07/1990			
50-32-8	benzo[a]pyrene	12/07/1990			
205-99-2	benzo[b]fluoranthene	12/07/1990			
205-82-3	benzo[j]fluoranthene	01/08/1999			
207-08-9	benzo[k]fluoranthene	12/07/1990			
218-01-9	chrysene	12/07/1990			
226-36-8	dibenz[a,h]acridine	01/08/1999			

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
224-42-0	dibenz[a,j]acridine	01/08/1999			
53-70-3	dibenz[a,h]anthracene	12/07/1990			
192-65-4	dibenzo[a,e]pyrene	01/08/1999			
189-64-0	dibenzo[a,h]pyrene	01/08/1999			
189-55-9	dibenzo[a,i]pyrene	01/08/1999			
191-30-0	dibenzo[a,l]pyrene	01/08/1999			
194-59-2	dibenzo[c,g]carbazole, 7h-	01/08/1999			
57-97-6	dimethylbenz[a]anthracene, 7,12-	01/08/1999			
42397-64-8	dinitropyrene, 1,6-	01/08/1999			
42397-65-9	dinitropyrene, 1,8-	01/08/1999			
193-39-5	indeno[1,2,3-cd]pyrene	12/07/1990			
56-49-5	methylcholanthrene, 3-	01/08/1999			
3697-24-3	methylchrysene, 5-	01/08/1999			
91-20-3	naphthalene	03/04/2005 ~~***~~	08/18/2000		
602-87-9	nitroacenaphthene, 5-	01/08/1999			
7496-02-8	nitrochrysene, 6-	01/08/1999			
607-57-8	nitrofluorene, 2-	01/08/1999			
5522-43-0	nitropyrene, 1-	01/08/1999			

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
57835-92-4 1150/1151	nitropyrene, 4- polycyclic aromatic hydrocarbons (PAHs), total	01/08/1999 09/08/1998			
1221	**polymeric (oligo) hexamethylene1,6-diisocyanate (HDI)**		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
108-19-0	biuret		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
1226	diisocyanurate		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
1227	hdi prepolymer		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
28182-81-2	hexamethylene diisocyanate homopolymer		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
3779-63-3	hexamethylene diisocyanate isocyanurate trimer		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
125252-47-3	hexane, 1,6-diisocyanato-, homopolymer, polyethylene-polypropylene glycol monobutyl ether-blocked		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
1228	isocyanurate		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
23501-81-7	uretdione (HDI) {uretidone}		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
			Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
7758-01-2	potassium bromate	01/08/1999			
1120-71-4	propane sultone, 1,3-	01/08/1999			
115-07-1	propylene		08/18/2000		
107-98-2	propylene glycol monomethyl ether		08/18/2000		
75-56-9	propylene oxide (or 1,2-epoxy propane)	09/08/1998	02/23/2000		08/13/1999
7782-49-2 7446-34-6	**selenium and selenium compounds** **other than hydrogen selenide** selenium sulfide selenium hexafluoride see fluorides and compounds		05/03/2002 05/03/2002		
1310-73-2	sodium hydroxide		*		08/13/1999
100-42-5	styrene (or vinyl benzene)		08/18/2000		08/13/1999
7664-93-9	sulfuric acid (and oleum)		05/03/2002		08/13/1999
540-88-5	tertiary-butyl acetate (TBAc)	Date of Rule Amendment			
79-34-5	tetrachloroethane, 1,1,2,2-	01/08/1999			
62-55-5	thioacetamide	01/08/1999			

TABLE I TOXIC AIR CONTAMINANTS					
CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
108-88-3	toluene (or methyl benzene)		08/18/2000	08/20/2020	08/13/1999
26471-62-5	**toluene diisocyanates**				
584-84-9	toluene-2,4-diisocyanate	09/08/1998	06/15/2001	03/28/2016	09/01/2017
91-08-7	toluene-2,6-diisocyanate	09/08/1998	06/15/2001	03/28/2016	09/01/2017
79-00-5	trichloroethane, 1,1,2- (vinyl trichloride)	01/08/1999			
79-01-6	trichloroethylene	12/07/1990	08/18/2000		
121-44-8	triethylamine		02/07/2003		08/13/1999
25551-13-7	**trimethylbenzenes**		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
526-73-8	1,2,3-trimethylbenzene		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
95-63-6	1,2,4-trimethylbenzene		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
108-67-8	1,3,5-trimethylbenzene		Date of Rule Amendment	Date of Rule Amendment	Date of Rule Amendment
51-79-6	urethane (or ethyl carbamate)	09/08/1998			
7440-62-2	vanadium (fume or dust)				08/13/1999
1314-62-1	vanadium pentoxide				08/13/1999

TABLE I
TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
108-05-4	vinyl acetate		05/03/2002		
75-01-4	vinyl chloride (or chloroethylene)	12/07/1990	**		08/13/1999
75-35-4	vinylidene chloride (dichloroethylene, 1,1-)		06/15/2001		
1330-20-7	**xylenes (isomers and mixture)**		08/18/2000		08/13/1999
108-38-3	xylene, m-		08/18/2000		08/13/1999
95-47-6	xylene, o-		08/18/2000		08/13/1999
106-42-3	xylene, p-		08/18/2000		08/13/1999
7440-66-6	**zinc and zinc compounds**		*		
	including, but not limited to:				
1314-13-2	zinc oxide		*		

* Compounds not classified as carcinogenic, but have chronic risk values proposed by OEHHA that have not yet been finalized. The effective date is the date the Scientific Review Panel approves the chronic risk value.

** Compounds are classified as carcinogenic, but have chronic risk values proposed by OEHHA that have not yet been finalized. The effective date for use of chronic risk values is the date the Scientific Review Panel approves the chronic risk value.

~~*** Effective date for these risk values will be March 4, 2005 or the date of implementation of the applicable most recent version of Risk Assessment Procedures for Rules 1401, 1401.1 and 212, whichever is later.~~

TABLE II

TOXIC AIR CONTAMINANTS WITH PROPOSED RISK VALUES

CAS #	SUBSTANCE
79-10-7	acrylic acid
107-05-1	allyl chloride
7783-20-2	ammonium sulfate
62-53-3	Aniline
1309-64-4	antimony trioxide
	arsenic compounds (other than inorganic)
532-27-4	chloroacetophenone, 2-
75-45-6	chlorodifluoromethane (HCFC-22)
7440-48-4	cobalt and cobalt compounds
74-85-1	Ethylene
96-45-7	ethylene thiourea
	fluorides and fluoride compounds
87-68-3	hexachlorobutadiene
67-72-1	hexachloroethane
822-06-0	hexamethylene-1,6-diisocyanate
78-93-3	methyl ethyl ketone (or 2-butanone)
7697-37-2	nitric acid
156-10-5	nitrosodiphenylamine, p-
7440-22-4	silver and silver compounds
96-09-3	styrene oxide
79-00-5	trichloroethane, 1,1,2-
593-60-2	vinyl bromide

ATTACHMENT G

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report
Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants

August 2026

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EXECUTIVE SUMMARY

South Coast Air Quality Management District (South Coast AQMD) Rule 1401 – New Source Review of Toxic Air Contaminants (Rule 1401) specifies limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI) from new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants (TACs). Permit applications where an operation would emit or emits TACs listed in Table 1 of Rule 1401 are required to undergo a health risk assessment and be below the established limits to receive a permit ~~to operate~~.

The California Office of Environmental Health Hazard Assessment (OEHHA) establishes risk exposure levels (i.e., risk values) for TACs. The compounds listed in Table I are periodically updated to reflect the new chemical compounds identified by OEHHA as a TAC.

PAR 1401 would update one existing compound and add nine new parent compounds and its associated compounds into Table 1, remove compounds from Table I, and add a new column in Table I to include the effective date for 8-hour reference exposure levels (RELs). Amendments to define and reference 8-hour chronic hazard index will be included and Table II will ~~also~~ be removed. PAR 1401 will impact facilities that submit a permit application for a new, modified, or relocated equipment or source that emits any toxic air contaminant listed in Table 1 where the permit application is deemed complete after PAR 1401 is adopted. Existing permits with no further permit action are not impacted by PAR 1401. PAR 1401 may have cost impacts related to the installation of controls.

CHAPTER 1 – BACKGROUND

Introduction

South Coast AQMD implements a permitting program to comply with federal, state, and local air quality rules and regulations for stationary sources that emit air pollutants such as nitrogen oxide (NOx), volatile organic compounds (VOC), sulfur dioxide (SO2), particulate matter (PM), and toxic air contaminants (TACs). Permit applications are evaluated for compliance with all applicable rules and regulations and look at factors such as air pollutant emissions, health risks, and distances to sensitive receptors, such as to schools. If an equipment or source emits TACs, the equipment or source is subject to Rule 1401.

Rule 1401 specifies limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI) from new permit units or relocations, or modifications to existing permit units which emit toxic air contaminants listed in Table I. The methodology used to estimate health risks for South Coast AQMD's toxic regulatory program, including Rule 1401, is based on guidance from OEHHA. OEHHA's Risk Assessment Guidelines are incorporated in the South Coast AQMD Risk Assessment Procedures, which is used when implementing Rule 1401.

Regulatory History

Rule 1401

Rule 1401 was adopted by the AQMD Governing Board in June 1990. It is amended periodically to add new compounds or new risk values to the list of TACs as they are identified and risk values are finalized or amended by OEHHA. The rule has been amended 18 times to add new compounds or update risk factors after approval by OEHHA. The last amendment was in 2017. During the amendment process, staff analyzed potential permitting impacts for spray booths and gasoline dispensing facilities from implementing South Coast AQMD's Risk Assessment Procedures Version 8.1 and transitioned to using the 2015 OEHHA HRA Guidelines for all permitted sources. The 2017 amendments incorporated additional compounds and risk thresholds into Table I. Currently, the latest version of the Risk Assessment Procedure is Version 9.0.

Rule 1401 establishes cancer and non-cancer health risk thresholds for new, relocated, or modified permitted sources of toxic air pollutants. Maximum individual cancer risk (MICR) cannot exceed one in one million. If best available control technology for toxics (T-BACT) is installed, the MICR cannot exceed 10 in one million. The MICR is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants. Cancer burden may not exceed 0.5. Cancer burden represents the estimated increase in the occurrence of cancer cases in a given population due to exposure to TACs. For non-cancer health risk, both chronic and acute, the threshold is a hazard index (HI) of 1.0. A hazard index is the sum of the Hazard Quotients of all TACs emitted that affect the same target organ. A hazard quotient is the ratio of the estimated maximum concentration of a TAC for the maximally exposed individual to its reference exposure level (REL). If any of the thresholds are exceeded, Rule 1401 prohibits issuance of a permit.

Rule 1401 Cancer Risk Threshold	Rule 1401 Noncancer Risk Threshold
1 in a million without T-BACT	Acute hazard index of 1
10 in a million with T-BACT	Chronic hazard index of 1

South Coast AQMD Permitting Process

The flow chart below summarizes the permitting process in four main steps.

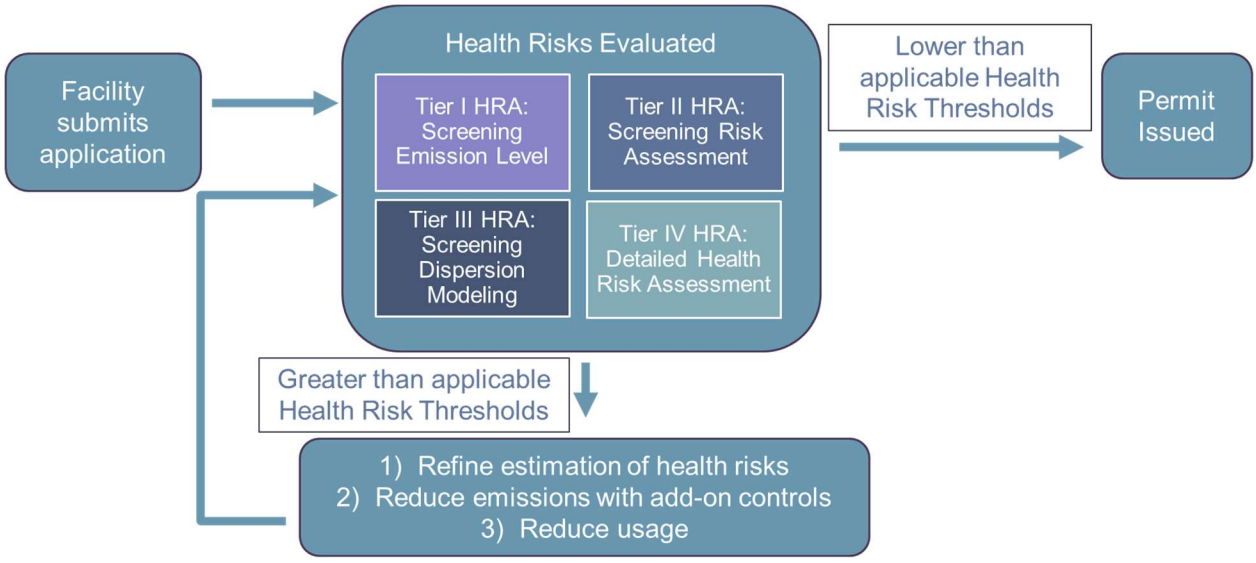
Overview of Permitting Process

The first step is submitting a permit application. Pursuant to Rule 201 – Permit to Construct, equipment that may cause the issuance of air contaminants or that may eliminate, reduce, or control the issuance of air contaminants requires authorization or a permit from South Coast AQMD, unless the equipment is determined to be exempt pursuant to Rule 219 – Equipment Not Requiring A Written Permit Pursuant to Regulation II. Note that some Rule 219 equipment might need to be registered pursuant to Rule 222 – Filing Requirements For Specific Emission Sources Not Requiring A Written Permit Pursuant To Regulation II. After a permit application is submitted, South Coast AQMD staff may require additional information before the permit application can be evaluated. During this time, the applicant may be asked for additional information or details regarding their equipment. Once sufficient information is received, the permit application is deemed complete. Therefore, the date the permit application is deemed complete generally is not the same date as when the permit application is submitted. This distinction is critical because the date the permit application is deemed complete is the date that determines the:

- Version of Rule 1401 Table I that is used; and
- TACs and corresponding health values.

During the permit application evaluation process, a health risk assessment (HRA) is performed by permitting staff for new, modified, or relocated equipment to determine if the health risks are less than the Rule 1401 cancer and noncancer risk thresholds.

Figure 1 Permit Evaluation Process



South Coast AQMD's Risk Assessment Procedures describe four different HRA tiers, which are different from the OEHHA Risk Assessment Guidelines tiered approach, and the health risks from permitted equipment can be estimated using any of the HRA tiers. If the evaluation determines that the health risks from equipment are less than the Rule 1401 health risk thresholds and the equipment demonstrates compliance with all applicable rules and regulations, then a permit can be issued. However, if the evaluation determines the health risks from the equipment is greater than the health risk thresholds, then additional steps will need be taken to reduce the health risks below the thresholds before a permit can be issued. The following paragraphs describe the three different pathways a facility can take to reduce health risks associated with the equipment.

One pathway to show reduced health risks is by refining health risk estimation using higher HRA tiers, as shown in Figure 1. The HRA tiers are in order of increasing complexity, providing a more refined estimate of health risks at the higher tiers. The higher the HRA tier, the more information is required to perform the dispersion modeling required, such as:

- Distance from the source to the nearest off-site residential and worker receptor(s)
- Source characteristics, such as stack height and/or building dimensions
- Operating schedule
- Geographic location coordinates

Specific details on how each of the HRAs are conducted can be found in the South Coast AQMD Risk Assessment Procedures.[1] Note that in conjunction with this rule amendment, staff is updating the Risk Assessment Procedures and the online Risk Tool to reflect the additional TACs proposed to be added to Table I as well as other administrative changes.

[1] South Coast Air Quality Management District. (2026). Risk Assessment Procedures for Rules 1401, 1401.1, and 212. https://www.aqmd.gov/home/permits/PermittingHRA

In addition, the applicant may also propose alternative operating parameters, such as a limit on operating hours, alternative emission rates, increased control efficiency, or a different particle size distribution, all of which need to be supported by studies and evidence. By utilizing a higher HRA tier and refining the estimation of health risks and/or modifying the operating assumptions, applicants can reduce the health risks to below the Rule 1401 thresholds or potentially operate with a greater throughput than that resulting from a Tier I HRA.

The second pathway to reduce health risks is by installing control equipment to reduce the emission of TACs. The appropriate control equipment will vary depending on the following:

- Amount of emission reduction required (e.g., control efficiency of 85% vs 99.97%)
- Pollutant specifications (e.g., corrosivity, outlet temperature, size)
- Type of pollutant (e.g., VOC or particulate)

The third pathway to reduce health risk is reducing the usage of the product containing the TACs being evaluated from the amount originally applied for or proposing a lower throughput.

