CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER R5-2013-XXXX
NPDES NO. CAG915001

WASTE DISCHARGE REQUIREMENTS FOR DISCHARGE TO SURFACE WATERS OF GROUNDWATER FROM CLEANUP OF PETROLEUM FUEL POLLUTION

The following Dischargers may apply for coverage under this Order in compliance with the waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Dischargers	Dischargers of treated groundwater from cleanup of petroleum fuel pollution to waters of the United States.
The U.S. Environmental Protection Agency (USEPA) and the Central Valley Regional Water Quality Control Board have classified this discharge as a minor discharge.	

Table 2. Administrative Information

This Order was adopted by the Central Valley Regional Water Quality Control Board on:	
This Order shall become effective on:	
This Order shall expire on:	
Those enrollees who are covered under this Order at the time of expiration will continue to be covered until coverage becomes effective under a reissued Order.	

I, Pamela Creedon, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on X May 2013.

_____
PAMELA C. CREEDON, Executive Officer

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I. DISCHARGE INFORMATION

The presence of petroleum constituents in groundwater at various sites throughout the Central Valley Region of California poses a threat to existing and potential beneficial uses of the groundwater. As responsible parties investigate and remediate these sites, the number of groundwater cleanups of petroleum constituents is increasing. Remediation at many of these sites includes groundwater treatment, with discharge of the treated groundwater. This permit covers the discharge of treated groundwater from cleanups of petroleum constituents to waters of the United States.

II. NOTIFICATION REQUIREMENTS

A. General Order Application

To obtain coverage under this General Order, which also serves as the National Pollutant Discharge Elimination System (NPDES) Permit, the Discharger must submit a complete application, as detailed in Attachment G. Application requirements include USEPA Application Forms 1 and 2D; State Water Board Form 200, including a project map which shows the location of the project, discharge point(s), and receiving water; a project description which includes a full description of the existing or proposed project on official letterhead, a full description of the site hydrology, and a description of the receiving water; reports satisfying the salinity requirements established in Section V.A.4 of this General Order; analysis of the groundwater to be discharged for pollutants listed in Attachment B, Attachment C (if applicable), and any applicable 303(d) listed pollutants for the receiving water if discharging or proposing to discharge to an impaired waterbody; an evaluation of reclamation options; public notice requirements; and the appropriate fee.

B. General Order Coverage

Upon receipt of the application, the Executive Officer shall determine the applicability of this Order to the discharge. If the discharge is deemed eligible for coverage, the Executive Officer shall issue a Notice of Applicability to the Discharger, notifying the Discharger that the discharge is authorized under the terms and conditions of this Order and prescribing appropriate effluent limitations and a monitoring and reporting program. New discharges for which coverage under this General Order has been sought shall not commence until after receiving the Executive Officer's written Notice of Applicability for coverage under this General Order or until an individual NPDES permit is issued by the California Regional Water Quality Control Board, Central Valley Region (hereinafter Central Valley Water Board).

Dischargers currently covered by Order R5-2008-0085 are automatically granted coverage under this Order

C. Eligibility Criteria

1. This General Order covers discharges to surface waters of groundwater from cleanup of petroleum fuel pollution.

2. To be authorized by this General Order, Dischargers must demonstrate that the discharge meets following criteria:

a. Pollutant concentrations in the discharge do not cause, have a reasonable potential to cause, or contribute to an excursion above any applicable federal water quality criterion established by USEPA pursuant to CWA section 303;

b. Pollutant concentrations in the discharge do not cause, have a reasonable potential to cause, or contribute to an excursion above any water quality objective adopted by the Central Valley Water Board or State Water Resources Control Board (State Water Board), including prohibitions of discharge for the receiving waters; and

c. The discharge does not cause acute or chronic toxicity in the receiving water.

3. A representative sample of the groundwater prior to any treatment must be analyzed and compared to the water quality screening levels for the constituents listed in Attachment B and Attachment C (if applicable).

a. If the analytical test results of the groundwater show that the results are below the screening levels in Attachment B and Attachment C (if applicable), then the Discharger will be enrolled under this Order and treatment of the groundwater will be required for petroleum constituents only.

b. If the analytical test results of the discharge show that constituent concentrations exceed the water quality screening levels listed in Attachment B and Attachment C (if applicable), then the Discharger will be enrolled under this Order and treatment of the groundwater will be required for petroleum constituents and the additional constituents.

4. The Discharger shall comply with all the terms and provisions of this General Order.

D. Termination of Coverage

1. Upon completion of treatment and cessation of the discharge, the Discharger shall request, in writing, official termination of coverage under this General Order from the Executive Officer. Upon submission of this request, the Discharger shall no longer be authorized to discharge wastewater covered by this General Order. The Discharger is subject to the terms and conditions of this General Order and is responsible for submitting the annual fee associated with this General Order until the Discharger submits a written request for official termination of coverage.

2. When the Central Valley Water Board issues an individual NPDES permit or Waste Discharge Requirements (WDRs) with more specific requirements is issued to a

Discharger, the applicability of this General Order to that Discharger is automatically terminated on the effective date of the individual permit.

III. FINDINGS

The Central Valley Water Board finds:

A. Background. Dischargers of treated groundwater from cleanup of petroleum fuel pollution to surface waters are currently discharging pursuant to Order R5-2008-0085 and NPDES Permit No. CAG915001. Dischargers of treated groundwater from cleanup of petroleum fuel pollution to surface waters must obtain authorization under this General Order to continue discharge to waters of the United States. To obtain authorization for continued and future discharges to waters of the United States, Dischargers must submit a complete application, as described in Section II, above.

B. Discharge Description.

1. Discharges of groundwater from cleanup of petroleum fuel pollution may be polluted with petroleum constituents (e.g., various hydrocarbons and fuel additives). Depending on the characteristics at the site, additional constituents of concern may be present, such as volatile organic compounds (VOCs), pesticides, inorganic constituents, and other chemical constituents. Treatment of the groundwater for petroleum constituents is required for all discharges authorized by this Order. Further treatment is required in the case of wastewater which is polluted with additional constituents. Discharges that may be covered by this Order include, but are not limited to the following:

a. Treated groundwater which had been polluted with petroleum constituents;

b. Potentially polluted groundwater pumped from beneath a layer of free product in order to establish a cone of depression to aid in the containment and extraction of the free product;

c. Potentially polluted groundwater extracted during short- and long-term pump tests;

d. Potentially polluted well development water; and

e. Potentially polluted purge water prior to well sampling.

These wastewaters may be produced and treated on a continuous or batch basis.

2. Discharges that are not covered by this Order are as follows:

a. Groundwater discharged from a cleanup site with the sole purpose of removing pollutants other than petroleum products (e.g., a cleanup of industrial solvents or pesticides);

b. Treated wastewater discharged (with permission of the owner of the municipal system) to a municipal wastewater collection, treatment, and disposal system which is already covered by WDRs from the Central Valley Water Board;

c. Discharges to ponds, infiltration basins, spray disposal areas, subsurface infiltration, or other methods not involving discharge to surface waters and surface water drainage courses (which are covered by individual WDRs) or by general WDRs for land disposal adopted by the Central Valley Water Board); and

d. Discharges exempt from regulation as specified in section 5.3 of the SIP, including activities conducted to fulfill statutory requirements under the federal Safe Drinking Water Act or the California Health and Safety Code.

