

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
Los Angeles Region
320 W. 4th Street, Suite 200,
Los Angeles, California

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
For
AIR PRODUCTS AND CHEMICALS, INC.
(Wilmington Hydrogen Facility)

NPDES Permit No.: CA0063363
Public Notice No.: 02-050

FACILITY ADDRESS

Air Products and Chemicals, Inc.
700 Henry Ford Avenue
Wilmington, CA 90744

FACILITY MAILING ADDRESS

Air Products and Chemicals, Inc.
700 Henry Ford Avenue
Wilmington, CA 90744
Contact: Marc Steinman
Telephone: (310) 952-9172

I. Public Participation

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced facility. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

To be fully responded to by staff and considered by the Regional Board, written comments should be received at the Regional Board offices by 5:00 p.m. on November 15, 2002.

B. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: December 12, 2002
Time: 9:00 a.m.
Location: Metropolitan Water District of Southern California
700 North Alameda Street, Board Room
Los Angeles, California

Interested persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

C. Waste Discharge Requirements Appeals

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board, Office of Chief Counsel
ATTN: Elizabeth Miller Jennings, Senior Staff Counsel
1001 I Street, 22nd Floor
Sacramento, CA 95814

D. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special conditions, comments received, and other information are on file and may be inspected at 320 West 4th Street, Suite 200, Los Angeles, California 90013, at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Los Angeles Regional Board by calling (213) 576-6600.

E. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

II. Purpose of Order

Air Products and Chemicals, Inc. (hereinafter Air Products or Discharger) discharges wastes from its Wilmington Hydrogen Facility (Hydrogen Plant) under WDRs contained in Order No. 94-116 adopted by the Regional Board on December 5, 1994. Order 94-116 serves as a NPDES permit (CA0063363) for the facility.

Air Products has filed a ROWD and has applied for renewal of its WDRs and NPDES permit.

III. Description of Facility and Waste Discharge

The Hydrogen Plant manufactures hydrogen and is located at 700 Henry Ford Avenue, Wilmington, California. The Discharger supplies hydrogen to the Ultramar Inc. Wilmington Refinery (Ultramar Refinery) for use in its formulated fuels program. The Hydrogen Plant has a total design capacity of 80 million standard cubic feet per day of gaseous hydrogen. Gaseous hydrogen is produced by reacting steam with hydrocarbon feed stock supplied by the Ultramar Refinery. The manufacturing processes consist of feed stock hydrogenation and sulfur removal, reforming in the steam methane reformer, shift conversion, and hydrogen purification.

Air Products through their Hydrogen Plant discharge wastewaters and storm water runoff to Dominguez Channel, via two discharge points located on the west bank of the channel, south of Anaheim Street, within the estuary. The waste then flows to East Basin Consolidated Slip, Los Angeles Inner Harbor. The wastewaters discharge through two different outfalls (separated approximately by a distance of 5 feet). Because of the proximity to each other the Latitude (33°46'76") and Longitude (118°14'33") will be considered the same.

Discharge Serial No. 001 - Inplant Wastewaters: Inplant wastewaters of 591,000 gallons per day (gpd) consist of cooling tower blowdown, boiler blowdown, hydrogen plant condensate, and several boiler make-up water treatment system streams (filter backwash, softener regeneration wastewater, reverse osmosis reject, ion exchange, regeneration wastewater).

Discharge Serial No. 002 – Storm Water and Non-process Wastewater: The maximum allowed discharge flow of 1,089,600 gpd is based on maximum 3.74 inches of rainfall for a 24-hour period (on a facility area of 463,100 square feet) during the last five years (1,079,600 gpd), plus 10,000 gpd to account for fire test water and leaks and spills from cooling water and boiler steam/water lines. The discharge on any given day will be proportionate to the rain in the last 24 hours plus 10,000 gpd. If there is no rain, the maximum allowable discharge is 10,000 gpd, includes mainly storm water runoff (from both internal, equipment containing areas and perimeter areas) during wet season. Storm water collected from internal areas pass through parallel oil/water separators. The oil water separators then discharge into a sump which collects the perimeter area storm water. Discharge flow during dry season results from occasional fire water system tests and

sporadic leaks from boiler and cooling water equipment and lines. The water goes to oil/water separator and then to a final collection sump.

Over the six-year period between September 1996 and April 2002, the Discharger had seventeen exceedances of oil and grease (one), hexavalent chromium (one), BOD (one), residual chlorine (two), pH (two), TSS (four), and acute toxicity (six). Violations have been identified and are being evaluated for appropriate enforcement.