Compounds with New or Amended Cancer Potency Factors and Non-Cancer Reference Exposure Levels

OEHHA oversees the development and amendment of health values for different compounds through an extensive public process. For each compound, OEHHA publishes a technical support document that provides justification for the new or amended health values. OEHHA utilizes a specific methodology for deriving health values, such as conducting literature reviews or utilizing values established by other agencies. These methodologies are reviewed by the Scientific Review Panel. This is an advisory committee composed of nine appointed members who are experts in their respective fields. They are charged with evaluating the risk assessments of substances proposed for identification as toxic air contaminants by CARB, OEHHA, and the Department of Pesticide Regulation, and reviewing guidelines prepared by OEHHA.

For inhalation exposure, OEHHA develops four potential heath values:

- Cancer Potency
- Reference Exposure Level (REL)
    - Acute
    - 8-Hour
    - Chronic

The cancer inhalation risk is the excess cancer risk associated with continuous inhalation exposure to a given carcinogen at 1 microgram per cubic meter ($\mu g/m^3$) over a lifetime (70 years). The cancer potency factor estimates excess lifetime cancer risk associated with exposure at 1 milligram per kilogram of body weight per day (mg/kg-d).[2]

[2] OEHHA. (2025). Isoprene Cancer Inhalation Unit Risk Factor Technical Support Document for Cancer Potency Factors Appendix B. https://oehha.ca.gov/sites/default/files/media/2025-01/IsopreneIUR010325.pdf

REL is the maximum concentration level of a substance in the air that is not expected to have adverse health effects in humans over a specified exposure duration. Therefore, an increase in the REL or dose level would indicate a less stringent value for the compound and a lower REL would mean that the value has become more stringent. RELs can be acute, 8-hour, or chronic. Exposure averaging time for acute RELs is 1 hour. For 8-hour RELs, the exposure averaging time is 8 hours, which may be repeated. Chronic RELs are designed to address continuous exposures for up to a lifetime and the exposure metric used is the annual average (mean) exposure.[3] Note that the 8-hour REL is chronic exposure and the estimation on 8-hour concentrations is based on the long-term concentration, not the acute concentration.

These health values are updated and incorporated into the Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values.[4] This table lists all the health values that have been approved to be used in a facility health risk assessment. Since the most recent amendment, nine compounds were added, and the health values for one compound were updated. Each compound's health effect and potential sources of the compound are summarized below.

1-Bromopropane (Chemical Abstracts Service Number 106-94-5)

In 2023, OEHHA developed acute, 8-hour, and chronic RELs for 1-bromopropane. It is a colorless liquid at room temperature. Acute effects from exposure affect the reproductive system and nervous system. Nervous system effects include dizziness, headaches, and nausea. Sources of 1-bromopropane include being a solvent vehicle for adhesives in laminates and foam products, degreasing/cleaning agent for metals, metal products, plastics, optics, and electronics, and alternative solvent in modified perchloroethylene dry-cleaning machines.[5] Based on Annual Emission Reporting and permitting data, the primary sources within South Coast AQMD are cleaning solvents and dry cleaners.

1,4-Dichlorobenzene (Chemical Abstracts Service Number 106-46-7)

1,4-Dichlorobenzene is a compound that was added to Rule 1401 Table I in 1998. In 2025, OEHHA adopted new acute and 8-hour RELs, and a revised chronic REL. 1,4-Dichlorobenzene is a colorless or white crystalline solid that sublimes at ambient temperatures. Acute effects from exposure include irritation to the eyes and nose and chronic effects include damage to the nervous system and liver. Sources of 1,4-dichlorobenzene include deodorant for toilets, urinals, and refuse containers, moth repellant for clothing, fumigant to control mold, and landfills.[6] Based on Annual

[3] OEHHA. (2023). OEHHA Acute, 8-hour and Chronic Reference Exposure Level (REL) Summary. https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary

[4] OEHHA. (2025). Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. https://ww2.arb.ca.gov/sites/default/files/classic/toxics/healthval/contable09252025.pdf

[5] OEHHA. (2023). 1-Bromopropane Reference Exposure Levels Technical Support Document for the Derivation of Noncancer Reference Exposure Levels Appendix D1. https://oehha.ca.gov/media/downloads/crnr/1-bpsrprel052823.pdf

[6] OEHHA. (2025). 1,4-Dichlorobenzene Reference Exposure Levels Technical Support Document for the Derivation of Noncancer Reference Exposure Levels Appendix D1. https://oehha.ca.gov/sites/default/files/media/2025-07/1%2C4-DCB%20REL071825_2.pdf

Emission Reporting and permitting data, primary sources within South Coast AQMD are sewage treatment plants, landfills, and refineries.

Cobalt (Chemical Abstracts Service Number 7440-48-4)

In 2020, 2022, and 2023 OEHHA adopted cancer potency factors and cancer inhalation risk factors for cobalt. Cobalt, a hard but somewhat malleable metal, is a carcinogen; acute and chronic exposure to cobalt can affect the respiratory system causing bronchial tumors, asthma-like symptoms, and hard metal lung disease. Sources of cobalt include the petroleum industry, concrete and cement manufacturing facilities, electronic computer manufacturers, semiconductor and electronic components facilities, military and commercial aerospace products and parts manufacturing, tungsten carbide and other super alloy manufacturing, mining and refining operations, lumber mills, and battery manufacturers.[7] Based on Annual Emission Reporting and permitting data, the primary source within South Coast AQMD is abrasive blasting.

Hexamethylene Diisocyanate (HDI) Monomer (Chemical Abstracts Service Number 822-06-0) and Polymeric Hexamethylene Diisocyanate (HDI) (CARB Air Toxics Hot Spots Emission Inventory Code 1221)

In 2019, 2022, and 2025 OEHHA adopted chronic, 8-hour, and acute RELs for HDI Monomer and Polymeric HDI. HDI monomer is an organic compound that is a clear to slightly yellow liquid. Polymeric HDI is the term often used to refer to a mixture of HDI monomer and various higher molecular weight diisocyanate reaction products. Acute exposure to these compounds affects the respiratory system leading to asthma and bronchitis. Sources of these compounds include hardeners for automobile and airplane polyurethane spray paints, including primers, sealers, and clear coats, and coatings for outdoor furniture, parquet and industrial wood, and architectural finishing.[8] Based on Annual Emission Reporting and permitting data, the primary sources within South Coast AQMD are spray booths in the automotive, aerospace, and metal coatings industry that are spraying polyurethane coatings.

Isoprene (Chemical Abstracts Service Number 78-79-5)

In 2025, OEHHA adopted cancer potency factors and cancer inhalation risk factors for isoprene. Isoprene is a colorless liquid with a mild petroleum like odor. It is a carcinogen and long-term exposure can affect the respiratory system causing lung cancer. Sources of isoprene include thermal cracking of petroleum naphtha, biomass combustion, synthetic rubber production, wood

[7] OEHHA. (2023). Cobalt and Cobalt Compounds Cancer Inhalation Unit Risk Factors Technical Support Document for Cancer Potency Factors Appendix B. https://oehha.ca.gov/media/downloads/crnr/finalcobalt080423.pdf

[8] OEHHA. (2019). Hexamethylene Diisocyanate Reference Exposure Levels (Monomer and Polyisocyanates) Technical Support Document for the Derivation of Noncancer Reference Exposure Levels Appendix D1. https://oehha.ca.gov/sites/default/files/media/downloads/crnr/hidrel090519.pdf

pulping, and exhaust from turbines and automobiles.[9] Based on Annual Emission Reporting and permitting data, the primary source within South Coast AQMD are petroleum refineries.

Parachlorobenzotrifluoride (Chemical Abstracts Service Number 98-56-6)

In 2020, OEHHA adopted cancer potency factors and cancer inhalation risk factors for parachlorobenzotrifluoride (pCBtF), which is a colorless liquid. OEHHA has determined it to be a carcinogen and exposure can affect the respiratory system, liver, and kidneys. Sources of pCBtF include preparation of dyes, pharmaceuticals, pesticides, and as a solvent in paints, inks, and high-solids coating formulations, as well as for metal cleaning.[10] Based on Annual Emission Reporting and permitting data, the primary sources within South Coast AQMD are solvent cleaners for lithographic printing operations, adhesives and sealants, and coatings used in various industries such as automotive, aerospace, metal coatings, wood coatings, marine coatings, architectural coatings, paper coating, fabric coating, film coating, plastic coating, rubber coating, leather coating, and glass coating.

Tertiary Butyl Acetate (Chemical Abstracts Service Number 540-88-5)

In 2018, OEHHA adopted cancer potency factors and cancer inhalation risk factors for tertiary butyl acetate (t-BAc) which is colorless flammable liquid. It is a carcinogen and inhalation can affect the nervous system and irritate the eyes and nose. Sources of t-BAc include industrial coatings, inks, adhesives, industrial cleaners, and degreasers.[11] Like pCBtF, t-BAc is a solvent commonly used due to its low reactivity and doesn't significantly contribute to the formation of ground-level ozone. Based on Annual Emission Reporting and permitting data, the primary sources within South Coast AQMD are solvent cleaning operations, adhesive and sealant applications, and coatings used in various industries such as automotive, aerospace, metal coatings, wood coatings, marine coatings, architectural coatings, paper coating, fabric coating, film coating, plastic coating, rubber coating, leather coating, and glass coating

Trimethylbenzene (Chemical Abstracts Service Number 25551-13-7)

In 2023, OEHHA adopted chronic, 8-hour, and acute RELs for trimethylbenzene which is a colorless liquid that exists in three isomeric forms: 1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. Acute exposure can affect the nervous system causing dizziness as well as respiratory irritation such as bronchitis. Sources of trimethylbenzene include surface coatings, paints, printing inks, cleaning fluids, petroleum refinery distillation products (white spirit, high flash point naphtha, and gasoline), steel making facilities, and coal

[9] OEHHA. (2025). Isoprene Cancer Inhalation Unit Risk Factor Technical Support Document for Cancer Potency Factors Appendix B. https://oehha.ca.gov/sites/default/files/media/2025-01/IsopreneIUR010325.pdf

[10] OEHHA. (2020). p-Chloro-α,α,α-trifluorotoluene (p-Chlorobenzotrifluoride, PCBTF) Cancer Inhalation Unit Risk Factor Technical Support Document for Cancer Potency Factors Appendix B. https://oehha.ca.gov/media/downloads/crnr/pcbtfiur080720.pdf

[11] OEHHA. (2018). Tertiary-Butyl Acetate Cancer Inhalation Unit Risk Factor Technical Support Document for Cancer Potency Factors Appendix B. https://oehha.ca.gov/media/downloads/crnr/tbaccanceriur081018.pdf

fired plants.[12] Based on Annual Emission Reporting and permitting data, the primary sources within South Coast AQMD are spray booths in the automotive, aerospace, metal coatings, and wood coatings industries.

Trivalent Chromium (Chemical Abstracts Service Number 16065-83-1)

In 2022, OEHHA adopted chronic, 8-hour, and acute RELs for trivalent chromium (Cr3+). Chromium is a heavy metal that can exist in oxidation states ranging from -2 to +6 with trivalent chromium denoted as Cr+3. Exposure to trivalent chromium can cause respiratory irritation such asthma and decreased lung function. Sources of trivalent chromium include dietary supplements, pigments, catalysts, anti-corrosives, leather tanning agents, decorative plating media, and cement and concrete.[13] Based on Annual Emission Reporting and permitting data, the primary source within South Coast AQMD is decorative chrome plating.

Need for Proposed Amended Rule 1401

During the South Coast AQMD permitting process, Table I is utilized by permitting staff to determine which TACs are required to be evaluated during the health risk assessment. PAR 1401 is needed to:

- Add new TACs,
- Add effective dates for existing TACs with new health values, and
- Remove some TACs that are not evaluated during the permitting process.

Affected Facilities

Permit applications deemed complete after date of rule amendment will be subject to PAR 1401. PAR 1401 applies to equipment or a source that emits one or more TACs listed in Table I that is:

- New,
- Modified (resulting in health risk increase), or
- Relocated.

PAR 1401 will not apply to:

- Applications deemed complete prior to the date of amendment, or
- Existing permits where no further permit actions are taken.

Applications deemed complete prior to the date of rule amendment would be subject to the 2017 version of the rule.

[12] OEHHA. (2023). Trimethylbenzenes Reference Exposure Levels Technical Support Document for the Derivation of Noncancer Reference Exposure Levels Appendix D1. https://oehha.ca.gov/media/downloads/crnr/tmbrelfinal100602023.pdf

[13] OEHHA. (2022). Chromium, Trivalent (Inorganic Water-Soluble Compounds) Reference Exposure Levels Technical Support Document for the Derivation of Noncancer Reference Exposure Levels Appendix D1. https://oehha.ca.gov/media/downloads/air/document/finalcriiirel083122.pdf

Public Process

The development of PAR 1401 has been conducted through a public process. Four Working Group Meetings were held to allow the public and stakeholders to discuss details of PAR 1401 and provide South Coast AQMD staff with input during the rule development process. The Working Group includes business representatives, environmental and community groups, public agencies, and consultants. South Coast AQMD held Working Group Meetings on December 19, 2023; July 9, 2024; March 5, 2026; and April 30, 2026 via Zoom videoconference and teleconference. A Public Workshop was held on May 27, 2026.

CHAPTER 2 – SUMMARY OF PROPOSED AMENDED RULE 1401

Overview

As discussed in Chapter 1, Rule 1401 establishes cancer and non-cancer health risk requirements for new, relocated, or modified permitted sources of toxic air pollutants. Table I lists the compounds OEHHA has adopted as a TAC and includes the effective dates for cancer and noncancer health effects, such as chronic, 8-hour, and acute. Table II lists TACs with proposed risk values, which can be added into Table I after OEHHA establishes health values and Rule 1401 is amended. The following is an overview of PAR 1401 amendments.

- Additional definitions
- Capitalization of Defined Terms
- Alignment with the Risk Assessment Procedures
- Addition of 8-Hour Chronic Hazard Index
- Table I
    - Addition of New Compounds
    - Update of RELs for Existing Compounds
    - Addition of Child Compounds
    - Addition of 8-hour RELs
    - Removal of Chemical Compounds
    - Removal of Table I Footnote
    - Amendments to Better Identify Specific Compounds
- Removal of Table II

Subdivision (c) Definitions

Due to the inclusion of 8-hour RELs in Table I, two definitions will be added for 8-hour chronic hazard index. The following definitions below will be added:

INDIVIDUAL SUBSTANCE 8-HOUR CHRONIC HAZARD INDEX (HI) is the ratio of the estimated 8-hour exposure to a toxic air contaminant for a potential maximally exposed individual to its 8-hour reference exposure level.

TOTAL 8-HOUR CHRONIC HAZARD INDEX (HI) is the sum of the individual substance 8-hour HIs for all toxic air contaminants affecting the same target organ system.

Capitalization of Defined Terms

To align with the formatting in other South Coast AQMD rules, defined terms from subdivision (c) will be capitalized throughout the rule.

Amendments will be made to clarify total health index or individual substance health index throughout the rule and the terms will be capitalized.

Alignment with the Risk Assessment Procedures

Subdivision (d) establishes the health risk thresholds for maximum individual cancer risk, cancer burden, chronic hazard index, 8-hour chronic hazard index, and acute hazard index. Subdivision

(f) outlines the methodology to calculate the emissions and determine the respective hazard indexes. This methodology aligns with the South Coast AQMD Risk Assessment Procedures.

PAR 1401 clarifies that the methodology to calculate emissions specified in subdivision (f) would be used in subdivision (d).

Addition of 8-Hour Chronic Hazard Index

Subparagraph (d)(2)(B) will be added to deny a permit to construct a new, relocated or modified permit if exceeding health risk threshold of 1.0 for 8-hour chronic hazard index due to the inclusion of 8-hour RELs in Table I. This addition is consistent with the current Risk Assessment Procedures.

Amendments will also be made throughout the rule to appropriately include the 8-hour chronic hazard index, such as when the requirement specifies acute or chronic hazard index as a criteria or when the requirement specifies how to perform emission calculations.