C. Legal Authorities. This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges to surface waters of groundwater from cleanup of petroleum fuel pollution. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

Section 122.28 of Title 40 of the *Code of Federal Regulations* (40 CFR 122.28) authorizes USEPA and approved states to issue general permits to regulate a point source category if the sources:

1. Involve the same or substantially similar types of operations;
2. Discharge the same type of waste;
3. Require the same type of effluent limitations or operating conditions;
4. Require similar monitoring; and
5. Are more appropriately regulated under a general permit rather than individual permits.

On 22 September 1989, USEPA granted the State of California, through the State Water Resources Control Board (State Water Board) and the Regional Water Boards, the authority to issue general NPDES permits pursuant to 40 CFR Parts 122 and 123.

D. Background and Rationale for Requirements. The Central Valley Water Board developed the requirements in this Order based on readily available information for several similar discharges and the requirements contained in Order R5-2008-0085. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public

Resources Code sections 21100-21177, except requirements for "new sources"[1] as defined in the Federal Water Pollution Control Act. For any "new source" compliance with CEQA must be achieved before a Notice of Applicability for coverage under this General Permit can be issued for the project.

F. Technology-based Effluent Limitations. Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet.

G. Water Quality-Based Effluent Limitations (WQBELs). Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Central Valley Water Board adopted a Water Quality Control Plan, Fourth Edition (Revised October 2011), for the Sacramento and San Joaquin River Basins and a Water Quality Control Plan, Second Edition (Revised January 2004), for the Tulare Lake Basin (hereinafter Basin Plans) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plans implement State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The typical beneficial uses identified in the Basin Plans include the following: municipal and domestic supply, agricultural irrigation, stock watering, process supply, service supply, hydropower supply, water contact recreation, canoeing and rafting recreation, other non-contact water recreation, warm freshwater

[1] A "new source" is a discharge type for which USEPA has issued New Source Performance Standards. A "new source" does not mean a new discharge.

aquatic habitat, cold freshwater habitat, warm fish migration habitat, cold fish migration habitat, warm and cold spawning habitat, wildlife habitat, navigation, rare, threatened, or endangered species habitat, groundwater recharge, and freshwater replenishment.

The Basin Plans include a list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)*." The Basin Plans also state, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." Dischargers seeking coverage under this General Order whose discharge is to a receiving water that is listed as a WQLS shall analyze the discharge for the applicable listed constituents, the results of which shall be included in the application submission. Applicable effluent limitations for 303(d) listed constituents shall be specified in the Notice of Applicability from the Executive Officer.

I. Bay-Delta Plan. The Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) was adopted in May 1995 by the State Water Board superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999, and revised on 15 March 2000. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project and the State Water Project, and approves a petition to change places of use and purposes of use of the Central Valley Project. The water quality objectives of the Bay-Delta Plan are implemented as part of this Order.

J. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About 40 criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain water quality criteria for priority pollutants.

K. State Implementation Policy. On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 28 2000 with respect to the priority pollutant criteria promulgated for California by USEPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plans. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and

objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

L. Alaska Rule. On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. (40 CRR 131.21; 65 Fed. Reg. 24641 (27 April 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on total petroleum hydrocarbons, toluene, ethylbenzene, xylene, naphthalene, methyl tertiary butyl ether, ethylene dichloride, tertiary butyl alcohol, methanol, di-isopropyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. The WQBELs consist of restrictions on benzene, carcinogenic polyaromatic hydrocarbons (PAHs), ethylene dichloride, ethylene dibromide, and lead. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plans were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [Clean Water] Act*" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

N. Antidegradation Policy. 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plans implement, and incorporate by reference, both the state and federal antidegradation policies. As described in the Fact Sheet (Attachment F), due to the expected low volume discharges regulated under this Order, the impact on existing water quality will be insignificant. If,

however, the Central Valley Water Board, subsequent to review of any application, finds that the impact of a discharge will not be insignificant, then authorization for coverage under this Order will be denied and coverage under an individual permit will be required (including preparation of an anti-degradation analysis). This General Order may allow degradation of the receiving water by salt to provide for the protection or cleanup of groundwater supplies, to the overall benefit of the people of the State.

O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in Order R5-2008-0085.

P. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of waters of the state. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

Q. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), "*In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.*"

The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42. The Central Valley Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the Fact Sheet.

S. Notification of Interested Parties. The Central Valley Water Board has notified interested agencies and persons of its intent to prescribe WDRs for discharges of groundwater from cleanup of petroleum fuel pollution. Details of notification are provided in the Fact Sheet of this Order.

T. Consideration of Public Comment. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to discharges of groundwater from cleanup of petroleum fuel pollution. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED, that Order R5-2008-0085 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

IV. DISCHARGE PROHIBITIONS

A. The discharge of wastes other than those which meet eligibility criteria in Section II.C of this Order is prohibited unless the Discharger obtains coverage under another general or individual Order that regulates the discharge of such wastes.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

C. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the CWC.

D. A discharge in excess of 200,000 gallons per day (GPD) is prohibited.

V. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The Executive Officer shall indicate the applicable effluent limitations in the Notice of Applicability when a Discharger is enrolled under this Order.

A. Effluent Limitations – Applicable to All Discharges to Surface Waters of Groundwater from Cleanup of Petroleum Fuel Pollution

1. Final Effluent Limitations – Petroleum Constituents

Discharges to surface waters of groundwater from cleanup of petroleum fuel pollution shall not contain pollutants in excess of the effluent limitations contained in Table 3 or Table 4, below.

Table 3. Effluent Limitations – Petroleum Constituents

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
Priority Pollutants			
Benzene	µg/L	--	0.35
Ethylbenzene	µg/L	--	0.5
Ethylene Dichloride	µg/L	0.38	0.5
Naphthalene	µg/L	--	5.0
Toluene	µg/L	--	0.5
Non-conventional Pollutants			
Di-isopropyl Ether	µg/L	--	5
Ethylene Dibromide	µg/L	0.05	0.10
Ethyl Tertiary Butyl Ether	µg/L	--	5
Methanol	µg/L	--	20
Methyl Tertiary Butyl Ether	µg/L	--	1.0
Carcinogenic PAHs[1]	µg/L	0.0044	0.0088
Tertiary Amyl Methyl Ether	µg/L	--	1.0
Tertiary Butyl Alcohol	µg/L	--	10
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	--	50
Total Petroleum Hydrocarbons (Diesel Range)	µg/L	--	50
Xylene[2]	µg/L	--	0.5

[1] Applies to the sum of benzo[a]pyrene, benz[a]anthracene, benzo[b]fluroanthene, benzo[j]fluoranthene, benzo[k]fluoranthene, dibenz[a,j]acridine, dibenz[a,h]acridine, dibenz[a,h]anthracene, 7H-dibenzo[c,g]carbazole, dibenzo[a,e]pyrene, dibenzo[a,h]pyrene, dibenzo[a,i]pyrene, dibenzo[a,l]pyrene, indeno[1,2,3-cd]pyrene, 5-methylchrysene, 1-nitropyrene, 4-nitropyrene, 1,6-dinitropyrene, 1,8-dinitropyrene, 6-nitrocrysene, 2-nitrofluorene, and chrysene.

[2] Applies to the sum of o-xylene, m-xylene, and p-xylene.

Effluent limitations contained in the table below for lead are based on hardness, which shall be provided by the Discharger as part of the application.

Table 4. Effluent Limitations – Lead

Parameter	Units	Hardness in mg/L (H)			
		H >47		H ≤47	
		Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
Lead, Total Recoverable	µg/L	--	2	0.40	0.80

2. Final Effluent Limitations – Priority Pollutants

The pollutants subject to effluent limitations, as identified in the Notice of Applicability from the Executive Officer, shall not exceed the respective effluent limitations contained in Table 5 and Table 6, below.