Air Products has applied to the City of Los Angeles, Bureau of Sanitation, Los Angeles Industrial Wastewater Division to discharge the Hydrogen Plant wastewater to the municipal sanitary sewer. The City of Los Angeles is currently performing hydraulic studies to determine the hydraulic capacity availability.

The Regional Board and the United States Environmental Protection Agency (USEPA) have classified Air Product discharge as a minor discharge.

IV. Applicable Plans, Policies, and Regulations

The following documents are bases for proposed requirements:

- A. The federal Clean Water Act (CWA).
- B. Code of Federal Regulations, Title 40 (40 CFR) – Protection of Environment, Chapter 1, Environmental protection Agency, Subchapter D, Water programs, Parts 122-125 and Subchapter N, Effluent Guidelines. These regulations provide effluent limits for conventional pollutants discharged .
- C. *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) adopted June 13, 1994; The Basin Plan provides water quality objectives and lists the following beneficial uses for Dominguez Channel estuary.

Existing: water contact recreation, non-contact water recreation, commercial and sport fishing, estuarine habitat, marine habitat, wildlife habitat, preservation of rare and endangered species, migration of aquatic organisms, and spawning, reproduction, or early development.

Potential: navigation.

- D. There is public contact in the receiving water downstream of the discharge; therefore, the quality of wastewater discharge to the Dominguez Channel estuary must be such that no public health hazard is created.
- E. *Water Quality Control Plan for Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan), adopted by the State Water Resources Control Board (State Board) on September 18, 1975. This Plan

provides temperature objectives for Dominguez Channel.

- F. *The California Toxics Rule (CTR)* promulgated by the USEPA on May 18, 2000, and *The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) adopted by the State Board on March 2, 2000. The SIP was effective April 28, 2000 with respect to the priority pollutants criteria that were promulgated for California by the USEPA through the National Toxics Rule (NTR) and also with respect to the priority pollutant objectives established by the Regional Boards in their Basin Plans, with the exception of the provision on “alternate test procedures for individual discharges” that have been approved by the USEPA Regional Administrator. The “alternate test procedures” provision was effective on May 22, 2000. The SIP was effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The CTR establishes numerical criteria for priority pollutants for inland surface water as well as water in the enclosed bays and estuaries.
- G. Existing waste discharge requirements are contained in Board Order No. 94-116 adopted by this Board on December 5, 1994

V. Regulatory Basis for Effluent Limitations

Section 402(o) of the Clean Water Act and 40 CFR 122.44(l) require that water-quality based effluent limitations (WQBELs) in re-issued permits are at least as stringent as in the existing permit. Therefore, some of the requirements in the proposed Order are based on limits specified in the Air Products’ existing permit.

There are several other factors affecting the development of limitations and requirements in the proposed Order. These are discussed as follows:

A. Water Quality-Based Effluent Limitations (WQBELs)

The WQBELs are based on the Basin Plan, other State plans and policies, or USEPA water quality criteria. These requirements, as they are met, will protect and maintain existing beneficial uses of the receiving water.

The CTR and SIP require dischargers’ submittal of data sufficient to conduct the determination of priority pollutants requiring WQBELs and to calculate the effluent limitations. The CTR criteria for saltwater or human health for consumption of organisms, whichever is more stringent, are used to prescribe the effluent limitations in this Order to protect the beneficial uses of the Dominguez Channel estuary.

B. Reasonable Potential Analysis (RPA)

As specified in 40 CFR 122.44(d)(1)(i) and (ii), permits are required to include limits for toxic pollutants that are or may be discharged at a level which cause, have reasonable

potential to cause, or contribute to an excursion above any State water quality standard.

The SIP specified three triggers to complete a RPA:

1. Trigger 1 – If the maximum effluent concentration (MEC) is greater than or equal the CTR water quality criteria (C), a limit is needed.
2. Trigger 2 – If $MEC < C$ and background water quality (B) $> C$, a limit is needed.
3. Trigger 3 – Use other information to perform RPA .

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger shall be required to gather the appropriate data for the Regional Board to conduct the RPA. Upon review of the data and if the Regional Board determines that effluent limits are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

C. Impaired Water Bodies in 303 (d) List

The USEPA approved the State's 303 (d) list of impaired water bodies. The list was prepared in accordance with Section 303 (d) of the federal CWA to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. USEPA requires final effluent limits for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDL) and waste loads allocation (WLA) results.

