STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 W. 4th Street, Suite 200, Los Angeles

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
for
PRAXAIR INCORPORATED
(Wilmington)

NPDES Permit No.: CA0001848
Public Notice No.: 01-023

FACILITY ADDRESS
Praxair Incorporated
Wilmington Plant
2300 East Pacific Coast Highway
Wilmington, CA 90744

FACILITY MAILING ADDRESS
Praxair Incorporated
2300 East Pacific Coast Highway
Wilmington, CA 90744
Contact: Donald E. McMackin
Telephone: (562) 983-2178

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, 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 Board, written comments should be received at the Regional Board offices by 5:00 p.m. on January 7, 2002.

B. Public Hearing

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

Date: January 24, 2002
Time: 9:00 a.m.
Location: Richard H. Chambers U.S. Court of Appeals Bldg., Courtroom 3
125 South Grand Avenue
Pasadena, CA 91105

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 Requirement 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
P.O. Box 100
Sacramento, CA 95812

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 8:00 am and 5:00 pm, 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

Praxair Incorporated (hereinafter Praxair or Discharger) discharges wastes from its Wilmington plant under WDRs contained in Order No. 95-156 adopted by this Board on

December 4, 1995. Order 95-156 serves as an NPDES permit (CA0001848) for the facility.

Praxair has filed a report of waste discharge (ROWD) and has applied for renewal of its WDRs and NPDES permit.

III. Description of Facility and Waste Discharge

The Praxair Wilmington plant, a cryogenic air-separation facility, is located at 2300 East Pacific Coast Highway, Wilmington, California. This facility produces oxygen, nitrogen, argon, and 27-29 megawatts of electric power from its natural gas cogeneration unit. The cogeneration unit provides electric power for its on-site use for the air separation process.

Praxair discharges up to 150,000 gallons per day of wastewater to a storm drain in Pacific Coast Highway (Longitude 118◦13'40", Latitude 33◦27'23") to the Dominguez Channel estuary, a water of the United States. There are two cooling tower units (No.1 and No. 2) in this facility. Unit No.1 is for the cryogenic air-separation plant and Unit No.2 is for the cogeneration unit. The wastewater discharged from the cryogenic air-separation plant consist of up to 132,000 gallons per day of cooling tower (No.1) beedoff, water softener (No.1) and boiler (No.1) blowdown, air compressor condensate, and effluent from an oil-water separator for truck washing and oily water from liquefier compressors and the generation steam turbine skid. Additionally, the cogeneration unit discharges up to 18,000 gallons per day of wastewater consisting of cooling tower (No.2) bleedoff, boiler (No.2) blowdown, and water softener (No.2) blowdown.

Praxair has studied the possibility of discharge to a sanitary sewer line and determined that the connection to the sanitary sewer is not economically feasible.

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

The effluent characteristics as reported in the ROWD are summarized as follows:

	Concentration, mg/L or as specified	
Constituents	Daily Maximum	Monthly Average
Flow, mgd	0.163	0.07
Biochemical oxygen demand (BOD)	2.0	---
Chemical oxygen demand (COD)	106	45.1
Total suspended solids (TSS)	24	10.8
Ammonia (as N)	3.0	0.53
pH, Std units	7.3-8.5	---
Oil and grease	11	2.5
Antimony, µg/L	<15	---

Constituents	Concentration, mg/L or as specified	
	Daily Maximum	Monthly Average
Arsenic, µg/L	<15	---
Beryllium, µg/L	<1	---
Cadmium, µg/L	<5	---
Chromium, µg/L	7.01	---
Copper, µg/L	198	---
Lead, µg/L	96.4	---
Mercury, µg/L	<0.5	---
Nickel, µg/L	12.5	---
Selenium, µg/L	<15	---
Silver, µg/L	<5	---
Thallium, µg/L	<15	---
Zinc, µg/L	140	---
Cyanide, µg/L	<50	---
Phenols, µg/L	<9.5	---
Benzene, µg/L	<0.5	---
Bromodichloromethane, µg/L	1.8	---
Chloroform, µg/L	2.2	---
Dibromochloromethane, µg/L	1.2	---

Other priority pollutants were not reported, or were reported as non-detected.