Table 5. Effluent Limitations – Priority Pollutants

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
Antimony, Total Recoverable	µg/L	6	12
Arsenic, Total Recoverable	µg/L	10	20
Beryllium, Total Recoverable	µg/L	4	8
Chromium (VI)	µg/L	8	16
Mercury, Total Recoverable	µg/L	0.05	0.10
Selenium, Total Recoverable	µg/L	4.1	8.2
Thallium, Total Recoverable	µg/L	1.7	3.4
Cyanide, Total (as CN)	µg/L	4.3	8.5
Asbestos	MFL	7	14
2,3,7,8-TCDD	µg/L	1.3E-08	2.6E-08
Acrolein	µg/L	320	642
Acrylonitrile	µg/L	0.059	0.118
Bromoform	µg/L	4.3	8.6
Carbon Tetrachloride	µg/L	0.25	0.50
Chlorobenzene	µg/L	70	140
Chlorodibromomethane	µg/L	0.401	0.804
Chloroethane	µg/L	16	32
Chloroform	µg/L	80	161
Dichlorobromomethane	µg/L	0.56	1.12
1,1-Dichloroethane	µg/L	5	10
1,1-Dichloroethylene	µg/L	0.057	0.114
1,2-Dichloropropane	µg/L	0.52	1.04
1,3-Dichloropropylene	µg/L	0.5	1.0
Methyl Bromide	µg/L	48	96
Methyl Chloride	µg/L	3	6
Methylene Chloride	µg/L	4.7	9.4
1,1,2,2-Tetrachloroethane	µg/L	0.17	0.34
Tetrachloroethylene	µg/L	0.8	1.6
1,2-Trans-Dichloroethylene	µg/L	10	20
1,1,1-Trichloroethane	µg/L	200	401
1,1,2-Trichloroethane	µg/L	0.60	1.20
Trichloroethylene	µg/L	2.7	5.4
Vinyl Chloride	µg/L	0.5	1.0

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
2-Chlorophenol	µg/L	120	241
2,4-Dichlorophenol	µg/L	93	187
2,4-Dimethylphenol	µg/L	540	1,083
2-Methyl-4,6-Dinitrophenol	µg/L	13.4	26.9
2,4-Dinitrophenol	µg/L	70	140
2-Nitrophenol	µg/L	115	230
4-Nitrophenol	µg/L	60	120
3-Methyl-4-Chlorophenol	µg/L	15	30
Pentachlorophenol	µg/L	0.28	0.56
Phenol	µg/L	21,000	42,130
2,4,6-Trichlorophenol	µg/L	2.1	4.2
Acenaphthene	µg/L	1,200	2,407
Anthracene	µg/L	9,600	19,259
Benzidine	µg/L	0.00012	0.00024
Bis(2-Chloroethyl)Ether	µg/L	0.031	0.062
Bis(2-Chloroisopropyl)Ether	µg/L	1,400	2,809
Bis(2-Ethylhexyl)Phthalate	µg/L	1.8	3.6
4-Bromophenyl Phenyl Ether	µg/L	100	200
Butylbenzyl Phthalate	µg/L	3,000	6,019
2-Chloronaphthalene	µg/L	1,700	3,411
1,2-Dichlorobenzene	µg/L	600	1,204
1,3-Dichlorobenzene	µg/L	400	802
1,4-Dichlorobenzene	µg/L	5	10
3,3 Dichlorobenzidine	µg/L	0.04	0.08
Diethyl Phthalate	µg/L	23,000	46,142
Dimethyl Phthalate	µg/L	313,000	627,937
Di-n-Butyl Phthalate	µg/L	2,700	5,417
2,4-Dinitrotoluene	µg/L	0.11	0.22
2,6-Dinitrotoluene	µg/L	0.05	0.10
1,2-Diphenylhydrazine	µg/L	0.040	0.080
Fluoranthene	µg/L	300	602
Fluorene	µg/L	1,300	2,608
Hexachlorobenzene	µg/L	0.00075	0.00150
Hexachlorobutadiene	µg/L	0.44	0.88
Hexachlorocyclopentadiene	µg/L	50	100
Hexachloroethane	µg/L	1.9	3.8
Isophorone	µg/L	8.4	16.9
Nitrobenzene	µg/L	17	34
N-Nitrosodimethylamine	µg/L	0.00069	0.00138
N-Nitrosodi-n-Propylamine	µg/L	0.005	0.010
N-Nitrosodiphenylamine	µg/L	5.0	10.0
Pyrene	µg/L	960	1,926
1,2,4-Trichlorobenzene	µg/L	5	10
Aldrin	µg/L	0.00013	0.00026
alpha-BHC	µg/L	0.0039	0.0078
beta-BHC	µg/L	0.014	0.028
gamma-BHC	µg/L	0.019	0.038
delta-BHC	µg/L	500	1,003
Chlordane	µg/L	0.00057	0.00114
4,4'-DDT	µg/L	0.00059	0.00118
4,4'-DDE (linked to DDT)	µg/L	0.00059	0.00118

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
4,4'-DDD	µg/L	0.00083	0.00167
Dieldrin	µg/L	0.00014	0.00028
alpha-Endosulfan	µg/L	0.046	0.092
beta-Endolsulfan	µg/L	0.046	0.092
Endosulfan Sulfate	µg/L	110	221
Endrin	µg/L	0.029	0.059
Endrin Aldehyde	µg/L	0.76	1.52
Heptachlor	µg/L	0.00021	0.00042
Heptachlor Epoxide	µg/L	0.00010	0.00020
PCBs sum[3]	µg/L	0.00017	0.00034
Toxaphene	µg/L	0.0002	0.0003

[1] This effluent limitation applies to the sum of PCB Aroclors 1242, 1254, 1221, 1232, 1248, 1280, and 1016.

Effluent limitations contained in Table 6 for cadmium, chromium (III), copper, nickel, silver, and zinc are based on hardness, which shall be provided by the Discharger as part of the application. For waters with lowest observed hardness concentrations less than 50 mg/L, effluent limitations shall be based on a hardness value of 25 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 50 mg/L but less than 100 mg/L, effluent limitations shall be based on a hardness value of 75 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 100 mg/L but less than 200 mg/L, effluent limitations shall be based on a hardness value of 150 mg/L. For waters with lowest observed hardness concentration greater than or equal to 200 mg/L, effluent limitations shall be based on a hardness value of 200 mg/L.

Table 6. Effluent Limitations – Hardness-Dependent Metals

Parameter	Units	Hardness in mg/L (H)							
		H <50		50≤ H <100		100≤ H <200		H ≥200	
		Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
Cadmium, Total Recoverable	µg/L	0.5	0.9	1.6	3.2	2.8	5.6	3.5	7.0
Chromium (III)	µg/L	54	109	134	269	236	474	299	600
Copper, Total Recoverable	µg/L	1.9	3.8	5.3	10.7	10.2	20.5	13.4	26.9
Nickel, Total Recoverable	µg/L	13.2	26.5	33.5	67.2	60.2	120.7	76.8	154
Silver, Total Recoverable	µg/L	0.2	0.4	1.2	2.5	4.1	8.2	6.7	13.4
Zinc, Total Recoverable	µg/L	18.5	37.0	46.8	93.9	84.2	168.9	107.5	215.6

3. Final Effluent Limitations – Acute Whole Effluent Toxicity

Survival of aquatic organisms in 96-hour bioassays of undiluted waste for all discharges to surface waters of groundwater from cleanup of petroleum fuel pollution shall be no less than:

a. 70%, minimum for any one bioassay; and
b. 90%, median for any three consecutive bioassays.