For 303(d) listed pollutants, the Regional Board plans to develop and adopt TMDLs which will specify WLAs for point sources and load allocations (LAs) for non-point sources, as appropriate. Following the adoption of TMDLs by the Regional Board, NPDES permits will be issued with effluent limits for water quality based on applicable WLAs.

D. Interim Limits

Air Products may not be able to achieve immediate compliance with the WQBELs for hexavalent chromium, copper, cyanide, silver, zinc, and dichlorobromomethane for Discharge Serial Number 001 and copper, cyanide, mercury, and silver for Discharge Serial Number 002 contained in Section I.B.5.b of the WDRs. Data submitted in self monitoring reports indicate that these constituents have been detected at a concentration greater than the new limit proposed in the Order.

40 CFR Part 131.38(e) provides conditions under which interim effluent limits and compliance schedules may be issued. The CTR and SIP allow inclusion of an interim limit with a specific compliance schedule in an NPDES permit for priority pollutants if the limit for the priority pollutant is CTR-based.

The Discharger, in a letter dated October 3, 2002, indicated that it is infeasible to achieve immediate compliance with the CTR-derived WQBELs for the identified priority pollutants from RPA, and submitted a compliance schedule. The Discharger requested a 36 month compliance schedule, but a compromised 30 month period is proposed. Interim limits based on current treatment facility performance for priority pollutants that have been identified by RPA calculations are contained in this NPDES permit.

Commencing with the date of the adoption of the Order to June 15, 2005, Air Products shall comply with the performance-based interim limits for toxic pollutants listed below for Discharge Serial Numbers 001 and 002

a. Discharge Serial Number 001

Constituent	Units	Discharge Limitations Monthly Average
Hexavalent chromium	µg/L	45
Copper	µg/L	28
Cyanide	µg/L	53
Dichlorobromomethane	µg/L	68
Silver	µg/L	36
Silver	µg/L	130

The interim limit are set at the 95th percentile of the available monitoring data results.

b. Discharge Serial Number 002

Constituent	Units	Discharge Limitations Monthly Average
Copper	µg/L	40
Cyanide	µg/L	50
Mercury	µg/L	2
Silver	µg/L	3

Only two monitoring sampling results were available. All constituents, except copper were non detects and the detection value is used as the interim limit. For copper the detected value of 40 µg/L (the second value is non-detect) is used as the interim limit

The SIP requires that the Regional Board establish other interim requirements such as requiring the discharger to develop pollutant minimization and/or source control measures and participate in the activities necessary to develop final effluent limitations. When interim requirements have been completed, the Regional Board shall calculate final WQBELs for that pollutant based on the collected data, reopen the permit, and include the final effluent limitations in the permit provisions. Once final limitations become effective, the interim limitations will no longer apply.

VI. Bases for Effluent Limitations

A. Reasonable Potential Analysis (RPA)

RPA was performed for conventional, non-conventional, and toxic pollutants for which effluent data were available. The final input data used in the RPA are summarized in the attachment of RPA results. Best professional judgment was used in this proposed Order to determine the presence and reasonable potential of each toxic pollutant. Effluent limitations are prescribed for pollutants which have reasonable potential of exceeding water quality objectives.

Additional consideration was given to pollutants for which the Dominguez Channel estuary is considered impaired due to 303(d) listing. These impairing pollutants include: lead, aldrin, chlordane, DDT, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, total polychlorinated biphenyls (PCBs), copper, zinc, polynuclear aromatic hydrocarbons (PAHs), ammonia, chromium, and toxaphene.

For some pollutants, including aldrin, alpha-BHC, beta-BHC, chlordane, DDT, dieldrin, endrin, heptachlor, heptachlor epoxide, total PCBs, toxaphene, and TCDD equivalents, are neither used or manufactured or known to be associated with hydrogen manufacturing facility. Effluent limitations are not prescribed for these pollutants; however, monitoring is required for future evaluation.

B. Conventional/Non-conventional Pollutants

Conventional and non-conventional pollutants such as pH, temperature, oil and grease, fecal coliform, BOD, suspended solids, settleable solids, chlorine residual, and ammonia are based on Basin Plan, 40 CFR, or the existing permit whichever more stringent.

C. Bases for whole effluent toxicity

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or

receiving water biota. These acute and chronic toxicity limits in the Basin Plan and the existing permit are necessary to ensure that this objective is protected.