An example would be subparagraph (g)(1)(B):

(g) Exemptions

(1) The requirements of subdivision (d) shall not apply to:

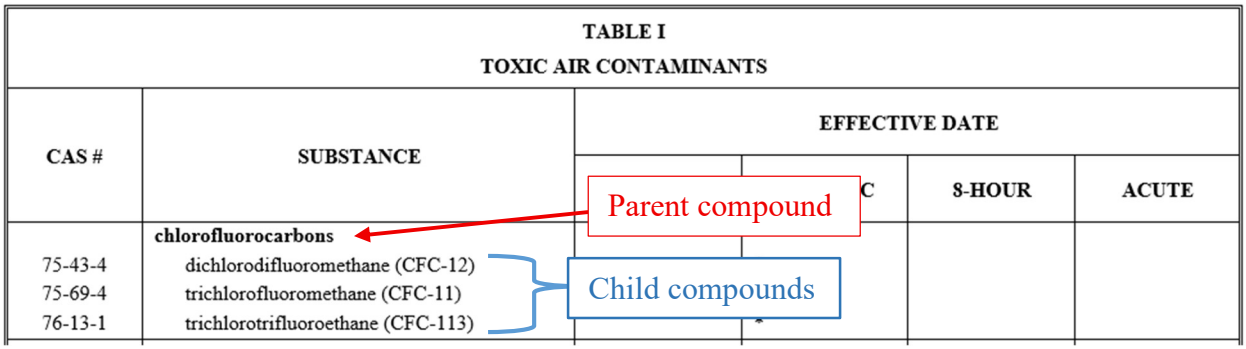
(B) Modification with No Increase in Risk

A ~~m~~Modification of a ~~p~~Permit ~~u~~Unit that causes a reduction or no increase in the e<u>C</u>ancer ~~b~~<u>B</u>urden, MICR, ~~or~~ <u>Total a</u>Acute <u>HI, Total 8-Hour Chronic HI,</u> or <u>Total e</u>Chronic HI at any ~~r~~<u>R</u>eceptor ~~l~~<u>L</u>ocation.

Table I

Table I provides the Chemical Abstracts Number (CAS), 4-digit Air Toxics Hot Spots Emission Inventory Code assigned by CARB (if any), chemical compound (referred to as substance in Table I) name, and the effectives dates for cancer, chronic, and acute REL. While not defined in PAR 1401, but to provide clarity for this chapter, chemical compounds will be categorized as "parent compounds" and "child compounds". Parent compounds are the original chemical compound (e.g. chlorofluorocarbons) and child compounds (e.g., dichlorodifluoromethane) are derived from the parent compound. In Table I, parent compounds and child compounds are listed in one row with the parent compound in bold. Figure 2 provides an example of a parent and child compound in Table I.

Figure 2 Example of Parent and Child Compound



Addition of New Compounds

To reflect the new TACs adopted by OEHHA since 2017, PAR 1401 will include new parent compounds and their child compounds, CAS, and the effective dates for the applicable RELs. The effective date is the date of rule amendment. The exception is pCBtF. The effective date for pCBtF will be December 31, 2027. This is to correspond with the phase out and product reformulation requirements provided in source specific rules that address pCBtF. This approach will minimize installation of pollution controls that would become stranded assets when manufacturers reformulate the coatings and solvents to eliminate pCBtF.

The new compounds are listed below:

Compound Name	CAS Number
1-bromopropane	106-94-5
Cobalt	7440-48-4
Hexamethylene Diisocyanate (HDI) (Monomer)	822-06-0
Isoprene	78-79-5
Parachlorobenzotrifluoride (pCBtF)	98-56-6
Polymeric Hexamethylene Diisocyanate	1221*
Tertiary Butyl Acetate (t-BAc)	540-88-5
Trimethylbenzenes	25551-13-7
Trivalent chromium	16065-83-1

*4-digit Air Toxics Hot Spots Emission Inventory Code assigned by CARB

Update of RELs for Existing Compounds

PAR 1401 will add an effective date to existing compounds that have new REL approved by OEHHA.

Dichlorobenzene, 1,4- (or p-dichlorobenzene) had a new acute REL adopted in 2025. The effective date will be the date of rule amendment.

Ethylene glycol butyl ether (CAS 11-76-2) is currently listed on the existing Rule 1401 Table 1, but its effective date for chronic REL was denoted as a single asterisk. The asterisk meant that at the time of the last rule amendment the chronic risk value proposed by OEHHA had not yet been finalized and the effective date would be the date the Scientific Review Panel approves the chronic risk value. The Panel approved the chronic risk value on May 4, 2018 and that date has been added to PAR 1401. This amendment makes more explicit the current practice of evaluating the chronic REL of this compound during the permitting process.

Addition of Child Compounds

PAR 1401 will also add child compounds for all existing parent compounds. This update follows the practice in the CARB and OEHHA Consolidated Table of providing child compounds. In addition, it makes explicit that child compounds are already being evaluated during health risk assessments. Each added child compound will have the same effective date as the parent compound. The child compounds will be added for the following existing parent compounds:

Compound Name	CAS Number
Aniline	62-53-3
Arsenic and arsenic compounds (inorganic)	7440-38-2
Asbestos	1332-21-4
Benzidine (and its salts)	92-87-5
Beryllium and beryllium compounds	7440-41-7
Cadmium and cadmium compounds	7440-43-9
Chromium (hexavalent) and chromium compounds	18540-29-9
dibenzofurans (chlorinated)	None
dinitrotoluene, 2,4-	121-14-2
Fluorides and compounds	1101*
Manganese and manganese compounds	7439-96-5
Nickel and nickel compounds	7440-02-0
Selenium and selenium compounds other than hydrogen selenide	7782-49-2

*4-digit Air Toxics Hot Spots Emission Inventory Code assigned by CARB

Addition of 8-Hour Reference Exposure Levels

PAR 1401 will add a new column for 8-hour REL. In the Air Toxics Hot Spots Program Technical Support Document for the Derivation of Noncancer RELs adopted in 2008, the use of an 8-hour REL was introduced. The chronic noncancer health impacts on offsite workers was traditionally assessed with chronic RELs, however, as offsite workers generally work 8 hours and not 24 hours, 8-hour RELs are a more accurate assessment of the health impacts of their exposures.[14] On June 5, 2015, under the Risk Assessment Procedures (version 8.0), South Coast AQMD began evaluating 8-hour chronic hazard index as part of a HRA. South Coast AQMD's Risk Assessment Procedures consider the non-cancer 8-hour health risk as chronic exposure (referred to as HIC8). The addition of this column to Table I clarifies and memorializes the current permitting practice.

Compounds in Table I that have an 8-hour REL listed in the CARB and OEHHA Consolidated Table will have an effective date added into Table I. The effective dates will vary depending on the compound and fall under three different categories:

1. Compounds on the Consolidated Table that had 8-hour RELs adopted before June 5, 2015, will have the effective date listed in PAR 1401 Table I as June 5, 2015.
   Example: Acetaldehyde (CAS 75-07-0) has the 8-hour REL dated listed as 12/2008 in the Consolidated Table. For PAR 1401 Table I, the effective date will be 06/05/2015.

2. For existing compounds listed in Table I that had 8-hour RELs adopted after June 5, 2015, the effective date will be the date the 8-hour REL was adopted by OEHHA or the date the compound was added into Rule 1401 Table 1, whichever is later. The OEHHA notice of adoption dates are listed on their website.[15]
   Example: Toluene (CAS 108-88-3) has the 8-hour REL notice of adoption date as 8/20/2020 on OEHHA's website. For PAR 1401 Table I, the effective date will be 8/20/2020.

3. For the nine new parent compounds and their child compounds, the effective date will be the date when PAR 1401 is amended.
   Example: Trimethylbenzenes (CAS 25551-13-7) has the 8-hour REL date listed as 10/2023. For PAR 1401 Table I, the effective date will be the date when PAR 1401 is amended since this is a new compound into Table I.

Removal of Chemical Compounds

PAR 1401 will remove two compounds from Table I.

Gasoline vapors will be removed. Gasoline vapors is not listed on the CARB and OEHHA Consolidated Table. This compound is also documented in Appendix VII of the South Coast AQMD Risk Assessment Procedures which explains that it is evaluated by its constituents which are benzene, ethylbenzene, and naphthalene which have risk factors. However, there are additional

[14] OEHHA. (2008). Air Toxics Hot Spots Risk Assessment Guidelines Technical Support Document For the Derivation of Noncancer Reference Exposure Levels. https://oehha.ca.gov/sites/default/files/media/downloads/crnr/noncancertsdfinal.pdf

[15] OEHHA. (2026). Air Toxics Hot Spots. https://oehha.ca.gov/air/air-toxics-hot-spots

constituents which will be added during this amendment, such as isoprene, which will necessitate an update to the Risk Assessment Procedures for gasoline dispensing facilities.

Methyl mercury will be removed as it is a different compound than inorganic mercury. A footnote in the CARB and OEHHA Consolidated Table notes that this compound was removed in 2014 because "methyl mercury has different chemical properties, potency, and toxicity compared to elemental mercury and mercury salts, and it is not emitted directly from any California facilities". Methyl mercury is an organic compound, but the parent compound it is listed under is mercury and inorganic mercury compounds, which is not accurate.

There are additional compounds listed in Table I that are not included in the OEHHA/CARB consolidated table. Risk Values have been proposed for these additional compounds. They will remain listed in Table I, they are not required to be included in health risk assessments until risk values have been finalized by the Scientific Review Panel, as noted in Table I footnotes.

Removal of Table I Footnote

In Table I, the effective date for certain compounds is listed as March 4, 2005 with a three-asterisk footnote. The three-asterisk footnote states: "Effective date for these risk values will be March 4, 2005 or the date of implementation of the applicable most recent version of Risk Assessment Procedures for Rules 1401, 1401.1 and 212, whichever is later." For clarity, the three-asterisk footnote will be removed and the effective date will remain March 4, 2005 for the following compounds:

Compound Name	CAS Number
3,3',4,4' Tetrachlorobiphenyl	32598-13-3
3,4,4',5 Tetrachlorobiphenyl	70362-50-4
2,3,3',4,4' Pentachlorobiphenyl 2,3,4,4',5 Pentachlorobiphenyl	32598-14-4 74472-37-0
2,3',4,4',5 Pentachlorobiphenyl	31508-00-6
2',3,4,4',5 Pentachlorobiphenyl	65510-44-3
3,3',4,4',5 Pentachlorobiphenyl	57465-28-8
2,3,3',4,4',5 Hexachlorobiphenyl	38380-08-4
2,3,3',4,4',5' Hexachlorobiphenyl	69782-90-7
2,3',4,4',5.5' Hexachlorobiphenyl	52663-72-6
3,3',4,4',5,5' Hexachlorobiphenyl	32774-16-6
2,3,3'4,4',5,5' Heptachlorobiphenyl	39635-31-9
naphthalene	91-20-3

Amendments to Better Identify Specific Compounds

To align with the CARB and OEHHA Consolidated Table, compound names, CAS numbers, and 4-digit Air Toxics Hot Spots Emission Inventory Codes will be amended or added to existing compounds to better identify the specific compound. The following amendments are being made for clarity:

Compound Name	Amendment
bis(2-chloroethyl)ether (DCEE)	Adding "[dichloroethylether]" to the compound name
bis(2-ethylhexyl)phthalate (DEHP)	Adding "[di(2-ethylhexyl)phthalate]" to the compound name
copper and copper compounds	Adding "[including but not limited to: copper fume (as copper)]" to the compound name and including the 4-digit code 1067.
total dioxins, with individual isomers reported	Adding 4-digit code 1085
total dioxins, without individual isomers reported	Adding 4-digit code 1086
lead compounds (inorganic)	Adding 4-digit code 1128
polycyclic aromatic hydrocarbons (PAHs)	Adding "[Treated as B(a)P for HRA]" to the compound name
refinery dust from the pyrometallurgical process	Adding 4-digit code 1146
toluene diisocyanates	Adding CAS 26471-62-5

Table II

For informational purposes, Rule 1401 Table II lists TACs that have proposed risk values or are in development at OEHHA but this is not the most updated list. Since Table II is not referenced in Rule 1401 or any other South Coast AQMD rules, PAR 1401 will delete Table II. For the most updated information on TAC risk values in development, OEHHA has draft assessments for in process compounds which can be found on their website.[16]

[16] OEHHA. (2026). OEHHA – Air. https://oehha.ca.gov/air

CHAPTER 3 – IMPACT ASSESSMENT

Background

The Governing Board previously directed staff that when OEHHA revises risk values for new and existing toxic air contaminants, South Coast AQMD staff will analyze impacts on permitting and AB 2588 and incorporate this information in the South Coast AQMD AB 2588 Annual Report. Consistent with this direction, analyses of Rule 1402 impacts related to OEHHA's actions are addressed in past AB 2588 annual reports or will be addressed in the 2025 AB 2588 Annual Report. Impacts on permitting were analyzed as part of this rule development and the results discussed below.

Affected Sources

PAR 1401 applies when a facility submits a permit application for a new, modified, or relocated equipment or source that emits any TACs listed in Table I. PAR 1401 will add nine new compounds. An impact analysis was conducted to assess the regulatory impacts of adding new compounds and health risk values to Table I. The impact analysis consisted of:

1. Identifying the potential sources of the compound by evaluating available information from:
   - Annual Emission Reporting data (AER),
   - Alternative assessments conducted by another regulatory agency, such as CARB
   - Permit applications and associated submitted documents, such as Technical Data Sheet (TDS), or
   - Rule development documents, such as staff reports or equipment databases.
2. Assessing if the inclusion of the compound into PAR 1401 would have a potential impact. Even if the compound was not previously on Table I, impacts may be minimal for the following reasons:
   - Throughput is prohibited or restricted by another regulation,
   - An alternative is available,
   - The equipment that emits the compound also emits a compound with a more restrictive health value restricting throughput,
   - Documented usage is less than a potential limit established using a Tier I HRA, or
   - Equipment emitting the compound is subject to control requirements.

Based on staff's impact assessment, equipment that emits polymeric HDI, pCBtF, or t-BAc will be impacted by the amendment. An analysis of each of the compounds is discussed in the following paragraphs.

1-Bromopropane (CAS 106-94-5)

In 2023, OEHHA developed acute, 8-hour, and chronic RELs for 1-Bromopropane.

Potential Emission Sources

The emission sources of 1-Bromopropane are cleaning solvents and dry cleaners.

Assessment

Two facilities reported 1-bromopropane emissions associated with cleaning solvents. The emissions were reported from non-permitted pieces of equipment associated with cleaning or maintenance. This activity is exempt from permitting requirements pursuant to South Coast AQMD Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II. As a permit is not required, PAR 1401 does not apply to these operations.

In January 2007, CARB amended the Dry Cleaning ATCM to address perchloroethylene emissions and phased out the use of perchloroethylene dry cleaning machines and related equipment by January 1, 2023. While 1-bromopropane was identified as potential alternative to perchloroethylene, many other alternatives are available.[17]

Conclusion

The addition of 1-bromopropane is expected to have minimal impacts for new, modified, or relocated equipment subject to PAR 1401.

1,4-Dichlorobenzene (CAS 106-46-7)

In 2025, OEHHA adopted new acute and 8-hour RELs for 1,4-dichlorobenzene.

Potential Emission Sources

According to OEHHA, 1,4-dichlorobenzene usage includes as a deodorant for toilets, urinals, and refuse containers; moth repellant for clothing; and fumigant to control mold. However, CARB implemented a ban on the sale and manufacture of solid air fresheners or toilet/urinal care products that contain 1,4-dichlorobenzene, effective December 31, 2006, to reduce both indoor and near-source outdoor air concentrations.[18]

Based on AER data from 2025, 1,4-dichlorobenzene emissions were reported from sewage treatment plants, landfills, and refineries.

Assessment

Based on a review of permits for equipment that were sources of 1,4-dichlorobenzene, the equipment identified also emits benzene at a higher quantity. Benzene has a lower REL compared to 1,4-dichlorobenzene and as mentioned in Chapter 1, a lower REL would mean that the value is more stringent.

Compound	Acute REL	8-Hour REL
Benzene	2.7E01 ug/m^3	3 ug/m^3
1,4-Dichlorobenzene	8.7E03 ug/m^3	10 ug/m^3

Benzene is the main driver for health risks at these facilities when estimating health risks for either acute REL or 8-hour REL.

[17] CARB. (2015). Dry Cleaning Alternative Solvents: Health and Environmental Impacts. https://ww2.arb.ca.gov/sites/default/files/classic/toxics/dryclean/notice2015_alt_solvents.pdf

[18] CARB. (2006). Health Risk and Needs Assessment for the Airborne Toxic Control Measure for para-Dichlorobenzene Solid Air Fresheners and Toilet/Urinal Care Products. https://ww2.arb.ca.gov/sites/default/files/barcu/regact/conprod/ch7.pdf

Additionally, permit applications reviewed showed that these facilities implement controls to reduce other TAC emissions. It is expected that the operating conditions to address the health risks from other TAC emissions would also address 1,4-dichlorobenzene emissions.