4. Final Effluent Limitations – Salinity

The discharger shall submit with the application a report concerning:

a. How the discharge will comply with Receiving Water Limitation VI.A.4 (discharge shall not adversely affect beneficial uses) and any numeric receiving water limitations for salinity prescribed in the Basin Plans, and

b. A Salinity Evaluation and Minimization Plan as described in Special Provision VII.C.3.a by which the Discharger will minimize any increase in effluent salinity as the result of treatment of the wastewater.

B. Effluent Limitations – Applicable to Discharges of Groundwater from Cleanup of Petroleum Fuel Pollution to Specific Waterbodies

1. Final Effluent Limitations – Discharges to the Sacramento River from Keswick Dam to the I Street Bridge at City of Sacramento, American River from Folsom Dam to the Sacramento River, Folsom Lake, and the Sacramento – San Joaquin Delta

The discharge of pollutants subject to effluent limitations, as identified in the Notice of Applicability from the Executive Officer, shall not exceed the effluent limitations contained in Table 7 for all discharges of groundwater from cleanup of petroleum fuel pollution to the Sacramento River from Keswick Dam to the I Street Bridge at City of Sacramento, American River from Folsom Dam to the Sacramento River, Folsom Lake, and the Sacramento-San Joaquin Delta. The effluent limitations contained in Table 7 apply in lieu of those contained in Section V.A.2. above for respective parameters applicable to the discharge.

Table 7. Effluent Limitations – Discharges to the Sacramento River from Keswick Dam to the I Street Bridge at City of Sacramento, American River from Folsom Dam to the Sacramento River, Folsom Lake, and the Sacramento – San Joaquin Delta

Parameter	Units	Maximum Daily
Arsenic, Total Recoverable	mg/L	0.01
Copper, Total Recoverable	mg/L	0.01[1]
Silver, Total Recoverable	mg/L	0.01
Zinc, Total Recoverable	mg/L	0.1[1]

[1] Does not apply to Sacramento River above the State Highway 32 Bridge at Hamilton City.

2. Final Effluent Limitations – Discharges to the Sacramento River and Its Tributaries Above the State Highway 32 Bridge at Hamilton City

The discharge of pollutants subject to effluent limitations, as identified in the Notice of Applicability from the Executive Officer, shall not exceed the effluent limitations contained in Table 8 for all discharges of groundwater from cleanup of petroleum fuel pollution to the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City. Effluent limitations contained in Table 8 for copper, zinc, and cadmium are based on hardness, which shall be provided by the Discharger as part of the application. For waters with lowest observed hardness concentrations less than 50 mg/L, effluent limitations shall be based on a hardness value of 25 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 50 mg/L but less than 100 mg/L, effluent limitations shall be based on a hardness value of 75 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 100 mg/L but less than 200 mg/L, effluent limitations shall be based on a hardness value of 150 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 200 mg/L, effluent limitations shall be based on a hardness value of 200 mg/L. The effluent limitations contained in Table 8 apply in lieu of those contained in Section V.A.2. above for respective parameters applicable to the discharge.

Table 8. Effluent Limitations – Discharges to the Sacramento River and Its Tributaries Above the State Highway 32 Bridge at Hamilton City

Parameter	Units	Hardness in mg/L (H)			
		H <50	50≤ H <100	100≤ H <200	H ≥200
		Maximum Daily	Maximum Daily	Maximum Daily	Maximum Daily
Copper, Total Recoverable	µg/L	3.8	10.0	19.4	25.0
Zinc, Total Recoverable	µg/L	11.0	28.0	49.0	62.0
Cadmium, Total Recoverable	µg/L	0.13	0.49	1.0	1.6

3. Final Effluent Limitations – Discharges to All Waters in the Sacramento and San Joaquin River Basins and Waters Designated as COLD in the Tulare Lake Basin

The discharge of pollutants subject to effluent limitations, as identified in the Notice of Applicability from the Executive Officer, shall not exceed the effluent limitations contained in Table 9 for all discharges of groundwater from cleanup of petroleum fuel pollution to all waters in the Sacramento and San Joaquin River Basins and waters designated as COLD in the Tulare Lake Basin. The effluent limitations contained in Table 9 apply in lieu of those contained in Section V.A.2. above for respective parameters applicable to the discharge.

Table 9. Effluent Limitations – Discharges to All Waters in the Sacramento and San Joaquin River Basins and Waters Designated as COLD in the Tulare Lake Basin

Parameter	Units	Instantaneous Maximum
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	ND[1]

[1] The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.

4. Final Effluent Limitations – Discharges within the Sacramento and San Joaquin River Basins (Except Goose Creek)

The pH of all discharges of groundwater from cleanup of petroleum fuel pollution within the Sacramento and San Joaquin River Basins (except Goose Creek) shall at all times be within the range of 6.5 and 8.5.

5. Final Effluent Limitations – Discharges to Goose Creek

The pH of all discharges of groundwater from cleanup of petroleum fuel pollution to Goose Creek shall at all times be within the range of 7.5 and 9.5.

6. Final Effluent Limitations – Discharges within the Tulare Lake Basin

The pH of all discharges of groundwater from cleanup of petroleum fuel pollution within the Tulare Lake Basin shall at all times be within the range of 6.5 and 8.3.

C. Land Discharge Specifications

[Not Applicable]

D. Reclamation Specifications

[Not Applicable]

VI. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plans for the Sacramento and San Joaquin River Basin and the Tulare Lake Basin and are a required part of this Order. Compliance with any amendment or revision to the water quality objectives contained in the Basin Plans adopted by the Central Valley Water Board subsequent to adoption of this Order is also required. Any discharge authorized for coverage under this General Order shall not cause the following in the receiving water:

1. **Un-ionized Ammonia.** Un-ionized ammonia to be present in amounts that adversely affect beneficial uses nor to be present in excess of 0.025 mg/L (as N) in waterbodies in the Tulare Lake Basin.

2. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

3. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

4. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.

5. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.

6. **Dissolved Oxygen.** For surface waters outside of the Delta for the Sacramento and San Joaquin River Basins and for the Tulare Lake Basin:

   a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
   b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation;
   c. The dissolved oxygen concentration to be reduced below 5.0 for water bodies designated WARM mg/L at any time; nor
   d. The dissolved oxygen concentration to be reduced below 5.0 for water bodies designated WARM mg/L at any time; nor

   Within the legal boundaries of the Delta, the dissolved oxygen concentrations shall not be reduced below: 7.0 mg/L in the Sacramento River (below the I Street Bridge) and in all Delta waters west of the Antioch Bridge; 6.0 mg/L in the San Joaquin River (between Turner Cut and Stockton, 1 September through 30 November); and 5.0 mg/L in all other Delta waters except those bodies of water which are constructed for special purposes and from which fish have been excluded or where the fishery is not important as a beneficial use.

7. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.

8. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

9. **pH.** The pH to be depressed below 6.5 or raised above 8.5 for the Sacramento and San Joaquin River Basins (except Goose Creek). The pH to be depressed below

7.5or raised above 9.5 within Goose Creek. The pH to be depressed below 6.5, raised above 8.3, nor changed by more than 0.3 units for the Tulare Lake Basin.