Over the five-year period between January 1996 and December 2000, the Discharger had fourteen exceedances of the daily maximum for COD, detergent (as MBAS), total suspended solids, and total residual chlorine. Exceedances were recorded in February, June, July, September, and November of 1996, March, April, June, and July of 1997, August of 1999, and March of 2000. Violations have been identified and are being evaluated for appropriate enforcement.

IV. Applicable Plans, Policies, and Regulations

The following documents are bases for proposed requirements:

1. The federal Clean Water Act (CWA).

2. 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 .

3. *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.

4. 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.

5. *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.

6. *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.

7. Existing waste discharge requirements contained in Board Order No. 95-156, adopted by the Regional Board on December 4, 1995.

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 Praxair Wilmington's existing permit.

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

1. 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.

2. 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:

   a. Trigger 1 – If the maximum effluent concentration (MEC) is greater than or equal the CTR water quality criteria (C), a limit is needed.

   b. Trigger 2 – If MEC<C and background water quality (B) > C, a limit is needed.

   c. 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.

3. Impaired Water Bodies in 303 (d) List

   The USEPA approved the State's 303 (d) list of impaired water bodies (Table 1). 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.

4. Interim Limits

The Praxair Wilmington facility may not be able to achieve immediate compliance with the WQBELs for copper, lead, nickel, and zinc contained in Section I.B.5.b of the WDRs. Data submitted in self monitoring reports indicate that these four 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. Interim limits for copper, lead, nickel, and zinc which are contained in this NPDES permit are shown in the following Tables. The Praxair proposed interim limits and compliance schedule and staff's calculation sheets of interim limits are presented in the attachment.

Commencing with the date of this Order to January 24, 2003, Praxair shall comply with the performance-based interim limits listed below for copper, lead, nickel, and zinc for the wastes effluent discharge:

	Discharge Limitations			
	Monthly Average		Daily Maximum	
Constituents	C (µg/L)	Mass[2/] (lbs/day)	C (µg/L)	mass[2/] (lbs/day)
Copper [1/]	633	0.7919	927	1.1597
Lead [1/]	335	0.4191	580	0.7256
Nickel [1/]	17.6	0.0220	20.7	0.0259
Zinc [1/]	232	0.2902	306	0.3828

[1/] Discharge limitations for these metals are based on 67 sampling data and expressed as total recoverable.

[2/] The mass limits for a pollutants is calculated using the following equation:

$$m = 8.34\, C_i Q$$

where: m = mass limit for a pollutant, lbs/day
C_i = concentration limit for a pollutant, mg/L
Q = maximum discharge flow rate =0.15 mgd

From January 25, 2003 to July 24, 2005, Praxair shall comply with the performance-based interim limits listed below for copper, lead, nickel, and zinc for the wastes effluent discharge:

	Discharge Limitations			
	Monthly Average		Daily Maximum	
Constituents	C (µg/L)	Mass[2/] (lbs/day)	C (µg/L)	mass[2/] (lbs/day)
Copper [1/]	431	0.5392	556	0.6956
Lead [1/]	186	0.2327	350	0.4379
Nickel [1/]	17.6	0.0220	20.7	0.0259
Zinc [1/]	232	0.2902	306	0.3828

[1/] Discharge limitations for these metals are based on 64 sampling data and expressed as total recoverable.

[2/] The mass limits for a pollutants is calculated using the following equation:

$$m = 8.34\ C_i Q$$

where: m = mass limit for a pollutant, lbs/day
C_i = concentration limit for a pollutant, mg/L
Q = maximum discharge flow rate =0.15 mgd

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

1. Reasonable Potential Analysis (RPA)

RPA was performed for conventional, non-conventional, and toxic pollutants for which effluent data were available. The input data are based on the effluent data provided in the ROWD and the effluent information in the permit renewal application form. 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. Based on the nature of the business, and as indicated in the ROWD, four inorganic pollutants (copper, lead, nickel, and zinc) are expected to have reasonable potential of exceeding the water quality objectives. Effluent limitations are prescribed for these pollutants in this Order.

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, PAHs, total PCBs, toxaphene, and TCDD equivalents, are neither used or manufactured or known to be associated with cryogenic air-separation facility. Effluent limitations are not prescribed for these pollutants; however, monitoring is required for future evaluation.

Interim monitoring is required for the remaining of toxic pollutants that lack of data.

2. Conventional/Non-conventional Pollutants

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

3. 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.