Conclusion

Adding 1,4-dichlorobenzene is expected to have minimal impacts for new, modified, or relocated equipment subject to PAR 1401.

Cobalt (CAS 7440-48-4)

In 2020, 2022, and 2023 OEHHA adopted cancer potency factors and cancer inhalation risk factors for cobalt and its child compounds.

Potential Emissions Sources

Based on AER data, the main sources of cobalt are semi-conductor manufacturing, resin operations, abrasive blasting, and metal plating.

Assessment

The following is a summary and result of the review of permit applications and the associated Technical Data Sheets (TDS) for different sources.

- 40 semiconductor manufacturing permit applications were reviewed
  - Cobalt was not listed in any of the TDS
  - No usage, no impacts
- 55 resin operations permit application were reviewed
  - Cobalt was not listed in any of the TDS
  - No usage, no impacts
- 30 abrasive blasting permit applications were reviewed
  - 5 abrasive blasting applications identified cobalt in the composition of metal being blasted
  - Abrasive blasting operations have several options to further reduce cancer risk, including reducing horsepower, reducing nozzle size/pressure, installing high efficiency filters, adding an operating time limit, and changing type of steel used
  - Due to various alternatives to limit cobalt emissions, minimal impacts on permitting new, modified, or relocated equipment are expected
- 1 metal plating application was reviewed
  - Decorative chrome plating equipment transitioning from hexavalent chromium to cobalt tungsten
  - Cobalt is a potential alternative for chrome plating operations in lieu of using hexavalent chromium
  - Due to alternatives to cobalt to replace hexavalent chromium, such as trivalent chromium, minimal impacts on permitting new, modified, or relocated equipment are expected.

Conclusion

The addition of cobalt is expected to have minimal impacts for new, modified, or relocated equipment subject to PAR 1401.

Hexamethylene Diisocyanate (HDI) Monomer (CAS 822-06-0)

In 2019, OEHHA adopted chronic, 8-hour, and acute RELs for HDI monomer**.**

Potential Emission Sources

HDI monomer is used in autobody shops that use polyurethane coating. Industries such as aerospace and metal coatings also use products containing HDI monomer to coat aircraft parts, signage, scaffolds, and heavy-duty equipment.

Assessment

90 spray booth permit applications were reviewed and HDI monomer was identified in 25 applications. Concentrations of HDI monomer were all less than or equal to 1%. Products containing HDI monomer also contain pCBtF or polymeric HDI which are the driving risk factors. The phase out and reduction of pCBtF containing products may also lead to the reduction of HDI monomer. Coating manufacturers have also expressed transitioning away from the use of HDI monomer to using polymeric HDI.

Conclusion

The addition of HDI monomer is expected to have minimal impacts for new, modified, or relocated equipment subject to PAR 1401.

Polymeric Hexamethylene Diisocyanate (HDI) (CARB Air Toxics Hot Spots Emission Inventory Code 1221)

In 2019, 2022, and 2025 OEHHA adopted chronic, 8-hour, and acute RELs for polymeric HDI, and their child compounds.

Potential Emission Sources

Polymeric HDI are prevalent in autobody shops that use polyurethane coating. Industries such as aerospace and metal coatings also use products containing polymeric HDI to coat aircraft parts, signage, scaffolds, and heavy-duty equipment.

Assessment – Tier II HRA

As discussed in Chapter 1, a Tier II HRA is a conservative approach assessing the health risk associated with the quantity of a pollutant emitted. For polymeric HDI, the following parameters were used:

- Concentration of polymeric HDI in a coating component,
- A common mixing ratio of the coating component and other materials, and
- A referenceable emission rate.

A review of 90 spray booth permit applications submitted from 2016-2023 provided the following:

- The average polymeric HDI concentration was 65%, and

- A common mix ratio was four (4) parts polymeric HDI-free coating component to one (1) part polymeric HDI containing coating component.

In 2006, a study was conducted by the Ontario Ministry of the Environment to develop emission factors for spray booth operations in autobody shops. The study developed an emission rate of 4.8%-6.3%[19] that was used for the Tier II HRA.

Staff reached out to facilities and paint manufactures to determine a conservative usage amount. The usage amount was 1-2 gallons of mixed coating applied per hour.

The Tier II HRA determined that the hourly usage would need to be approximately 1-2% of the conservative usage amount provided by industry to be below the acute HI threshold.

Assessment - Alternatives to Polymeric HDI

Polymeric HDI is considered a critical and necessary compound for polyurethane coating chemistry and is used to replace Methylene Diphenyl Diisocyanate which is a carcinogen. Additionally, coating manufacturers and industry stakeholders indicated that there are no other known alternatives available and plans for reformulation to remove polymeric HDI are uncertain.

Assessment - Pathways to utilize polymeric HDI

For facilities spraying coatings containing polymeric HDI, two pathways are available to allow facilities to remain under Rule 1401 health risk thresholds:

1. Conduct a more refined estimation of health risks, or
2. Install and implement add-on controls.

Refining Health Risk Estimations

As mentioned in Chapter 1, there are four tiers of HRAs. By utilizing a higher HRA tier and refining the estimation of health risks and/or modifying the operating assumptions, facilities can potentially be allowed a greater throughput than that resulting from a Tier I HRA. Additionally, during this time, the facility may propose a lower throughput or alternative assumptions supported by studies or evidence that can be used to reduce the estimated health risks.

Install and Implement Add-on Controls

In the 2006 Ontario study, particle size distribution was analyzed. Figure 3 depicts the distribution by scenarios.

[19] Ontario Ministry of the Environment. (2006). Ontario Ministry of the Environment Joint Ministry/Industry Study Determination of 1,6-Hexamethylene Diisocyanate (HDI) Emissions from Spray Booth Operations. https://www.ontario.ca/page/emission-factors-16-hexamethylene-diisocyanate-hdi-emissions-spray-booth-operations

Figure 3 Dry Filter Booth Particle Size Distribution

DuPont Canada, Inc.											
Size[1]	0.3µm	0.4µm	0.5µm	0.65µm	0.8µm	1.0µm	1.6µm	2.0µm	3.0µm	4.0µm	5.0µm
Scenario 1	42.97%	20.69%	11.62%	7.53%	8.94%	4.39%	1.71%	1.86%	0.25%	0.03%	0.00%
Scenario 2	33.32%	24.18%	12.33%	8.74%	11.60%	4.42%	2.44%	2.56%	0.35%	0.04%	0.01%
Scenario 3	29.09%	25.78%	11.84%	9.05%	13.64%	4.10%	2.83%	3.16%	0.45%	0.06%	0.01%
Scenario 4	21.04%	27.89%	11.21%	10.02%	17.49%	4.08%	3.58%	4.08%	0.54%	0.05%	0.01%
Scenario 5	35.90%	24.15%	13.54%	8.33%	9.47%	4.55%	1.75%	1.95%	0.31%	0.04%	0.01%
Scenario 6	40.91%	21.54%	11.69%	7.68%	9.46%	4.39%	1.85%	2.09%	0.33%	0.04%	0.01%
BASF, Toronto, Ontario Canada											
Scenario 1	Detector Saturated at 0.3 µm range										
Scenario 2	43.71%	20.76%	10.89%	7.13%	8.88%	3.39%	2.50%	2.45%	0.25%	0.02%	0.00%
Scenario 3	44.18%	20.60%	10.71%	7.16%	9.01%	3.22%	2.49%	2.38%	0.22%	0.02%	0.00%

Based off the chart, 99.98-100% of particle size is greater than or equal to 0.3 microns. This means that polymeric HDI emissions are considered and treated as a particulate. In South Coast AQMD Rule 1469.1 – Spraying Operations Using Coatings Containing Chromium, emissions from spraying operations were also treated as a particulate and controlled with HEPA filters. This is potentially a viable control technology since HEPA filters can achieve a capture efficiency of 99.97% for particles 0.3 microns or larger which aligns with the particle size distribution found in the Ontario study.

Affected Facilities

The addition of polymeric HDI to PAR 1401 may impact new, modified, or relocated equipment by requiring either a more refined risk assessment or the usage of enhanced control equipment. Over the course of eight years, from 2016 to 2023, approximately 714 applications for new or modified spray booths indicated coatings containing Polymeric HDI were submitted from 535 different facilities. Based on this period, it is anticipated that 89 spray booth applications from 67 facilities will be submitted each year.

The only known emission factors for polymeric HDI were published in the 2006 study conducted by the Ontario Ministry of the Environment. These emission factors would be used for permitting applicable equipment and during the respective PAR 1401 analysis. Each permit application would be reviewed for relevance to the emission factor in the study. In the event new information becomes available, the most appropriate emission factor would be used. For example, spray booths equipped with HEPA filters would be evaluated differently than ones without.

Isoprene (CAS 78-79-5)

In 2025, OEHHA developed an inhalation unit risk and inhalation cancer potency factor for isoprene.

Potential Emissions Sources

Based on the California Emissions Inventory Data Analysis and Reporting System, which is the database used by CARB to store and maintain criteria and toxic pollutant emissions statewide, and a review of permitting data, the main sources that emits isoprene are petroleum refineries and gasoline stations.

Isoprene is a by-product of the thermal cracking of petroleum naphtha and is a VOC. Based on refinery permitting data, the equipment emitting isoprene is subject to South Coast AQMD Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants that requires equipment to be vented to vapor recovery systems. Additionally, the permit applications reviewed showed that these facilities implement T-BACT to reduce emissions. It is expected that existing controls are sufficient to reduce isoprene emissions.

An initial Tier 2 HRA was done for isoprene at gasoline stations and the increase in MICR was less than 0.6%. It is expected that there are minimal impacts to gasoline stations.

Conclusion

The addition of isoprene is expected to have minimal impacts for new, modified, or relocated equipment subject to PAR 1401. The Risk Assessment Procedures and online HRA Tool will be updated with the inclusion of isoprene for gasoline dispensing facilities and will be made available for use upon approval of this rule amendment. Impacts to refineries are not anticipated due to existing T-BACT.

Parachlorobenzotrifluoride (CAS 98-56-6) and Tertiary Butyl Acetate (CAS 540-88-5)

In 2020, OEHHA adopted cancer potency factors and cancer inhalation risk factors for parachlorobenzotrifluoride (pCBtF).

In 2018, OEHHA adopted cancer potency factors and cancer inhalation risk factors for Tertiary Butyl Acetate (t-BAc).

Potential Emissions Sources

Based on Annual Emission Reporting, permitting data, and internal databases, the primary sources of pCBtF are solvent cleaners for lithographic printing operations, adhesives and sealants, and coatings used in various industries such as automotive, aerospace, metal coatings, wood coatings, marine coatings, architectural coatings, paper coating, fabric coating , film coating, plastic coating, rubber coating, leather coating, and glass coating.

Based on Annual Emission Reporting, permitting data, and internal databases, the primary sources of t-BAc are solvent cleaning operations, adhesive and sealant applications, and coatings used in various industries such as automotive, aerospace, metal coatings, wood coatings, marine coatings, architectural coatings, paper coating, fabric coating, film coating, plastic coating, rubber coating, leather coating, and glass coating.

pCBtF and t-BAc are solvents that are exempt from the definition of VOC. VOCs are a critical component in the creation of ground-level ozone and particulate matter caused by the formation

of secondary organic aerosols. This has led to the development of multiple South Coast AQMD rules to establish VOC content limits for products used on different substrates in various industries. To comply with the VOC contents limits, many coatings manufacturers have used solvents exempt from the definition of a VOC. These solvents have low reactivity and therefore do not significantly contribute to the formation of ground-level ozone.

With OEHHA's adoption of cancer potency factors and cancer inhalation risk factors of pCBtf ~~PCTBF~~ and t-BAc, South Coast AQMD Governing Board identified them as a priority to reduce emissions, even if this approach temporarily results in higher VOC emissions. As a result, there are various source specific VOC rules being developed or that have been amended. The following rules have been adopted to address pCBtF and t-BAc:

- Rule 1107 – Coating of Metal Parts and Products;
- Rule 1124 – Aerospace Assembly and Component Manufacturing Operations
- Rule 1136 – Wood Products Coatings
- Rule 1151 – Automotive Coating;
- Rule 1168 – Adhesives and Sealants; and
- Rule 1171 – Solvent Cleaning Operations.

These rules were prioritized due to prevalent use of pCBtF and t-BAc in those respective operations. Key requirements of these rule amendments include:

- Prohibiting usage of products containing more than 0.01% pCBtF and t-BAc by weight
- Implementing a phase out schedule to prohibit further selling and manufacturing of products containing more than 0.01% by weight of pCBtF and t-BAc
- Temporarily allow higher VOC alternative coatings to be applied
- Allowing the usage of products containing pCBtF or t-BAc for situations where there are no alternatives, provided the emissions are controlled

Sources addressed by these rules would either have their impacts evaluated as part of the rule amendment or are not subject to permitting requirements.

Rulemaking is also underway for other rules regulating sources that were identified to be sources of pCBtF or t-BAc. The following rule is currently under rule development:

- Rule 1113 – Architectural Coatings

Based off a review of the rule currently in development, the addition of pCBtF and t-BAc into PAR 1401 is expected to have minimal impacts. For sources subject to Rule 1113, the operation is exempt from a permit under Rule 219 – Equipment Not Requiring A Written Permit Pursuant To Regulation II.

Rulemaking is also underway for other rules regulating sources that were identified to be sources of pCBtF or t-BAc. The following rules are currently scheduled for amendment:

- Rule 1106 – Marine and Pleasure Craft Coatings
- Rule 1128 – Paper, Fabric, and Film Coating Operations
- Rule 1145 – Plastic, Rubber, Leather, and Glass Coatings

These sources are being assessed as PAR 1401 is anticipated to be adopted before these rules are amended to restrict pCBtF and/or t-BAc. As discussed in Chapter 2, the effective date for pCBtf will be December 31, 2027 to minimize installation of pollution controls that would become stranded assets when manufacturers reformulate the coatings and solvents to eliminate pCBtF for source-specific rules that have already been amended. However, it is uncertain when these other source-specific rules will be adopted and it is anticipated that the installation of control technology would be required to remain below health risk thresholds once pCBtf is evaluated during the permitting process. Additionally, the effective date for t-BAc remains the date PAR 1401 is adopted. To determine the number of potentially impacted facilities, these sources were identified using internal databases and past permit actions were evaluated from 2018-2023. Over 6 years, 12 permit applications were submitted from 8 different facilities. Based on this period, it is anticipated that two permit applications from 1 facility will be submitted each year.

Conclusion

For sources regulated under recently amended rules, the impacts were assessed as part of each respective rule development or do not require to be permitted. For sources regulated under rules under development, the impacts are expected to be minimal. For sources that will undergo development, the addition of pCBtF and t-BAc is expected to have temporary impacts for new, modified, or relocated equipment until the source-specific rules are amended.

Trimethylbenzene (CAS 25551-13-7)

In 2023, OEHHA adopted chronic, 8-hour, and acute RELs for trimethylbenzene.

Potential Emission Sources

Based on Annual Emission Reporting and permitting data, the primary sources are spray booths in the automotive, aerospace, metal coatings, and wood coatings industries and gasoline stations.

Assessment

Staff conducted a review of 90 spray booth applications and found trimethylbenzene in 17 applications. All applications had trimethylbenzene concentration less than or equal to 5% by weight. Products containing trimethylbenzene also contain PCTBF which are being addressed in source specific VOC rules to limit usage and phase out. A tier 1 HRA preliminary evaluation of trimethylbenzene for a permit application also showed minimal impacts to health risk.

A preliminary screening analysis conducted for trimethylbenzene showed that there will be minimal impacts for chronic and acute hazard index at gasoline stations.

Conclusion

The addition of trimethylbenzene is expected to have minimal impact on permitting new, modified, or relocated equipment subject to PAR 1401.

Trivalent Chromium (CAS 16065-83-1)

In 2022, OEHHA adopted chronic, 8-hour, and acute RELs for trivalent chromium.

Potential Emission Sources

Based on South Coast AQMD AER and permitting data, decorative chrome plating operations would be a potential source of trivalent chromium emissions. Trivalent chromium decorative chrome plating is anticipated to be the main source of trivalent chromium as more facilities transition away from hexavalent chromium usage due to Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations prohibiting the use by 2030.

Assessment

A Tier I HRA using operational data from an existing permit application for a decorative chrome plating tank determined that it is likely adding trivalent chromium to PAR 1401 will likely not have impact on permitted throughputs. Additionally, Rule 1469 requires trivalent chromium plating tanks to either be controlled or utilize a chemical fume suppressant, which limits the amount of trivalent chromium emissions. Trivalent chromium does not have a cancer potency factor while hexavalent chromium does. If applying for an identical throughput, transitioning from hexavalent chromium to trivalent chromium may decrease the health risk of metal plating facilities rather than increase it as the primary risk driver for hexavalent chromium is cancer risk, which is not a health risk factor for trivalent chromium. While not anticipated due to the results of the Tier I HRA, a facility may utilize control equipment used to control hexavalent chromium emissions to control trivalent chromium emissions, such as HEPA filters, scrubbers, or other add-on control equipment.