10. Pesticides:

a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer for the Sacramento and San Joaquin River Basins or prescribed in Standard Methods for the Examination of Water and Wastewater, 18th Edition, or other equivalent methods approved by the Executive Officer for the Tulare Lake Basin;
d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12.) for the Sacramento and San Joaquin River Basins;
e. Pesticide concentrations to exceed the lowest levels technically and economically achievable for the Sacramento and San Joaquin River Basins;
f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in CCR, Title 22, division 4, chapter 15 for the Sacramento and San Joaquin River Basins or specified in Table 64444-A (Organic Chemicals) of section 64444 of Title 22 of the CCR for the Tulare Lake Basin; nor
g. Thiobencarb to be present in excess of 1.0 µg/L for the Sacramento and San Joaquin River Basins.

11. Radioactivity:

a. Radionuclides to be present in concentrations that are harmful or deleterious to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

b. Radionuclides to be present in excess of the maximum contaminant levels specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations.

12. Suspended Sediments. The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

13. Settleable Substances. Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

14. Suspended Material. Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

15. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses or domestic or municipal water supplies.

16. **Temperature.** The natural temperature to be increased by more than 5°F.

17. **Total Dissolved Solids.** The total dissolved solids to exceed 1,000 mg/L.

18. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

19. **Turbidity.** Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

    a. For the Sacramento and San Joaquin River Basins, turbidity:

    i. Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;

    ii. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

    iii. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

    iv. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor

    v. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

    b. For the Tulare Basin and the Sacramento and San Joaquin River Basins, turbidity shall not increase:

    i. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs.

    ii. More than 20 percent where natural turbidity is between 5 and 50 NTUs.

    iii. More than 10 NTU where natural turbidity is between 50 and 100 NTUs.

    iv. More than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

[Not Applicable]

VII. PROVISIONS

A. Standard Provisions

1. All Dischargers authorized to discharge under this General Order shall comply with all Standard Provisions (federal NPDES standard conditions from 40 CFR part 122) included in Attachment D of this Order.

2. All Dischargers authorized to discharge under this General Order shall comply with the following provisions:

a. If a Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.

b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

i. violation of any term or condition contained in this Order;

ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

- *New regulations.* New regulations have been promulgated under section 405(d) of the CWA, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

- *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

- *Change in sludge use or disposal practice.* Under 40 CFR 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Central Valley Water Board may review and revise this Order at any time upon application of any affected person or the Central Valley Water Board's own motion.

c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Central Valley Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

i. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

ii. controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

g. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

h. A copy of this Order and the Notice of Applicability shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

i. Safeguard to electric power failure:

i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

ii. Upon written request by the Central Valley Water Board, the Discharger shall submit a written description of safeguards. Such safeguards may include

alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Central Valley Water Board.

iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.

j. A Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under Central Valley Water Board Standard Provision contained in section VII.A.2.k. of this Order.

The technical report shall:

i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Central Valley Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of the Notice of Applicability, upon notice to the Discharger.

k. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper

application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

l. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, sections 13385, 13386, and 13387.

m. In the event a Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Central Valley Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment D section V.E.1. [40 CFR 122.41(l)(6)(i)].

n. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

o. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

B. Monitoring and Reporting Program Requirements

Each Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order as specified in the Notice of Applicability from the Executive Officer.

C. Special Provisions

1. Reopener Provisions

a. This Order may be reopened for modification, or revocation and reissuance in accordance with the provisions contained in 40 CFR 122.62.

b. Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, including:

i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Chronic Whole Effluent Toxicity. This Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, for compliance with the Basin Plans' narrative toxicity objective, as specified in the Monitoring and Reporting Program (Attachment E section V). If the discharge exhibits a pattern of toxicity exceeding the numeric toxicity monitoring trigger during accelerated monitoring established in this Provision, the Discharger is required to submit a report of waste discharge for application of an individual NPDES permit. This Provision includes procedures for accelerated chronic toxicity monitoring, as discussed below.

i. Numeric Toxicity Monitoring Trigger. The numeric toxicity monitoring trigger to initiate accelerated monitoring is > 1 TU_C (where TU_C = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring.

ii. Accelerated Monitoring Specifications. If the monitoring trigger is exceeded during regular chronic toxicity testing, within 14 days of notification by the laboratory of the test results, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four (4) chronic toxicity tests in a 6-week period (i.e. one test every 2 weeks) using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring:

(a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

(b) If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

(c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and within sixty (60) days, submit a report of waste discharge for application for an individual NPDES permit.

3. Best Management Practices and Pollution Prevention

a. Salinity Evaluation and Minimization Plan. Each Discharger authorized to discharge under this General Order shall prepare and implement a salinity evaluation and minimization plan to address sources of salinity from the Facility prior to the initiation of the discharge. The Salinity Evaluation and Minimization Plan shall be prepared and submitted with the application for coverage, as specified in Section II.A of this General Order.

4. Construction, Operation and Maintenance Specifications

[Not Applicable]

5. Special Provisions for Municipal Facilities (POTWs Only)

[Not Applicable]

6. Other Special Provisions

a. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D section V.B.) and state that the new owner or operator assumes full responsibility for compliance with this Order.

Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

b. Collected screenings, sludges, and other solids removed from liquid wastes or used to treat liquid wastes shall be disposed of in a manner that is consistent with Division 3, Title 27 of the CCR and approved by the Executive Officer.

Any proposed change in solids use or disposal practice shall be reported to the Executive Officer and the USEPA Regional Administrator at least 90 days in advance of the change.

7. Compliance Schedules

[Not Applicable]

VIII. COMPLIANCE DETERMINATION

A. Persistent Chlorinated Hydrocarbon Pesticides Instantaneous Maximum Effluent Limitation. The non-detectable (ND) instantaneous maximum effluent limitation for persistent chlorinated hydrocarbon pesticides applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with the lowest possible detectable level for persistent chlorinated hydrocarbon pesticides with a maximum acceptable detection level of 0.05 µg/L. If the analytical result of a single effluent grab sample is detected for any persistent chlorinated hydrocarbon pesticide, a violation will be flagged and the discharger will be considered out of compliance for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

B. Priority Pollutant Effluent Limitations. Compliance with effluent limitations for priority pollutants shall be determined in accordance with Section 2.4.5 of the SIP, as follows:

1. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

   a. A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or

   b. A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).

3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case

the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall not be deemed out of compliance.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)
Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative
Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic
Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)
CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 1 day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Effluent Concentration Allowance (ECA)
ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in CWC section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters
All surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)

The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (*n*) is odd, then the median = $X_{(n+1)/2}$. If *n* is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the *n*/2 and *n*/2+1).

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR Part 136, Attachment B, revised as of 3 July 1999.

Minimum Level (ML)
ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

Persistent Pollutants
Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollution Prevention
Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Central Valley Water Board.

Reporting Level (RL)
The RL is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the RL depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied in the computation of the RL. Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) in a Central Valley Water Board Basin Plan.

Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

ATTACHMENT B – SCREENING REQUIREMENTS FOR ALL DISCHARGES

I. All Dischargers seeking authorization to discharge under this General Order shall sample and analyze the groundwater to be discharged for the constituents contained in Table B-1. The results of the analysis shall be compared to the corresponding screening level and shall be submitted as part of the application.