Conclusion

The addition of trivalent chromium is expected to have minimal impacts for new, modified, or relocated equipment subject to PAR 1401.

California Environmental Quality Act (CEQA)

Pursuant to the CEQA Guidelines Sections 15002(k) and 15061, the proposed project (PAR 1401) is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption ~~will be~~has been prepared pursuant to CEQA Guidelines Section 15062, and if the proposed project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties, and with the State Clearinghouse of the Governor's Office of Land Use and Climate Innovation.

Socioeconomic Impact Assessment

~~A socioeconomic impact assessment has been conducted and released for public review and comment as a separate document at least 30 days prior to the South Coast AQMD Governing Board Hearing for PAR 1401, which is scheduled for August 7, 2026 (subject to change).~~
A Draft Socioeconomic Impact Assessment for PAR 1401 was released for public review and comment on July 2, 2026. The Final Socioeconomic Impact Assessment is available in the August 7, 2026 Governing Board Package.

Draft Findings under Health and Safety Code Section 40727

Requirements to Make Findings

Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the South Coast AQMD 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

PAR 1401 is needed to update Table 1 to incorporate and update the RELs for new and existing TACs that have been adopted by OEHHA.

Authority

The South Coast AQMD Governing Board has authority to adopt PAR 1401 pursuant to the Health and Safety Code Sections 39002, 39650 et. Seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, 41700, and 42300 et. Seq.

Clarity

PAR 1401 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

PAR 1401 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations.

Non-Duplication

PAR 1401 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, South Coast AQMD.

Reference

By adopting PAR 1401, the South Coast AQMD Governing Board will be implementing, interpreting, and making specific provisions of the Health and Safety Code Sections 39666 (District new source review rules for toxics), 41700 (prohibited discharges), and 42300 *et. seq*., (permit system).

Comparative Analysis

Under Health and Safety Code Section 40727.2, South Coast AQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed South Coast AQMD rules and air pollution control requirements and guidelines which are applicable to the same source. See Figure 4 below.

Figure 4: Comparative Analysis of PAR 1401 with Rules 212, 1401.1, 1402, and Federal Regulations

Rule Element	PAR 1401	Rule 212	Rule 1401.1	Rule 1402	Equivalent Federal Regulation
Applicability	New, modified, or relocated permit unit	New or modified permit unit	New or relocated permit unit	Existing facilities subject to Air Toxics "Hot Spots Information and Assessment Act of 1987 and facilities with a total facility emissions exceeding any significant or action risk level	None
Requirements	Limits maximum individual cancer risk, cancer burden and chronic, 8-hour chronic, and acute hazards	Provide public notice to all nearby addresses and projects that are located within 1,000 feet of a school, increase risk or nuisance, or increase criteria pollutants above specified thresholds	Limits cancer risk and chronic and acute hazards near schools	Submittal of health risk assessment for total facility emissions when notified. Implement risk reduction measures if facility-wide risk is greater than or equal to action risk level	None
Reporting	None	Verification that public notice has been distributed	None	Progress reports and updates to risk reduction plans	None
Monitoring	None	None	None	None	None
Recordkeeping	None	None	None	None	None

ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Socioeconomic Impact Assessment For Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants

August 2026

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EXECUTIVE SUMMARY

On March 17, 1989, the South Coast Air Quality Management District (South Coast AQMD) Governing Board adopted a resolution which requires an analysis of the economic impacts associated with adopting and amending rules and regulations. In addition, Health and Safety Code Section 40440.8 requires a socioeconomic impact assessment for any proposed rule, rule amendment, or rule repeal which "will significantly affect air quality or emissions limitations." Health and Safety Code Section 40728.5 requires the South Coast AQMD Governing Board to actively consider the socioeconomic impacts of regulations, make a good faith effort to minimize adverse socioeconomic impacts and include small business impacts. Lastly, Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for a proposed rule or amendment which imposes Best Available Retrofit Control Technology (BARCT) or "all feasible measures" requirements relating to emissions of ozone, carbon monoxide (CO), sulfur oxides (SOx), nitrogen oxides (NOx), volatile organic compounds (VOC), and their precursors. However, Health and Safety Code Section 40920.6 is not applicable to new or amended rules that seek to control toxic air contaminants (TACs) because they are not classified as criteria pollutants or ozone precursors.

Proposed Amended Rule 1401 (PAR 1401) – New Source Review of Toxic Air Contaminants has been developed to update the listing of TACs to reflect the new compounds identified by the California Office of Environmental Health Hazard Assessment (OEHHA) and update existing compounds with new risk thresholds. A socioeconomic impact assessment has been conducted to assess the impacts from implementing PAR 1401 and the following presents a summary of the analysis and findings.

Key Elements of PAR 1401

PAR 1401 seeks to update the listing of TACs to reflect new chemical compounds identified by OEHHA or update existing compounds with new risk thresholds.[1] However, implementation of PAR 1401 will only impact facilities with new, modified, or relocated equipment or sources that emit some of the newly added TACs during the permit application process. PAR 1401 will not be applied retroactively to existing equipment or sources.

Affected Facilities and Industries

Of the new TACs being added to PAR 1401, only facilities seeking to install new equipment, or modify/relocate existing equipment that will emit polymeric hexamethylene diisocyanate (HDI), para-chlorobenzotrifluoride (pCBtF), and/or tert-butyl acetate (t-BAc) will likely require the installation of enhanced air pollution control technology.

The potential number of applications that may be submitted in accordance with HDI, pCBtF and/or t-BAc emissions is assumed to directly correlate to the number of existing South Coast AQMD air permits issued from 2016 to 2023 for facilities with equipment and/or processes that use HDI (e.g., 535 facilities), pCBtF or t-BAc (e.g., eight facilities). By including

[1] South Coast AQMD, Proposed Amended Rule 1401 – New Source of Toxic Air Contaminants, https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1401, accessed June 2026.

HDI in PAR 1401, the majority of facilities that may be required to submit permit applications are projected to belong to the Repair and Maintenance Industry sector under the North American Industry Classification System (NAICS 811). Similarly, by including pCBtF and t-BAc in PAR 1401, the potential facilities that may need to submit permit applications are expected to belong to the sectors of State and Local Government (NAICS 92), Retail trade (NAICS 44-45), Motion picture industries (NAICS 512), Paper manufacturing (NAICS 322), Chemical manufacturing (NAICS 325), Computer and electronic product manufacturing (NAICS 334), or Support activities for transportation (NAICS 487-488).

A small business analysis was also conducted using permit data for facilities with existing equipment or processes that currently use HDI, pCBtF and/or t-BAc. The analysis assumed that the distribution of existing facilities which currently qualify as a small business will correlate to the number of small businesses within the total number of future facilities that will be subject to PAR 1401. The following table presents the projected proportions of facilities using HDI, pCBtF and/or t-Bac subject to PAR 1401 that may qualify as a small business based on varying small business definitions.

Small Business Definition	Percentage Share of Facilities Based on HDI Permits	Percentage Sshare of Facilities Based on pCBtF or t-BAc Permits
South Coast AQMD Rule 102	55%	0%
South Coast AQMD Small Business Assistance Office	82%	50%
U.S. Small Business Administration	79%	67%
1990 CAAA	14%	33%

Analytical Assumptions

PAR 1401 will only apply to new, relocated, or modified sources of certain TACs and will not be applied retroactively to existing equipment or sources. This analysis assumes that the industry and small business distributions of facilities with South Coast AQMD permits for equipment that use compounds added by PAR 1401 will be similar to the corresponding distribution of facilities that may be impacted in the future. In addition, the type of enhanced control equipment that will likely be needed to comply with PAR 1401 is expected to be similar to what existing facilities are currently using to control emissions of HDI, pCBtF and t-BAc, e.g., spray booths equipped with either high efficiency particulate arrestor (HEPA) filters or carbon adsorbers. While estimating

the future number of actual permit applications that will be submitted by facilities in response to PAR 1401 cannot be predicted with any degree of certainty, historical permit data from the 2016-2023 period combined with the typical 10-year lifespan of HEPA filtration technology has been used as a surrogate to estimate the potential future socioeconomic impacts for the 2026 to 2035 period. Compliance costs were estimated by assuming that the annual number of anticipated new permit applications equals the average annual number of permit applications received in prior years. The analysis indicated that PAR 1401 would result in approximately 89 new permit applications for HDI and two new permit applications per year for pCBtF and t-BAc. The compliance costs of implementing PAR 1401 are associated with: 1) purchasing spray booths equipped with HEPA filters; 2) purchasing spray booths equipped with carbon adsorbers; 3) replacing HEPA filters; 4) replacing activated carbon; 5) electricity usage; and 6) permit fees.

Compliance Costs

Over the forecast period from 2026 to 2035, the total present value of the compliance costs ranges from $45,798,191 to $38,564,784 at a 1% and 4% discount rate, respectively. The average annual compliance cost over the same period ranges from $4,673,204 to $4,861,145 at a 1% and 4% real interest rate, respectively. The following table presents a summary of the average annual compliance costs of PAR 1401 by cost category.

	Annual Average of PAR 1401 (2026-2035)	
Cost Categories	**1% Real Interest Rate**	**4% Real Interest Rate**
Capital Costs		
Equipment Costs: Spray Booths with HEPA Filters	$1,164,134	$1,320,176
Permit Fee Costs: Spray Booths with HEPA Filters	$121,574	$137,870
Equipment Costs: Spray Booths with Carbon Adsorbers	$113,906	$129,174
Permit Fee Costs: Spray Booths with Carbon Adsorbers	$2,490	$2,824
Recurring Costs		
Equipment Costs: Replacement of HEPA Filters	$1,251,162	$1,251,162
Utility Costs:	$737,686	$737,686

Electricity for Spray Booths with HEPA Filters		
Permit Renewal Fee Costs: Spray Booths with HEPA Filters	$1,037,787	$1,037,787
Equipment Costs: Replacement of Activated Carbon	$206,604	$206,604
Utility Costs: Electricity for Spray Booths with Carbon Adsorbers	$22,755	$22,755
Permit Renewal Fee Costs: Spray Booths with Carbon Adsorbers	$15,107	$15,107
Total	**$4,673,204**	**$4,861,145**

Using a 4% real interest rate, the analysis indicates that the majority (92.3%) of the total annual average compliance cost of PAR 1401 would be attributable to the installation of spray booths with HEPA filters, replacements of spent HEPA filters, electricity costs, and permit renewals. Meanwhile, the costs relating to spray booths equipped with carbon adsorbers, replacements of spent carbon filter media, electricity costs, and permit renewals make up only 7.7% of the total annual average costs.

Job Impacts

Direct costs and corresponding revenues of PAR 1401 were used as inputs to the Regional Economic Models, Inc (REMI PI+) model to assess job impacts and secondary/induced impacts for all affected industries in the four-county economy on an annual basis from 2026 to 2035.

With compliance costs annualized using a 4% real interest rate, the REMI analysis forecasted 37 net jobs per year foregone which represents approximately 0.0003% of total annual jobs in the four-county area.

Competitiveness and Prices Impacts

The REMI analysis indicated that implementing PAR 1401 will not result in a substantial increase in production costs and delivered prices in the region. Specifically, the implementation of PAR 1401 is projected to increase the relative cost of production by 0.0004% and increase the relative delivered price of goods by 0.0003% for all the industries in the four-county region.

INTRODUCTION

Rule 1401 defines limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI) values from new permit units or relocations, or modifications to existing permit units which emit TACs.[2] The proposed amendments to Rule 1401 will add 1-Bromopropane, Cobalt, monomeric HDI, polymeric HDI, Isoprene, pCBtF, t-BAc, Trimethylbenzene, and Trivalent Chromium to the list of TACs required to be evaluated during health risk assessments. The proposed amendments will also add new acute and 8-hour reference exposure levels (RELs) for 1,4-Dichlorobenzene, in addition to revising its chronic REL. Implementation of PAR 1401 for 1-Bromopropane, Cobalt, 1,4-Dichlorobenzene, Isoprene, Trimethylbenzene, and Trivalent Chromium is expected to incur minimal socioeconomic impacts due to existing requirements in other regulations, readily available non-toxic substitutes, or facilities having documented TAC usage at levels less than the screening limits when conducting a Tier I health risk assessment. As such, this socioeconomic impact assessment focuses on only three of the new compounds proposed to be added to Table I in Rule 1401: HDI, pCBtF, and t-BAc.

LEGISLATIVE MANDATES

The legal mandates directly related to the socioeconomic impact assessment of PAR 1401 include a South Coast AQMD Governing Board resolution and various sections of the Health and Safety Code.

South Coast AQMD Governing Board Resolution

On March 17, 1989, the South Coast AQMD Governing Board adopted a resolution that calls for an economic analysis associated with adopting and amending rules and regulations that consider all of the following elements:

- Affected industries
- Range of probable costs
- Cost-effectiveness of control alternatives
- Public health benefits

The economic elements outlined in the March 17, 1989 resolution are also required by various Health and Safety Code sections which are discussed in the following section.

Health and Safety Code Requirements

The state legislature adopted legislation which reinforces and expands the South Coast AQMD Governing Board resolution requiring socioeconomic impact assessments for rule development projects. Health and Safety Code Section 40440.8, which went into effect on January 1, 1991, requires a socioeconomic impact assessment for any proposed rule, rule amendment, or rule repeal which "will significantly affect air quality or emissions limitations."

To satisfy the requirements in Health and Safety Code Section 40440.8, which includes requirements defined in Health and Safety Code 40922, the scope of the socioeconomic impact assessment should include all of the following information, as applicable:

[2] Please refer to Table 1: Toxic Air Contaminants in Rule 1401, pp. 12-26, https://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1401.pdf.

- Type of affected industries;
- Impact on employment and the regional economy;
- Range of probable costs, including those to industry;
- Availability and cost-effectiveness of alternatives to the rule;
- Emission reduction potential; and
- Necessity of adopting, amending, or repealing the rule in order to attain state and federal ambient air quality standards.

Health and Safety Code Section 40728.5, which went into effect on January 1, 1992, requires the South Coast AQMD Governing Board to: 1) actively consider the socioeconomic impacts of regulations; 2) make a good faith effort to minimize adverse socioeconomic impacts; and 3) include small business impacts. To satisfy the requirements in Health and Safety Code Section 40728.5, the socioeconomic impact assessment typically includes the following information:

- Type of industries or business affected, including small businesses; and
- Range of probable costs, including costs to industry or business, including small business.

Finally, Health and Safety Code Section 40920.6, which went into effect on January 1, 1996, requires a cost-effectiveness and incremental cost-effectiveness analysis for a proposed rule or amendment which imposes BARCT or "all feasible measures" requirements relating to emissions of ozone, CO, SOx, NOx, VOC, and their precursors.

However, Health and Safety Code Section 40920.6 is not applicable to new or amended rules that seek to control TACs such as PAR 1401, because TACs are not classified as criteria pollutants or ozone precursors. Thus, an analysis of the cost-effectiveness and incremental cost-effectiveness of PAR 1401 is not required and has not been included.

Public Health

PAR 1401 does not have quantifiable emission reductions; therefore, a health impacts assessment with quantified avoided health incidences cannot be performed. However, by controlling emissions of HDI, pCBtF, and t-BAc, PAR 1401 will provide public health benefits by minimizing: 1) acute exposure to HDI which can affect the respiratory system and lead to asthma and bronchitis; and 2) exposure to pCBtF and t-BAc which are known carcinogens and inhalation of these TACs can affect the nervous system and cause irritation to eyes and nose.

Cost-Effectiveness of Control Alternatives

Health and Safety Code Section 40440.8(b)(4) requires an assessment of the availability and cost-effectiveness of alternatives to the proposed rule or regulation per the definition of "Socioeconomic Impact" as set forth in Health and Safety Code Section 40922. However, Health and Safety Code Section 40922 is only applicable to rules and regulations pertaining to achieving the state ambient air quality standards for ozone, CO, SOx, and NOx. Since PAR 1401 regulates emissions of TACs, an analysis of the cost-effectiveness of control alternatives is not required and thus, was not conducted.