Table B-1. Screening Levels for Priority Pollutants

Priority Pollutant[1]	Units	Screening Level (Most Stringent Objective/Criterion)	Most Stringent Objective/Criteria		
			Human Health	Chronic Aquatic Life	Acute Aquatic Life
Antimony, Total Recoverable	µg/L	6	6	--	--
Arsenic, Total Recoverable	µg/L	10	10	150	340
Beryllium, Total Recoverable	µg/L	4	4	--	--
Chromium (VI)	µg/L	11	100	11	16
Mercury, Total Recoverable	µg/L	0.05	0.05	0.77	1.4
Selenium, Total Recoverable	µg/L	5.0	20	5.0	20
Thallium, Total Recoverable	µg/L	1.7	1.7	40	1,400
Cyanide, Total (as CN)	µg/L	5.2	150	5.2	22
Asbestos	MFL	7	7	--	--
2,3,7,8-TCDD (Dioxin)	µg/L	1.3E-08	1.3E-08	0.00001	0.01
Acrolein	µg/L	320	320	--	--
Acrylonitrile	µg/L	0.059	0.059	--	7,550
Bromoform	µg/L	4.3	4.3	--	--
Carbon Tetrachloride	µg/L	0.25	0.25	--	--
Chlorobenzene	µg/L	70	70	--	--
Chlorodibromomethane	µg/L	0.401	0.401	--	--
Chloroethane	µg/L	--	--	--	--
2-Chloroethylvinyl Ether	µg/L	--	--	--	--
Chloroform	µg/L	80	80	1,240	--
Dichlorobromomethane	µg/L	0.56	0.56	--	--
1,1-Dichloroethane	µg/L	5	5	--	--
1,1-Dichloroethylene	µg/L	0.057	0.057	--	--
1,2-Dichloropropane	µg/L	0.52	0.52	5,700	--
1,3-Dichloropropylene	µg/L	0.5	0.5	244	6,060
Methyl Bromide	µg/L	48	48	--	11,000
Methyl Chloride	µg/L	--	--	--	--
Methylene Chloride	µg/L	4.7	4.7	--	--
1,1,2,2-Tetrachloroethane	µg/L	0.17	0.17	2,400	--
Tetrachloroethylene	µg/L	0.8	0.8	840	--
1,2-Trans-Dichloroethylene	µg/L	10	10	--	--
1,1,1-Trichloroethane	µg/L	200	200	--	18,000
1,1,2-Trichloroethane	µg/L	0.60	0.60	9,400	--
Trichloroethylene	µg/L	2.7	2.7	--	45,000
Vinyl Chloride	µg/L	0.5	0.5	--	--
2-Chlorophenol	µg/L	120	120	--	--
2,4-Dichlorophenol	µg/L	93	93	--	--
2,4-Dimethylphenol	µg/L	540	540	--	--
2-Methyl-4,6-Dinitrophenol	µg/L	13.4	13.4	--	230
2,4-Dinitrophenol	µg/L	70	70	--	230
2-Nitrophenol	µg/L	--	--	--	--

Priority Pollutant[1]	Units	Screening Level (Most Stringent Objective/Criterion)	Most Stringent Objective/Criteria		
			Human Health	Chronic Aquatic Life	Acute Aquatic Life
4-Nitrophenol	µg/L	--	--	--	--
3-Methyl-4-Chlorophenol	µg/L	--	--	--	--
Pentachlorophenol	µg/L	0.28	0.28	23	30
Phenol	µg/L	21,000	21,000	--	--
2,4,6-Trichlorophenol	µg/L	2.1	2.1	--	--
Acenaphthene	µg/L	1,200	1,200	--	--
Acenaphthylene	µg/L	--	--	--	--
Anthracene	µg/L	9,600	9,600	--	--
Benzidine	µg/L	0.00012	0.00012	--	2,500
Benzo(ghi)Perylene	µg/L	--	--	--	--
Bis(2-Chloroethoxy)Methane	µg/L	--	--	--	--
Bis(2-Chloroethyl)Ether	µg/L	0.031	0.031	122	238,000
Bis(2-Chloroisopropyl)Ether	µg/L	1,400	1,400	--	--
Bis(2-Ethylhexyl)Phthalate	µg/L	1.8	1.8	--	--
4-Bromophenyl Phenyl Ether	µg/L	--	--	--	--
Butylbenzyl Phthalate	µg/L	3,000	3,000	--	--
2-Chloronaphthalene	µg/L	1,700	1,700	--	--
4-Chlorophenyl Phenyl Ether	µg/L	--	--	--	--
1,2-Dichlorobenzene	µg/L	600	600	763	--
1,3-Dichlorobenzene	µg/L	400	400	763	--
1,4-Dichlorobenzene	µg/L	5	5	763	--
3,3-Dichlorobenzidine	µg/L	0.04	0.04	--	--
Diethyl Phthalate	µg/L	23,000	23,000	--	--
Dimethyl Phthalate	µg/L	313,000	313,000	--	--
Di-n-Butyl Phthalate	µg/L	2,700	2,700	--	--
2,4-Dinitrotoluene	µg/L	0.11	0.11	230	330
2,6-Dinitrotoluene	µg/L	--	--	--	--
Di-n-Octyl Phthalate	µg/L	--	--	--	--
1,2-Diphenylhydrazine	µg/L	0.040	0.040	--	270
Fluoranthene	µg/L	300	300	--	--
Fluorene	µg/L	1,300	1,300	--	--
Hexachlorobenzene	µg/L	0.00075	0.00075	--	250
Hexachlorobutadiene	µg/L	0.44	0.44	9.3	90
Hexachlorocyclopentadiene	µg/L	50	50	--	--
Hexachloroethane	µg/L	1.9	1.9	540	980
Isophorone	µg/L	8.4	8.4	--	117,000
Nitrobenzene	µg/L	17	17	--	27,000
N-Nitrosodimethylamine	µg/L	0.00069	0.00069	--	
N-Nitrosodi-n-Propylamine	µg/L	0.005	0.005	--	5,850
N-Nitrosodiphenylamine	µg/L	5.0	5.0	--	5,850
Phenanthrene	µg/L	--	--	--	--
Pyrene	µg/L	960	960	--	--
1,2,4-Trichlorobenzene	µg/L	5	5	250	50
Aldrin	µg/L	0.00013	0.00013	--	3
alpha-BHC	µg/L	0.0039	0.0039	--	--
beta-BHC	µg/L	0.014	0.014	--	--
gamma-BHC	µg/L	0.019	0.019	0.08	0.95
delta-BHC	µg/L	--	--	--	--
Chlordane	µg/L	0.00057	0.00057	0.0043	2.4
4,4-DDT	µg/L	0.00059	0.00059	0.001	1.1

Priority Pollutant[1]	Units	Screening Level (Most Stringent Objective/Criterion)	Most Stringent Objective/Criteria		
			Human Health	Chronic Aquatic Life	Acute Aquatic Life
4,4-DDE	µg/L	0.00059	0.00059	--	--
4,4-DDD	µg/L	0.00083	0.00083	--	--
Dieldrin	µg/L	0.00014	0.00014	0.056	0.24
alpha-Endosulfan	µg/L	0.056	42	0.056	0.22
beta-Endosulfan	µg/L	0.056	110	0.056	0.22
Endosulfan Sulfate	µg/L	110	110	--	--
Endrin	µg/L	0.036	0.76	0.036	0.086
Endrin Aldehyde	µg/L	0.76	0.76	--	--
Heptachlor	µg/L	0.00021	0.00021	0.0038	0.52
Heptchlor Epoxide	µg/L	0.00010	0.00010	0.0038	0.52
PCBs sum[2]	µg/L	0.00017	0.00017	0.014	--
Toxaphene	µg/L	0.0002	0.00073	0.0002	0.73

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 and in accordance with the General Monitoring Provisions contained in section I of the Monitoring and Reporting Program (Attachment E).
[2] This objective applies to the sum of PCB Aroclors 1242, 1254, 1221, 1232, 1248, 1280, and 1016.

II. All Dischargers seeking authorization to discharge under this General Order shall sample and analyze the groundwater to be discharged for the constituents contained in Table B-2. The results of the analysis shall be compared to the corresponding screening level and shall be submitted as part of the application. The screening levels contained in Table B-2 are based on hardness[1]. For waters with lowest observed hardness concentrations less than 50 mg/L, screening levels shall be based on a hardness value of 25 mg/L. For waters with hardness concentrations greater than or equal to 50 mg/L but less than 100 mg/L, screening levels shall be based on a hardness value of 75 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 100 mg/L but less than 200 mg/L, screening levels shall be based on a hardness value of 150 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 200 mg/L, screening levels shall be based on a hardness value of 200 mg/L.

Table B-2. Screening Levels for Hardness-Dependent Metals

Parameter[1]	Units	Hardness in mg/L (H)			
		H <50	50≤ H <100	100≤ H <200	H ≥200
		Screening Level	Screening Level	Screening Level	Screening Level
Cadmium, Total Recoverable	µg/L	0.83	1.96	3.4	4.24
Chromium (III)	µg/L	67	164	288	365
Copper, Total Recoverable	µg/L	2.85	7.3	13.2	16.9
Nickel, Total Recoverable	µg/L	16.1	40.9	73.5	93.8
Silver, Total Recoverable	µg/L	0.37	2.47	8.15	13.4
Zinc, Total Recoverable	µg/L	37	93.9	168.9	215.6

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 and in accordance with the General Monitoring Provisions contained in section I of the Monitoring and Reporting Program (Attachment E).

[1] All hardness values are in mg/L as $CaCO_3$

ATTACHMENT C – SCREENING REQUIREMENTS FOR DISCHARGES TO SPECIFIC WATERBODIES

I. In addition to the analyses required in Attachment B, dischargers seeking authorization to discharge under this General Order to the Sacramento River from Keswick Dam to the I Street Bridge at the City of Sacramento, American River from Folsom Dam to the Sacramento River, Folsom Lake, or the Sacramento-San Joaquin Delta shall sample and analyze the groundwater to be discharged for the constituents contained in Table C-1. The screening levels contained in Table C-1 for arsenic, copper, silver, and zinc supercede those contained in Attachment B for the same parameters. The results of the analysis shall be compared to the corresponding screening level and shall be submitted as part of the application.

Table C-1. Screening Levels for Discharges to the Sacramento River from Keswick Dam to the I Street Bridge at City of Sacramento, American River from Folsom Dam to the Sacramento River, Folsom Lake, and the Sacramento-San Joaquin Delta

Parameter[1]	Units	Screening Level
Arsenic, Total Recoverable	mg/L	0.01
Copper, Total Recoverable	mg/L	0.01[2]
Silver, Total Recoverable	mg/L	0.01
Zinc, Total Recoverable	mg/L	0.1[2]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 and in accordance with the General Monitoring Provisions contained in section I of the Monitoring and Reporting Program (Attachment E).

[2] Does not apply to Sacramento River above the State Highway 32 Bridge at Hamilton City.

II. In addition to the analyses required in Attachment B, dischargers seeking authorization to discharge under this General Order to the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City shall sample and analyze the groundwater to be discharged for the constituents contained in Table C-2. The screening levels contained in Table C-2 for copper, zinc, and cadmium supercede those contained in Attachment B for the same parameters. The results of the analysis shall be compared to the corresponding screening level and shall be submitted as part of the application. The screening levels contained in Table B-2 are based on hardness. For waters with lowest observed hardness concentrations less than 50 mg/L, screening levels shall be based on a hardness value of 25 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 50 mg/L but less than 100 mg/L, screening levels shall be based on a hardness value of 75 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 100 mg/L but less than 200 mg/L, screening levels shall be based on a hardness value of 150 mg/L. For waters with lowest observed hardness concentrations greater than or equal to 200 mg/L, screening levels shall be based on a hardness value of 200 mg/L.

Table C-2. Screening Levels for Discharges to the Sacramento River and Its Tributaries Above the State Highway 32 Bridge at Hamilton City

Parameter[1]	Units	Hardness in mg/L (H)			
		H <50	50≤ H <100	100≤ H <200	H ≥200
		Screening Level	Screening Level	Screening Level	Screening Level
Copper, Total Recoverable	µg/L	3.8	10.0	19.4	25.0
Zinc, Total Recoverable	µg/L	11.0	28.0	49.0	62.0
Cadmium, Total Recoverable	µg/L	0.13	0.49	1.0	1.6

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 and in accordance with the General Monitoring Provisions contained in section I of the Monitoring and Reporting Program (Attachment E).

III. In addition to the analyses required in Attachment B, dischargers seeking authorization to discharge under this General Order within the Sacramento and San Joaquin River Basins and waters designated COLD in the Tulare Lake Basin shall sample and analyze the groundwater to be discharged for the constituents contained in Table C-3. The screening level contained in Table C-3 for persistent chlorinated hydrocarbon pesticides supercedes those contained in Attachment B for the same parameters. The results of the analysis shall be compared to the corresponding screening level and shall be submitted as part of the application.

Table C-3. Screening Levels for Discharges Within the Sacramento and San Joaquin River Basins and Waters Designated as COLD in the Tulare Lake Basin

Parameter[1]	Units	Screening Level
Persistent Chlorinate Hydrocarbon Pesticides	µg/L	ND[2]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 and in accordance with the General Monitoring Provisions contained in section I of the Monitoring and Reporting Program (Attachment E).

[2] The non-detectable (ND) screening level applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR 122.41(a).)

2. The Discharger shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 CFR 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 CFR 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 CFR 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR 122.41(i); CWC section 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR 122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR 122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location. (40 CFR 122.41(i)(4).)

G. Bypass

1. Definitions

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i).)

b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR 122.41(m)(4)(i)):

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR 122.41(m)(4)(i)(A));

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR 122.41(m)(4)(i)(C).)

4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR 122.41(m)(4)(ii).)

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR 122.41(m)(3)(i).)

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 CFR 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was

caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR 122.41(n)(3)):

a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR 122.41(n)(3)(i));

b. The permitted facility was, at the time, being properly operated (40 CFR 122.41(n)(3)(ii));

c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 CFR 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the CWC. (40 CFR 122.41(l)(3) and 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR 122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order. (40 CFR 122.41(j)(4) and 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 CFR 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 CFR 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 CFR 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 CFR 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 CFR 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 CFR 122.41(j)(3)(v)); and

6. The results of such analyses. (40 CFR 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 CFR 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 CFR 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 CFR 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Central Valley Water Board, State Water Board, or USEPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Central Valley Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, V.B.6, and V.B.7 below. (40 CFR 122.41(k).)

2. For a corporation, all permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 CFR 122.22(a)(1).)

3. For a partnership or sole proprietorship, all permit applications shall be signed by a general partner or the proprietor, respectively. (40 CFR 122.22(a)(2).)

4. For a municipality, State, federal, or other public agency, all permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR 122.22(a)(3).).

5. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or USEPA shall be signed by a person

described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR 122.22(b)(2)); and

c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 CFR 122.22(b)(3).)

6. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR 122.22(c).)

7. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR 122.22(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use

or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 CFR 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 CFR 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR 122.41(l)(6)(ii)):

a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(A).)

b. Any upset that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(B).)