AFFECTED FACILITIES

PAR 1401 will apply to new, relocated, or modified equipment or sources of HDI, pCBtF, t-BAc, as well as other compounds, and will not be applied retroactively to existing equipment or sources. As noted earlier in the Introduction, while several new compounds are proposed to be added to Table I in Rule 1401, only HDI, pCBtF, and t-BAc are expected to result in socioeconomic impacts. As such, the analysis of facilities that may be potentially affected by PAR 1401 focus on HDI, pCBtF, and t-BAc. Nonetheless, the number of facilities that may be potentially affected by PAR 1401 in the future is not available and cannot be predicted with any degree of certainty. In absence of this information, the number of existing facilities with South Coast AQMD permits issued from 2016 to 2023 for equipment and/or processes that use HDI, pCBtF, or t-BAc has been used as a surrogate to estimate the potential number of facilities that may need to submit permit applications in the future in accordance with PAR 1401. Between 2016 and 2023, 535 facilities were identified as having South Coast AQMD permits which specifically indicate the use of products that contain HDI. Between 2018 and 2023, eight facilities were identified as having South Coast AQMD permits which specifically indicate the use of products which contain pCBtF or t-BAc. The details of this analysis are provided in the following discussion.

1. HDI

Of the 535 facilities identified, 506 facilities had NAICS data. Table 1 presents the industrial sector distribution of these 506 facilities, with the majority (65.4%) in the Repair and maintenance sector (NAICS 811) followed by the Retail trade (NAICS 44-45) (9.3%), Wholesale trade (NAICS 42) (4.3%), and Construction sectors (NAICS 23) (3%). Of these 506 facilities, 58.2% are located in Los Angeles County, 19.7% are located in Orange County, 11.5% are located in Riverside County, and 10.6% are located in San Bernardino County. For the purpose of projecting the number of facilities that will be subject to PAR 1401, the analysis assumes that these distributions will be carried over to future facilities with new, modified or relocated equipment or sources using products containing HDI.

Table 1
Estimated Industrial Sector Distribution of Potential Facilities Subject to PAR 1401

NAICS Code	Industry Sector Name	Percentage Share of Facilities
811	Repair and maintenance	65.39%
44-45	Retail trade	9.26%
42	Wholesale trade	4.27%
23	Construction	2.97%
332	Fabricated metal product manufacturing	2.89%
54	Professional, scientific, and technical services	2.73%
3361-3363	Motor vehicles, bodies and trailers, and parts manufacturing	1.82%
561	Administrative and support services	1.62%
333	Machinery manufacturing	0.99%

NAICS Code	Industry Sector Name	Percentage Share of Facilities
3364-3369	Other transportation equipment manufacturing	0.91%
487-488	Scenic and sightseeing transportation; Support activities for transportation	0.87%
512	Motion picture and sound recording industries	0.79%
339	Miscellaneous manufacturing	0.63%
337	Furniture and related product manufacturing	0.63%
532-533	Rental and leasing services; Lessors of nonfinancial intangible assets	0.44%
321	Wood product manufacturing	0.40%
484	Truck transportation	0.40%
334	Computer and electronic product manufacturing	0.36%
331	Primary metal manufacturing	0.32%
326	Plastics and rubber product manufacturing	0.28%
325	Chemical manufacturing	0.24%
315-316	Apparel manufacturing; Leather and allied product manufacturing	0.24%
327	Nonmetallic mineral product manufacturing	0.24%
335	Electrical equipment and appliance manufacturing	0.20%
531	Real estate	0.20%
313-314	Textile mills; Textile product mills	0.20%
517	Telecommunications	0.20%
485	Transit and ground passenger transportation	0.20%
562	Waste management and remediation services	0.12%
713	Amusement, gambling, and recreation	0.08%
61	Educational services	0.08%
92	State and Local Government	0.04%
323	Printing and related support activities	0.04%
Total		**100%**

2. pCBtF and t-BAc

Of the eight facilities identified, two belong to the industrial sector of State and Local Government (NAICS 92), while one of each of the six remaining facilities belong to the industrial sectors of Retail trade (NAICS 44-45), Motion picture industries (NAICS 512), Paper manufacturing (NAICS 332), Chemical manufacturing (NAICS 325), Computer and electronic product

manufacturing (NAICS 334), and Support activities for transportation industries (NAICS 487-488). Five facilities are located in Los Angeles County, two facilities are located in San Bernardino County, and one facility is located in Orange County. For the purpose of projecting the number of facilities that will be subject to PAR 1401 due to new, modified or relocated equipment or sources using products containing pCBtF or t-BAc, the analysis assumes that the same distributions for existing facilities will apply to future facilities.

Small Business Analysis

For the purpose of assessing fees, the South Coast AQMD defines a small business in Rule 102 as one which employs 10 or fewer persons and which earns less than $500,000 in gross annual receipts. For the purpose of qualifying for access to services from the South Coast AQMD's Small Business Assistance Office, a small business has annual receipts of $5 million or less, or has 100 or fewer employees. In addition to the South Coast AQMD's criteria for small businesses, the United States (U.S.) Small Business Administration and the federal 1990 Clean Air Act Amendments (1990 CAAA) each have their own definition of a small business.

The 1990 CAAA classifies a business as a "small business stationary source," if among other conditions, it: 1) employs 100 or fewer employees; 2) does not emit more than 10 tons per year of either VOC or NOx; and 3) is a small business as defined by the U.S. Small Business Administration.[3,4] Based on firm revenue and employee count, the U.S. Small Business Administration definition of a small business varies by six-digit NAICS codes.[5] The majority of facilities potentially affected by PAR 1401 are within the Repair and Maintenance industry (NAICS 811121). According to the U.S. Small Business Administration, businesses in this industrial sector receiving less than $9 million in annual firm revenue are classified as small businesses.

The small business analysis of facilities potentially affected by PAR 1401 relied mostly on Dun and Bradstreet data. In cases where the Dun and Bradstreet data are unavailable or unreliable, other external data sources such as Manta, Hoover, LinkedIn, and company website data were used. The determination of data reliability is based on data quality confidence codes in the Dun and Bradstreet data as well as South Coast AQMD staff's discretion. Revenue and employee data for publicly owned companies was retrieved from filings with the Securities and Exchange Commission (SEC). Since subsidiaries have shared business interests with their parent company, the revenue and employee data of each facility's parent company, as applicable, was used for determining their small business status.

[3] Office of the Law Revision Control: United States Code, Title 42 – The Public Health and Welfare, Chapter 83 – Energy Extension Service, Subchapter V-Permits, §7661f. Small business stationary source technical and environmental compliance assistance program, (c) Eligibility, https://uscode.house.gov/view.xhtml?req=code+of+federal+regulations&f=treesort&num=2110, accessed June 2026.

[4] For the threshold of 10 tons per year of VOC/NOx emission for extreme nonattainment areas, please refer to National Archives and Records Administration, Title 40 – Protection of Environment, Chapter 1 – Environmental Protection Agency, Subchapter C – Air Programs, §51.165(a)(1)(iv)(A)(1)-(2), https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-51/subpart-I, accessed June 2026.

[5] U.S. Small Business Administration, 2023 Small Business Size Standards, https://www.sba.gov/document/support-table-size-standards, accessed June 2026.

1. HDI

Employment and revenue estimates from 2025 Dun and Bradstreet data as well as other external sources are available for 479 of the 535 identified facilities. For the purpose of estimating how future small businesses would be impacted by PAR 1401, this analysis assumes that the proportions of these 479 facilities that may qualify as small businesses will carry over to future years. Table 2 presents the number of affected facilities that qualify as small businesses, based on each of the four small business definitions. For the 479 facilities with available employment and revenue data, ~~up to~~ 394 (82%) may qualify as small businesses under the South Coast AQMD Small Business Assistance Office definition. The percentages of facilities that may qualify as a small business~~es~~ based on varying ~~other~~ definitions are ~~also~~ presented in Table 2.

Table 2
Distribution of Existing and Potential Facilities Qualifying as Small Businesses Based on Various Definitions

Small Business Definition	Number of Facilities	Percentage of Facilities Qualifying as Small Businesses
South Coast AQMD Rule 102	265	55%
South Coast AQMD Small Business Assistance Office	394	82%
U.S. Small Business Administration	379	79%
1990 CAAA	67	14%

2. pCBtF and t-BAc

Employment and revenue estimates from 2025 Dun and Bradstreet data as well as other external sources are available for seven out of the eight identified facilities. Of these seven facilities, one facility is classified under the State and Local Government industry and thus does not qualify as small business. For the remaining six facilities, none meet South Coast AQMD's Rule 102 standard for small businesses; three (50%) meet South Coast AQMD's Small Business Assistance Office's standard; four (67%) meet the U.S. Small Business Administration's standard; and two (33%) facilities qualify as small businesses according to the 1990 CAAA definition. For the purpose of estimating how future small businesses would be impacted by PAR 1401, this analysis assumes that the same proportions of these seven existing facilities that may qualify as small businesses will carry over to future years.

COMPLIANCE COSTS

As explained previously in this report, the number of facilities that will be affected by PAR 1401 amendments are unknown. The same is true for the associated compliance costs. In the absence of this information, the compliance costs have been estimated by assuming the number of new permit applications each year in the future equal the average annual number of permit applications in prior years (e.g., between 2016 and 2023). For facilities with potentially new, modified or relocated equipment or sources using HDI, the analysis assumed that approximately 89 new permit applications per year will be submitted. Similarly, for facilities with potentially new, modified or relocated equipment or sources using pCBtF and/or t-BAc, the analysis assumed two new permit

applications per year will be submitted. Compliance costs are based on a combination of manufacturer feedback plus the most recent cost data available for the same control equipment that was previously analyzed in April 2026 Socioeconomic Impact Assessment for Rule 1124.[6] All dollar amounts are reported in 2025 dollars, and analysis period is assumed to be 10 years from 2026 to 2035.

By assuming a 10-year useful life for spray booths with HEPA filters, only 89 HDI related permits anticipated for the first year of implementing PAR 1401 will reach their full cost within the analysis period.[7] Permits issued in later years extend beyond the 10-year horizon and therefore, their full costs are not incurred and are not reflected in this analysis. The same assumption applies to spray booths equipped with carbon adsorbers to control pCBtF and t-BAc emissions since those permits will also span multiple years and extend beyond the analysis period. Extending the analysis period would continually add new permits each year, resulting in indefinite cost accumulation that would not produce meaningful or realistic estimates.

1. Use of Products Containing HDI

One-Time/Capital Costs

Permit Application Fees

According to Table IA and Table Fee Rate-A of Rule 301, the permit application fee for a new spray booth with standard filtration under Schedule B is $4,084.24, while the permit application fee for a new spray booth with HEPA filters under Schedule C is $6,460.09.[8] The permit application fee for each of these schedules also varies depending on whether the facility qualifies as a major source of emissions as defined in Regulation XXX – Title V permits. However, historical data indicates that between 2016 and 2023, only three applications for spray booths were submitted by Title V facilities. Because the proportion of future permit applications that would be from Title V facilities is unknown, this analysis assumes that all new permit applications for spray booths are from non-Title V facilities.

Consequently, the compliance cost associated with one spray booth permit application due to PAR 1401 is the difference between Schedule C and Schedule B permit application fees for a non-Title V facility or $2,375.85. If South Coast AQMD receives 89 permit applications for new spray booths each year, the sum of annualized costs over the 10-year analysis period associated with permit application fees for PAR 1401 is approximately $1,162,979.

Purchase and Installation of Spray Booths with HEPA Filters

Prior to the adoption of PAR 1401, permit applications for new, modified or relocated spray booths

[6] South Coast AQMD, April 2026, Governing Board Meeting Agenda No. 29, Proposed Amended Rule 1124 – Aerospace Assembly and Component Manufacturing Operations, Final Socioeconomic Assessment within the Final Staff Report, Attachment G, https://www.aqmd.gov/docs/default-source/agendas/governing-board/2026/2026-apr3-029.pdf, accessed June 2026.

[7] For the discussion on the 10-year useful life of spray booths with HEPA filters, please refer to: South Coast AQMD, March 2005, Governing Board Meeting Agenda No. 31, Proposed Rule 1469.1 - Spraying Operations Using Coatings Containing Chromium, Final Socioeconomic Report, Attachment 050331I, pp. 6 – 7, https://xappp.aqmd.gov/hb/attachments/2005/050331.zip, accessed June 2026.

[8] South Coast AQMD, May 1, 2026, Rule 301 – Permitting and Associated Fees, https://www.aqmd.gov/docs/default-source/rule-book/reg-iii/rule-301.pdf, accessed June 2026.

for controlling emissions containing HDI would be equipped with standard filters with appropriately sized blowers and typical ducting. After PAR 1401 is adopted, permit applications for new spray booths used for coatings containing HDI would require HEPA filters with larger-sized blowers and additional ducting capable of achieving the required face velocity through the HEPA filters which are more dense than traditional filters. Consequently, the compliance cost for spray booth installations after PAR 1401 is adopted is the difference between spray booths equipped with HEPA filters, larger blowers, and additional ducting and spray booths equipped with standard filters, standard blowers, and ducting. According to cost data provided by spray booth manufacturers, the average difference in costs is $22,750 per spray booth. Thus, if 89 spray booths are installed, each year after PAR 1401 is passed, the sum of annualized costs over the 10-year analysis period for installations of spray booths equipped with HEPA filters is approximately $11,136,125 over the period.

Operations and Maintenance (O&M)/Recurring Costs

HEPA Filter Replacements

The rate at which HEPA filters must be replaced varies depending on usage, size, and effectiveness of the pre-filter. Manufacturers suggest replacing HEPA filters once or twice annually but indicate that high usage may necessitate more frequent replacement. To allow for a worst-case analysis, HEPA filters are assumed to be replaced at a rate of four filters per year per spray booth. An industrial size HEPA filter costs $639. For 89 new spray booths per year, the estimated total cost to replace HEPA filters is approximately $12,511,620 over the next 10 years.

Electricity

When compared to spray booths with traditional filters, spray booths with HEPA filters require a larger blower capacity and larger electric motor resulting in increased electricity usage. To save on electricity costs, the blower/electric motor may be connected to a variable frequency drive (VFD) which regulates the speed and the pressure drop of the air flowing through the HEPA filters in the spray booth. By regulating airflow speed to match demand, VFD technology can reduce energy consumption and therefore lead to cost savings. However, since not all spray booths are designed with VFD technology, this analysis does not reflect any potential cost savings from potential utilization of this technology.

The electricity rate in 2024 dollars of $0.249 per kilowatt-hour (kWh) was calculated from the published annual average of projected electricity rates between 2026 and 2035 in the California Energy Commission (CEC) 2025 Integrated Energy Policy Report (IEPR).[9] By applying the same methodology as conducted in the Final Socioeconomic Report for Proposed Rule 1469.1[10] to PAR 1401, operation of a larger blower and larger electric motor for a spray booth with HEPA filters is estimated to result in an additional electricity cost of $2,120.10 per unit per year after the passage of PAR 1401. Thus, if 89 permit applications for new, modified or relocated spray booths are submitted each year, the estimated total additional electrical cost for operating spray booths equipped with HEPA filters is approximately $10,377,871 over the next 10 years.

[9] California Energy Commission, 2025 IEPR Electricity Rate Forecast, https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=25-IEPR-03, accessed June 2026.

[10] South Coast AQMD, March 2005, Governing Board Meeting Agenda No. 31, Proposed Rule 1469.1 – Spraying Operations Using Coatings Containing Chromium, https://xappp.aqmd.gov/hb/2005/March/050331a.html, accessed June 2026.

Permit Renewal Fees

After permits are issued, facilities will be required to pay annual permit renewal fees. The cost of a permit renewal due to PAR 1401 is the difference between the fee in Schedule C ($2,090.75) for a spray booth equipped with HEPA filters and the fee in Schedule B ($583.73) for a spray booth equipped with traditional filters. Consistent with the earlier analysis of costs associated with permit application fees for equipment to be installed at non-Title V facilities, the analysis of permit renewal fees also assumes that all future permits will be for equipment operating at non-Title V facilities. The difference between permit renewal fees for a non-Title V facility for Schedule C and Schedule B is $1,507.02. Thus, if 89 new, modified, or relocated spray booths are equipped with HEPA filters each year, the total cost of permit renewal fees is approximately $7,376,863 over the next 10 years.

2. Use of Products Containing pCBtF and/or t-BAc

One-Time/Capital Costs

Permit Application Fees

According to Table I-A and Table Fee Rate-A of Rule 301, the permit application fee for one new spray booth with standard filtration under Schedule B is $5,117.92, while the permit application fee under Schedule C is $8,095.12 for one spray booth with carbon adsorber (non-regenerative); Schedule D is $11,172.66 for multiple spray booths (multiple) with carbon adsorber (non-regenerative); and Schedule E is $12,845.15 for one or more spray booths with carbon adsorber (regenerative).

Since the permit application fees in Schedules D and E are for multiple equipment units and, in the case of Schedule E, for a more complex type of control technology which involves the on-site regeneration of the activated carbon used in the adsorber, this analysis assumes that each permit application will be for one new spray booth with a non-regenerative carbon adsorber in accordance with the permit fee under Schedule C. This assumption is consistent with the analysis of spray booths with carbon adsorbers in the April 2026 Final Socioeconomic Impact Assessment, which was included in the Final Staff Report for Proposed Amended Rule 1124 - Aerospace Assembly and Component Manufacturing Operations.[11]

The permit application fee for each of these schedules also varies depending on whether the facility qualifies as a major source of emissions as defined in Regulation XXX – Title V permits. Historical data indicates that between 2018 and 2023, five out of the eight pCBtF/t-BAc facilities were Title V. While the number permit applications that may be submitted by Title V facilities in the future is unknown, this analysis assumes that all new permit applications for spray booths equipped with carbon adsorbers will be from Title V facilities.

Consequently, the compliance cost associated with a permit application for one spray booth equipped with a carbon adsorber due to PAR 1401 is the difference between Schedule C

[11] South Coast AQMD, April 2026, Governing Board Meeting Agenda No. 29, Proposed Amended Rule 1124 – Aerospace Assembly and Component Manufacturing Operations, Final Socioeconomic Assessment within the Final Staff Report, Attachment G, https://www.aqmd.gov/docs/default-source/agendas/governing-board/2026/2026-apr3-029.pdf, accessed June 2026.

($8,095.12) and Schedule B ($5,117.92) permit application fees for a Title V facility or $2,977.20. If South Coast AQMD receives two new permit applications each year until 2030, the sum of annualized costs over the 10-year analysis period is approximately $23,818.

Purchase and Installation of Spray Booths with Carbon Adsorbers

Prior to the adoption of PAR 1401, permit applications for new, modified or relocated spray booths for controlling emissions containing pCBtF and/or t-BAc would be equipped with standard filters. After PAR 1401 is adopted, permit applications for new spray booths for controlling emissions containing either pCBtF or t-BAc would require carbon adsorber technology to control the TAC emissions. Consequently, the compliance cost of spray booth installations as a result of PAR 1401 is the difference between the costs of a spray booth equipped with a carbon adsorber and a spray booth equipped with standard filters. According to cost data provided by spray booth manufacturers, the average difference in costs is $136,202.83. Thus, if there are two new spray booths equipped with carbon adsorbers each year, the sum of annualized costs over the 10-year analysis period is approximately $1,089,623. When reformulated coatings that contain less than 0.01% of pCBtF or t-BAc become available, facilities seeking to install new spray booths would no longer need to purchase carbon adsorbers if reformulated coatings are utilized since there would be no TAC emissions requiring controls. Instead, spray booths equipped with standard filters could be used. Therefore, this analysis assumes that no new permit applications for spray booths equipped with carbon adsorbers will be submitted after 2030.[12]

O&M/Recurring Costs

Carbon Replacement

The recurring O&M costs of operating a spray booth with a carbon adsorber include costs associated with periodically replacing the spent carbon with fresh activated carbon which typically occurs every six years. The cost to replace spent carbon with fresh activated carbon is approximately $206,604 per changeout per carbon adsorption system per facility, based on manufacturers' feedback. For two new spray booths with carbon adsorbers each year until 2030, the estimated total cost of replacing carbon is approximately $2,066,038 over the next 10 years.

Electricity

Similar to a spray booth with HEPA filters for controlling HDI emissions, a spray booth with a carbon adsorber for controlling pCBtF and t-BAc emissions requires a larger blower and a larger electric motor resulting in increased electricity usage when compared to operating a spray booth with standard filters. The estimated additional electricity usage from operating a spray booth with a carbon adsorber is based on the United States Environmental Protection Agency (U.S. EPA) Air Pollution Control Cost Manual Carbon Absorbers Calculation Spreadsheet.[13] The additional electricity cost associated with operating one new spray booth with a carbon adsorber is estimated

[12] Source-specific rules state when the prohibition of selling of coatings containing t-BAc and pCBtF will go into effect. For example, Rule 1151 was amended in November 2024 to prohibit the selling of t-BAc and pCBtF coatings by 2028. During recent amendments to other source-specific rules, the amendments prohibited the sale of coatings containing t-BAc and pCBtF by year 2030. The year 2030 was selected because it is the anticipated amount of time needed for manufacturers to complete reformulation. Similarly, for ongoing efforts seeking to amend other source-specific rules to prohibit the selling and use of coatings containing pCBtf and t-BAc, the year of 2030 ~~will be~~is being proposed as the effective date.

[13] U.S. EPA, Air Pollution Control Cost Manual, Section 3 – VOC Controls; Section 3.1 – VOC Recapture Controls, Chapter 1 – Carbon Adsorbers Calculation Spreadsheet, version published on November 12, 2020, https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution, accessed June 2026.

to be $2,844.35 per unit per year. If two new spray booths with carbon adsorbers are installed and operated each year until 2030, the estimated total cost of electricity is approximately $227,548 over the next 10 years.

Permit Renewal Fees

After permits are issued, facilities will be required to pay annual permit renewal fees. The cost of a permit renewal due to PAR 1401 is the difference between fees in Schedule C ($2,619.89) for a spray booth with carbon adsorber (non-regenerative) and Schedule B ($731.48) for a spray booth equipped with standard filters. Consistent with the earlier analysis of costs associated with permit application fees for equipment to be installed at Title V facilities, the analysis of permit renewal fees also assumes that all future permits will be for equipment operating at Title V facilities. The difference between the permit renewal fees for a Title V facility in Schedule C and Schedule B is $1,888.41. As explained earlier, this analysis assumes that no new permit applications for spray booths equipped with carbon adsorbers will be submitted after 2030 but for the equipment that is permitted between 2026 and 2030, permit renewal fees will occur annually. For applications of two new spray booths with carbon adsorbers issued permits per year until 2030, the total cost of the permit renewal fees for this equipment will be approximately $151,073 over the next 10 years.

Total Compliance Cost of PAR 1401

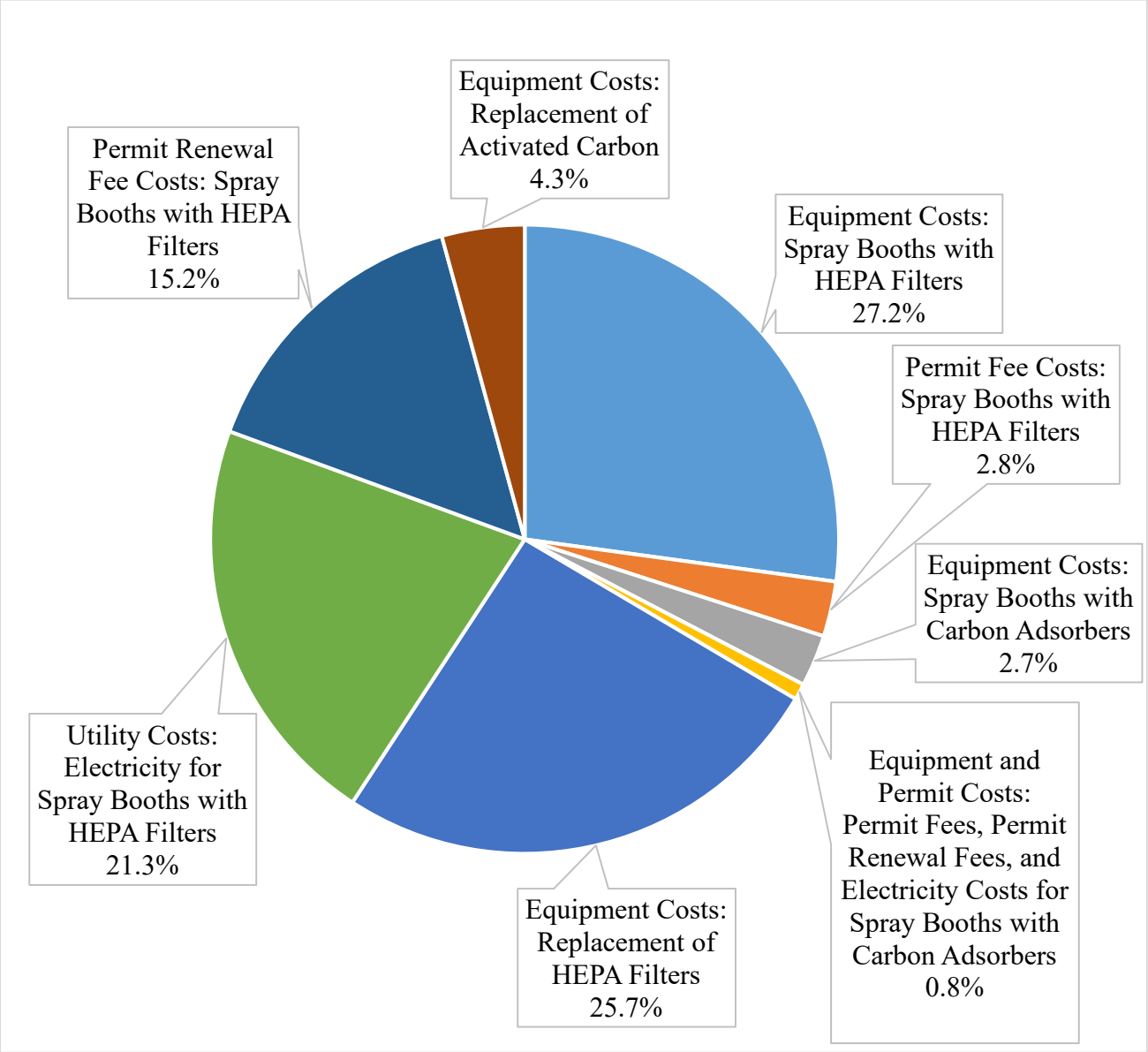
The total estimated compliance costs of PAR 1401 cover a 10-year forecast period, from 2026 to 2035. To calculate the present value of the total compliance costs, all amortized/annualized compliance costs have been discounted to year 2026. Table 3 summarizes the present value as well as the annual average of the amortized compliance costs from 2026 to 2035 associated with the implementation of PAR 1401. The total present value of the amortized compliance costs of PAR 1401 are estimated to be $45,798,191 and $38,564,784 at 1% and 4% discount rates, respectively. The average annual compliance cost over the period from 2026 to 2035 is estimated to range from $4,673,204 to $4,861,145 at a 1% to 4% real interest rate, respectively. Note that for the annual average estimates, only capital cost categories are affected by the interest rate, as interest applies to upfront capital investments, while recurring costs are not subject to financing and therefore remain unaffected.

Table 3
Total Present Value and Average Annual Estimated Costs of PAR 1401

	Present Value Worth 2026		Annual Average (2026-2035)	
Cost Categories	**1% Discount Rate**	**4% Discount Rate**	**1% Real Interest Rate**	**4% Real Interest Rate**
Capital/One-Time Costs				
Equipment Costs: Spray Booths with HEPA Filters	$12,440,370	$10,482,665	$1,164,134	$1,320,176
Permit Fee Costs: Spray Booths with HEPA Filters	$1,299,185	$1,094,736	$121,574	$137,870
Equipment Costs: Spray Booths with Carbon Adsorbers	$1,224,844	$1,051,278	$113,906	$129,174
Permit Fee Costs: Spray Booths with Carbon Adsorbers	$26,773	$22,979	$2,490	$2,824
Recurring Costs				
Equipment Costs: Replacement of HEPA Filters	$11,790,030	$9,934,667	$1,251,162	$1,251,162
Utility Costs: Electricity for Spray Booths with HEPA Filters	$6,951,413	$5,857,489	$737,686	$737,686
Permit Renewal Fee Costs: Spray Booths with HEPA Filters	$9,779,342	$8,240,395	$1,037,787	$1,037,787
Equipment Costs: Replacement of Activated Carbon	$1,927,221	$1,572,435	$206,604	$206,604
Utility Costs: Electricity for Spray Booths with Carbon Adsorbers	$215,764	$185,189	$22,755	$22,755
Permit Renewal Fee Costs: Spray Booths with Carbon Adsorbers	$143,250	$122,950	$15,107	$15,107
Total	**$45,798,191**	**$38,564,784**	**$4,673,204**	**$4,861,145**

Figure 1 presents the estimated average annual compliance costs of PAR 1401 by cost categories. The costs relating to spray booths with HEPA filters constitute the majority of the total average annual compliance costs of PAR 1401. Specifically, for facilities with HDI emissions, spray booths with HEPA filters, replacement of HEPA filters, and utility costs for operating spray booths with HEPA filters comprise 27.2%, 25.7% and 21.3% of total average annual compliance costs of PAR 1401, respectively. For facilities with pCBtF and/or t-BAc emissions, costs for spray booths with carbon adsorbers represent 7.7% of the total average annual costs of PAR 1401.

Figure 1
Average Annual Estimated Costs of PAR 1401 by Cost Category



MACROECONOMIC IMPACTS ON THE REGIONAL ECONOMY

The Regional Economic Modeling Inc. (REMI, PI+ v3) model was used to assess the total socioeconomic impacts of implementing PAR 1401.[14, 15] The model, which is comprised of analytical modules with embedded datasets and econometric features, links the economic activities occurring in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and considers five interrelated blocks: 1) output and demand; 2) labor and capital; 3) population and labor force; 4) wages, prices and costs; and 5) market shares.[16] It should be noted that the REMI model is not designed to assess impacts on individual facility operations. The model was used to assess the impacts of PAR 1401 on various industries that make up the local economy.

Macroeconomic Impacts of PAR 1401

The analysis of macroeconomic impacts is performed relative to the REMI baseline ("business as usual") forecast where PAR 1401 would not be implemented. Since PAR 1401 will only apply to new, relocated, or modified equipment or sources of HDI, pCBtF, or t-BAc and will not be applied retroactively to existing equipment or sources, the number of facilities that may be potentially affected by PAR 1401 (e.g., be required to install HEPA filters to control emissions of HDI or carbon adsorbers to control emissions of pCBtF and/or t-BAc) is not available and cannot be predicted with any degree of certainty.

The REMI analysis follows the same general approach used in the affected facilities analysis and the small business analysis by assuming that future affected facilities will resemble the industry distribution of facilities that use (1) HDI or (2) pCBtF or t-BAc with permit applications between 2016 and 2023 or between 2018 to 2023, respectively. Accordingly, the costs are allocated across the affected industries presented in Table 1 for HDI-related compliance costs based on each industry's percentage share of facilities. For example, because the Repair and Maintenance industry represents the largest share of facilities in Table 1 (65.4%), the REMI analysis assumes this industry will incur 65.4% of total HDI-related compliance costs. Similarly, these costs at the industry level are further allocated across four counties within South Coast AQMD region based on the location of these facilities. A similar approach was followed when estimating the industry distribution of pCBtF/t-BAc-related compliance costs. The analysis assumes that the affected facilities would finance the capital and one-time costs described above at a 4% real interest rate, and that these one-time costs are amortized over the 10-year analysis period from 2026 to 2035.

Direct costs of PAR 1401 are used as inputs to the REMI model which uses this information to assess secondary and induced impacts for all the industries in the four-county economy on an annual basis over the 2026-2035 period. Direct effects of PAR 1401 include the purchase of spray booths with HEPA filters, spray booths with carbon adsorbers, replacements of HEPA filters and carbon, electricity costs, permit application fees and permit renewal fees as discussed earlier in this document.

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[14] Regional Economic Modeling Inc. (REMI). Policy Insight® for the South Coast Area (70-sector model). Version 3. 2023.

[15] REMI v3 has been updated based on The U.S. Economic Outlook for 2022-2024 from the University of Michigan's Research Seminar in Quantitative Economics (RSQE) release on May 19, 2023, The Long-Term Economic Projections from CBO (supplementing CBO's March 2023 report, The 2023 Long-Term Budget Outlook).

[16] Within each county, the industrial sectors are made up of 156 private non-farm industries and sectors, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 ages/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration. For details, please refer to REMI online documentation at http://www.remi.com/products/pi.

While compliance expenditures incurred by the potentially affected facilities would increase their cost of doing business, the purchase of the required equipment and services would increase the sales and subsequent spending of businesses in various sectors, some of which may be located in South Coast AQMD's jurisdiction. Table 4 lists the 70-sector NAICS codes used in REMI model that would either incur a direct cost or directly benefit from the compliance spending.

Table 4
Industries Affected by PAR 1401

Source of Compliance Cost	Industry Sector Incurring Compliance Cost	Industry Sector Gaining Revenue
Equipment Costs: Spray Booths with HEPA Filters	Multiple Industries Based on South Coast AQMD Permit Data from 2016 - 2023*	Machinery Manufacturing (NAICS 333)
Equipment Costs: Spray Booths with Carbon Adsorbers		
Equipment Costs: Replacement of HEPA Filters		Wholesale Trade (NAICS 42)
Equipment Costs: Replacement of Activated Carbon		
Permit Fee Costs: Spray Booths with HEPA Filters		State and Local Government (NAICS 92)
Permit Fee Costs: Spray Booths with Carbon Adsorbers		
Permit Renewal Fee Costs: Spray Booths with HEPA Filters		
Permit Renewal Fee Costs: Spray Booths with Carbon Adsorbers		
Utility Costs: Electricity for Spray Booths with HEPA Filters		Utilities (NAICS 22)
Utility Costs: Electricity for Spray Booths with Carbon Adsorbers		

* The industry sectors assumed to incur HDI-related compliance costs are detailed in Table 1 on pp. 3-4. The industry sectors assumed to incur pCBtF/t-BAc-related compliance costs include State and Local Government (NAICS 92), Retail trade (NAICS 44-45), Motion picture industries (NAICS 512), Paper manufacturing (NAICS 332), Chemical manufacturing (NAICS 325), Computer and electronic product manufacturing (NAICS 334), and Support activities for transportation industries (NAICS 487-488).

Regional Job Impacts

When the compliance cost is annualized using a 4% real interest rate, the REMI model projects that there would be 37 jobs foregone annually on average over the 2026 – 2035 period, relative to the baseline forecast. The sectors of Repair and Maintenance, Retail Trade, and Construction are expected to forego four, five, and seven jobs annually, respectively, on average relative to the

baseline forecast. These job losses are attributed to the sectors incurring the largest share of PAR 1401 compliance costs and are therefore the most affected sectors. On the other hand, the sectors of State and Local Government (NAICS 92), Wholesale Trade (NAICS 42) and Machinery Manufacturing (NAICS 333) will gain jobs overall during the forecast period, mainly due to the beneficial induced demand from implementing PAR 1401. Table 5 presents the forecasted job impacts for selected years in the sectors with the largest magnitude of average annual job impacts. The "All Other Industries" row in Table 5 presents the sum of the job impacts for all other industries not shown in the table.

Table 5
Projected Job Impacts of PAR 1401 for Selected Industry Sectors and Years

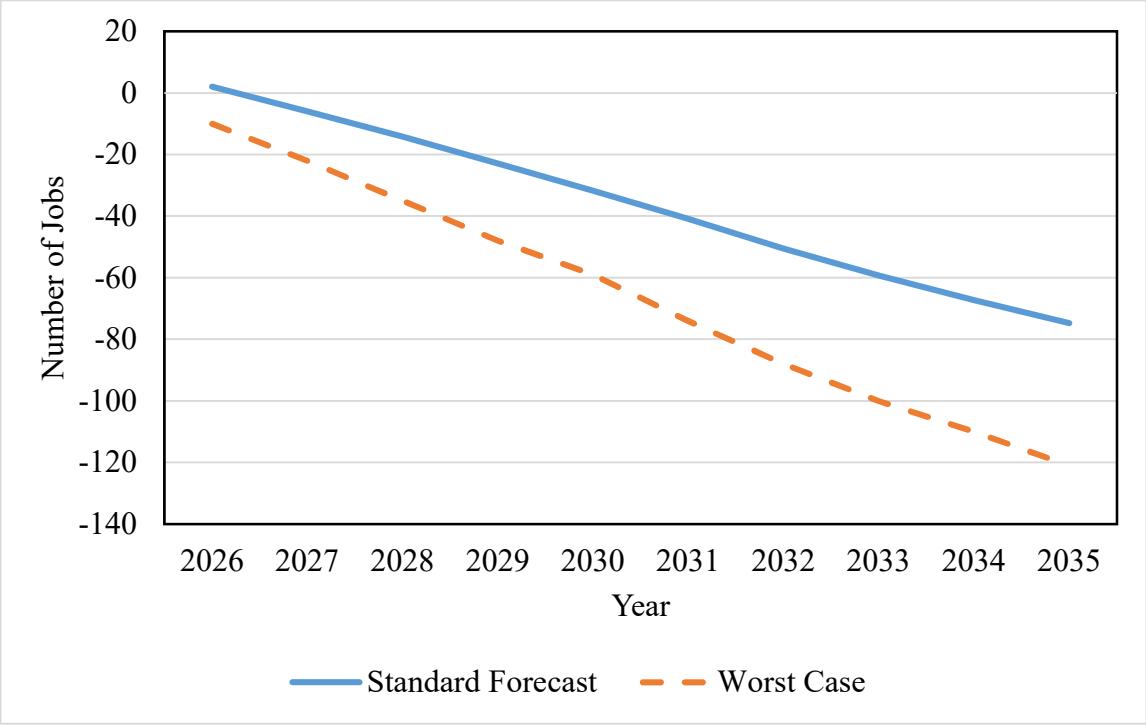
Industry Sector (NAICS Code)	2026	2030	2035	Annual Average	Baseline Number of Jobs	% of Baseline Jobs
State and Local Government (92)	2	2	1	2	920,213	0.0002049%
Wholesale Trade (42)	1	1	2	1	429,866	0.0003129%
Machinery Manufacturing (333)	2	1	1	1	26,075	0.0051021%
Utilities (22)	0	1	1	1	22,828	0.0024575%
Pipeline Transportation (486)	0	0	0	0	1,087	0.0000859%
Personal and laundry services (812)	0	-2	-4	-2	416,369	-0.0005336%
Real estate (531)	0	-2	-4	-2	668,028	-0.0003465%
Repair and maintenance (811)	-1	-4	-9	-4	146,462	-0.0030707%
Retail trade (44-45)	-1	-5	-10	-5	879,755	-0.0006141%
Construction (23)	0	-7	-11	-7	509,796	-0.0013534%
All Other Industries	0	-17	-42	-20	7,842,882	-0.0002593%
All Industries	**2**	**-32**	**-75**	**-37**	**11,863,362**	**-0.0003081%**

Note: Totals may not sum due to rounding.

In addition, in 2013, South Coast AQMD contracted with Abt Associates Inc. to review the South Coast AQMD socioeconomic assessments for Air Quality Management Plans and individual rules with the goal of providing recommendations that could enhance South Coast AQMD's socioeconomic analyses. In 2014, Abt Associates Inc. published a report which included a recommendation for South Coast AQMD to enhance socioeconomic analyses by testing major assumptions through conducting a scenario analysis. As such, South Coast AQMD generally includes an alternative worst-case scenario in Socioeconomic Impact Assessments which analyzes a scenario that assumes the affected facilities would purchase all feasible monitoring equipment

and services from providers located outside of the South Coast AQMD's jurisdiction.[17] In simple terms, this alternative worst-case scenario only models the impacts of the costs of compliance with PAR 1401 while excluding the revenues which would benefit equipment and service providers. This hypothetical scenario is designed to test the sensitivity of the embedded assumptions in the REMI model about how compliance costs and revenues would be distributed inside and outside of South Coast AQMD's jurisdiction. This worst-case scenario would result in an annual average of approximately 67 jobs foregone compared to the baseline scenario. The 67 jobs foregone represent a small portion of the average forecasted baseline jobs in the regional economy at an estimated 0.0006%. Figure 2 presents the projected regional job impacts over the 2026 – 2035 period for both the standard and the worst-case forecasts.

Figure 2
Projected Regional Job Impacts of PAR 1401, 2026 – 2035



Competitiveness and Prices

The overall impact of PAR 1401 on production costs and delivered prices in the region is not expected to be substantial. Based on the REMI analysis, the implementation of PAR 1401 is projected to increase the relative cost of production by 0.0004% and increase the relative delivered price of goods by 0.0003% for all the industries in four county region.

[17] Abt Associates Inc., August 2014, Review of the SCAQMD Socioeconomic Assessments, Chapter 6, Section 3, https://www.aqmd.gov/docs/default-source/agendas/aqmp/scaqmd-report---review-socioeconomic-assessments.pdf, accessed June 2026

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Office of the Law Revision Control: United States Code, Title 42 – The Public Health and Welfare, Chapter 83 – Energy Extension Service, Subchapter V-Permits, §7661f. Small business stationary source technical and environmental compliance assistance program, (c) Eligibility, https://uscode.house.gov/view.xhtml?req=code+of+federal+regulations&f=treesort&num=2110

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South Coast AQMD, April 2026, Governing Board Meeting Agenda No. 29, Proposed Amended Rule 1124 – Aerospace Assembly and Component Manufacturing Operations, https://www.aqmd.gov/docs/default-source/agendas/governing-board/2026/2026-apr3-029.pdf

South Coast AQMD, September 2017, Rule 1401 – New Source of Toxic Air Contaminants, https://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1401.pdf

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United States Small Business Administration, March 2023, Table of Small Business Size Standards, https://www.sba.gov/document/support-table-size-standards

ATTACHMENT I

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SUBJECT: **NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

PROJECT TITLE: **PROPOSED AMENDED RULE 1401 – NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS**

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (South Coast AQMD), as Lead Agency, has prepared a Notice of Exemption pursuant to CEQA Guidelines Section 15062 – Notice of Exemption for the project identified above.

If the proposed project is approved, the Notice of Exemption will be filed for posting with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino Counties. The Notice of Exemption will also be electronically filed with the State Clearinghouse of the Governor's Office of Land Use and Climate Innovation for posting on their CEQAnet Web Portal which may be accessed via the following weblink: https://ceqanet.lci.ca.gov/Search/Recent. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2026.

NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

To:	County Clerks for the Counties of Los Angeles, Orange, Riverside, and San Bernardino; and Governor's Office of Land Use and Climate Innovation – State Clearinghouse	**From:**	South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

Project Title: Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants

Project Location: The proposed project is located within the South Coast Air Quality Management District's (South Coast AQMD) jurisdiction, which includes the four-county South Coast Air Basin (all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties), and the Riverside County portion of the Salton Sea Air Basin and the non-Palo Verde, Riverside County portion of the Mojave Desert Air Basin.

Description of Nature, Purpose, and Beneficiaries of Project: Proposed Amended Rule 1401 (PAR 1401) updates South Coast AQMD's health-risk-based permitting requirements for new, modified, or relocated equipment that emit toxic air contaminants (TACs). PAR 1401 incorporates new California Office of Environmental Health Hazard Assessment (OEHHA)-adopted risk values by adding nine new compounds to the Table I list of TACs, adding a new reference exposure level for one existing compound, adding 8-hour chronic hazard index requirements, removing the outdated Table II list of TACs with previously tentative risk values, and improving clarity and alignment with current risk assessment procedures. PAR 1401 requirements will not be applied retroactively to existing equipment or sources. However, new, modified or relocated equipment emitting polymeric Hexamethylene Diisocyanate (HDI), para-chlorobenzotrifluoride (pCBtF), or tertiary butyl acetate (t-BAc) may require installation of enhanced air pollution control equipment in order to obtain a permit to operate. Implementation of PAR 1401 will provide improved health protective measures to minimize TAC emissions and reduce exposure and associated risk which will benefit workers, nearby receptors, and surrounding communities.

Public Agency Approving Project:	**Agency Carrying Out Project:**
South Coast Air Quality Management District	South Coast Air Quality Management District

Exempt Status:
CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption

Reasons why project is exempt: South Coast AQMD, as Lead Agency, has reviewed the proposed project (PAR 1401) pursuant to: 1) CEQA Guidelines Section 15002(k) General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 Review for Exemption, procedures for determining if a project is exempt from CEQA. It can be seen with certainty that there is no possibility that implementation of PAR 1401 may have a significant adverse effect on the environment because: 1) installation of new, enhanced air pollution control equipment or the modification of existing air pollution control equipment (if required), would typically involve minimal construction activities and minor operational differences and would only apply to new, modified, or relocated equipment that emits polymeric HDI, pCBtF, or t-BAc; and 2) other changes are administrative in nature. Therefore, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption.

Date When Project Will Be Considered for Approval (subject to change): South Coast AQMD Governing Board Public Hearing: August 7, 2026		
CEQA Contact Person: Farzaneh Khalaj, Ph.D.	**Phone Number:** (909) 396-3022	**Email:** fkhalaj@aqmd.gov
PAR 1401 Contact Person: Tiffani To	**Phone Number:** (909) 396-2738	**Email:** tto@aqmd.gov

Date Received for Filing: _____ **Signature:** *(Signed and Dated Upon Board Approval)*

Kevin Ni
Program Supervisor, CEQA
Planning, Rule Development, and Implementation

Attachment J

Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants

BOARD MEETING

AUGUST 7, 2026

Rule 1401 Background

- Rule 1401 requires that new, modified, or relocated equipment emitting toxic air contaminants (TACs) listed in Rule 1401 Table I be below specific health risk levels in order to be permitted
  - TACs are identified by Office of Environmental Health Hazard Assessment (OEHHA)
- All new, modified, or relocated equipment must not exceed the following thresholds before a permit is issued:

Cancer Risk Threshold	Noncancer Risk Threshold
1 in a million without T-BACT*	Acute hazard index of 1
10 in a million with T-BACT*	Chronic hazard index of 1

**Best Available Control Technology for Toxics*

Approach for Risk Reduction

- Rule 1401 is periodically updated to reflect TACs identified by OEHHA
- New or revised health values will not be added until an assessment is conducted to understand the impact to new, modified, or relocated equipment
- Existing permits without further permit actions are not impacted by PAR 1401
- South Coast AQMD implements the Air Toxics Hot Spots Information and Assessment Act (AB 2588) through Rule 1402 – Control of Toxic Air Contaminants from Existing Sources by requiring the evaluation and reduction of TACs at existing facilities
  - Compounds and health risk values to be evaluated are updated and specified in CARB's Emission Inventory Criteria Guidelines
  - Impacts of these updates on existing sources are reported in the AB2588 annual report

Key Proposed Amendments

Toxic Air Contaminants
1,4-Dichlorobenzene
1-Bromopropane
Cobalt
Hexamethylene Diisocyanate (HDI) (Monomer)
Isoprene
Parachloro-benzotrifluoride (PCBTF)*
Polymeric HDI
Tertiary Butyl Acetate (TBAc)
Trimethylbenzene
Trivalent Chromium

- Add or update ten compounds into Table I
  - Upon adoption, health risks will be evaluated during the permitting process
- Align with South Coast AQMD Health Risk Assessment Procedures
  - Clarify that the 8-hour hazard index is evaluated during permitting process
  - Add a column in Table I for 8-hour reference exposure levels
- Remove Rule 1401 Table II
  - Listed compounds with *proposed* risk values
  - Table II is not referenced in Rule 1401 or 1402

*Effective date December 31, 2027

Potential Impacts

- Adding compounds into Table I are expected to have minimal impacts for seven of the ten TACs
- Health risk assessments for three TACs may exceed the health risk thresholds unless the facility:
  - Installs a control device;
  - Reduces usage amount; or
  - Conducts a more refined health risk assessment
- Evaluated potential regulatory impacts to future permit evaluations due to adding new TACs into Rule 1401 based on prior applications

Compounds with Potential Impact
Polymeric Hexamethylene Diisocyanate (HDI)
pCBtF
t-BAc

Potential Impacts – Polymeric HDI, pCBtf and t-BAc

Polymeric HDI

- Polymeric HDI is in coatings used in the automotive, aerospace, and metal coatings industries
- Addition of polymeric HDI into Table I is expected to have impacts during the health risk assessment
- Estimated that 90 spray booth applications will be submitted each year for polymeric HDI
- Utilize enhanced controls such as HEPA filters by acquiring a new spray booth with HEPA filters or retrofitting an existing spray booth

pCBtf and t-BAc

- pCBtF and t-BAc are solvents used in various industries such as automotive, aerospace, metal coatings, etc
- Staff is working on a pollution prevention approach to phasing out pCBtF and t-Bac through source specific rules
- To provide time for the reformulation of coatings and solvents, PAR 1401 delays the effective date for pCBtF to December 31, 2027

Socioeconomic Impact Assessment and California Environmental Quality Act (CEQA)

Socioeconomic Impact Assessment

- Average annual compliance cost of implementing PAR 1401
  - Ranges from $4.67 to $4.86 million from 2026 to 2035*
  - 92.3% of costs are related to HDI and 7.7% of costs are related to PCBTF and/or t-BAc
- Average 37 net jobs foregone annually from 2026 to 2035

*Using a real interest rate of 1% and 4%, respectively

California Environmental Quality Act (CEQA)

- Minimal construction activities and minor operational differences anticipated related to HDI, pCBtF and t-BAc
- No significant adverse environmental impacts expected
- A Notice of Exemption has been prepared

Recommendation

Adopt Resolution

- Determining that Proposed Amended Rule 1401 is exempt from the requirements of the California Environmental Quality Act
- Amending Rule 1401