3. The Central Valley Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Central Valley Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b) (40 CFR 122.41(l)(1)(i)); or

2. If the discharge is not an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 CFR 122.42(a), the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR 122.41(l)(1)(ii).)

   The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 CFR 122.41(l)(1)(ii).)

3. If the discharge is an existing manufacturing, commercial, mining, or silvicultural discharge, the alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 CFR 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 CFR 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Central Valley Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, sections 13385, 13386, and 13387

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Central Valley Water Board as soon as they know or have reason to believe (40 CFR 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR 122.42(a)(1)):

a. 100 micrograms per liter (µg/L) (40 CFR 122.42(a)(1)(i));

b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 CFR 122.42(a)(1)(ii));

c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR 122.42(a)(1)(iii)); or

d. The level established by the Central Valley Water Board in accordance with 40 CFR 122.44(f). (40 CFR 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" (40 CFR 122.42(a)(2)):

a. 500 micrograms per liter (µg/L) (40 CFR 122.42(a)(2)(i));

b. 1 milligram per liter (mg/L) for antimony (40 CFR 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR 122.42(a)(2)(iii)); or

d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 CFR 122.42(a)(2)(iv).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (CFR), Part 122.48 (40 CFR 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the Central Valley Regional Water Quality Control Board (Central Valley Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the federal and California regulations. Specific monitoring requirements for constituents with effluent limitations will be specified in the Notice of Applicability.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Central Valley Water Board.

B. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

C. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the Department of Public Health (DPH; formerly the Department of Health Services). In the event a certified laboratory is not available to the Discharger, analyses performed by a non-certified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Central Valley Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Central Valley Water Board.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

F. Laboratories analyzing monitoring samples shall be certified by DPH, in accordance with the provision of CWC section 13176, and must include quality assurance/quality control data with their reports.

G. The Discharger shall file with the Central Valley Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this Monitoring and Reporting Program.

H. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. ~~Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.~~

II. MONITORING LOCATIONS

Each Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Shall be located after the last connection before the wastes enter the treatment process.
001	EFF-001	Shall be located after the last connection through which wastes can be admitted into the outfall.
--	RSW-001	Shall be located in the receiving water approximately 200 feet upstream from the point of discharge or as defined in the Notice of Applicability.
--	RSW-002	Shall be located in the receiving water approximately 200 feet downstream from the point of discharge or as defined in the Notice of Applicability.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. Each Discharger shall monitor the groundwater from cleanup of petroleum fuel pollution at INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Priority Pollutants				
Benzene	µg/L	Grab	1/Month[1]	[2]
Ethylbenzene	µg/L	Grab	1/Month[1]	[2]
Ethylene Dichloride	µg/L	Grab	1/Month[1]	[2]
Lead, Total Recoverable	µg/L	Grab	1/Month[3]	[2]
Naphthalene	µg/L	Grab	1/Month[1]	[2]
Toluene	µg/L	Grab	1/Month[1]	[2]
Non-Conventional Pollutants				
Di-isopropyl ether	µg/L	Grab	1/Month[1]	[2]
Ethanol	µg/L	Grab	1/Month[1]	[2]
Ethyl Tertiary Butyl Ether	µg/L	Grab	1/Month[1]	[2]
Methanol	µg/L	Grab	1/Month[1]	[2]
Methyl Tertiary Butyl Ether	µg/L	Grab	1/Month[1]	[2]
Tertiary Amyl Methyl Ether	µg/L	Grab	1/Month[1]	[2]
Tertiary Butyl Alcohol	µg/L	Grab	1/Month[1]	[2]
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	Grab	1/Month[1]	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Petroleum Hydrocarbons (Diesel Range)	µg/l	Grab	1/Month[1]	[2]
Xylene[4]	µg/L	Grab	1/Month[1]	[2]

[1] If these constituents are not present in any monitoring well or extraction well at the cleanup site, the monitoring well documentation may be submitted in lieu of the influent monitoring for these constituents. Confirmation samples on an annual basis shall be submitted to verify the absence of these chemicals. If three consecutive monthly influent sampling events result in non-detectable concentration, at appropriate detection limits, then the sampling frequency shall be reduced to quarterly. If three consecutive quarterly sampling events results in non-detectable concentration, at appropriate detection limits, then the sampling frequency shall be reduced to annually. If a detectable concentration is determined to be present in the wastewater, the frequency will be monthly.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

[3] If lead is not detected in the first two sampling events, then testing may be discontinued thereafter.

[4] Xylene includes o-xylene, m-xylene, and p-xylene.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. Each Discharger shall monitor the groundwater from cleanup of petroleum fuel pollution at EFF-001 as follows:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	GPD	Estimate	1/Day[1]	[2]
Conventional Pollutants				
pH	standard units	Grab	1/Month	[2]
Priority Pollutants				
Benzene	µg/L	Grab	1/Month[3]	[2,4]
Ethylbenzene	µg/L	Grab	1/Month[3]	[2,4]
Ethylene Dichloride	µg/L	Grab	1/Month[3]	[2,4]
Lead, Total Recoverable	µg/L	Grab	1/Month[5]	[2,4]
Naphthalene	µg/L	Grab	1/Month[3]	[2,4]
Toluene	µg/L	Grab	1/Month[3]	[2,4]
Non-Conventional Pollutants				
Carcinogenic PAHs[6]	µg/L	Grab	1/Month[3]	[2]
Di-isopropyl Ether	µg/L	Grab	1/Month[3]	[2]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	[2]
Ethanol	µg/L	Grab	1/Month[3]	[2]
Ethylene Dibromide	µg/L	Grab	1/Month[3]	[2]
Ethyl Tertiary Butyl Ether	µg/L	Grab	1/Month[3]	[2]
Hardness (as $CaCO_3$)[5]	mg/L	Grab	1/Month	[2]
Methanol	µg/L	Grab	1/Month[3]	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Methyl Tertiary Butyl Ether	µg/L	Grab	1/Month[3]	[2]
Temperature	°F	Grab	1/Month	[2]
Tertiary Amyl Methyl Ether	µg/L	Grab	1/Month[3]	[2]
Tertiary Butyl Alcohol	µg/L	Grab	1/Month[3]	[2]
Total Dissolved Solids	mg/L	Grab	1/Month	[2]
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	Grab	1/Month[3]	[2]
Total Petroleum Hydrocarbons (Diesel Range)	µg/L	Grab	1/Month[3]	[2]
Xylene[6]	µg/L	Grab	1/Month[3]	[2]
Whole Effluent Toxicity (see Section V. below)	--	--	--	--

[1] When discharging to surface water.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
[3] 1) Analysis shall be conducted weekly for 4 consecutive weeks following initial discharge from the treatment system. 2) If any sample shows detectable concentrations, the Discharger shall immediately resample and reanalyze the effluent for the detected constituent(s), and shall continue sampling the effluent on a weekly basis until the constituent(s) concentrations are below permitted levels. 3) If three consecutive monthly sampling events result in non-detectable concentrations, at appropriate detection limits, then the sampling frequency shall be reduced to quarterly. 4) If a detectable concentration is determined to be present in the wastewater the frequency will revert back to monthly. 5) Subsequent to the initial testing required in 1) above, if a constituent is not present in the influent sample, then the testing for that constituent may be discontinued until detected in the influent.
[4] For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.
[5] If lead is not detected in the first two sampling events, then testing may be discontinued thereafter.
[6] Carcinogenic PAHs include: benzo[a]pyrene, benz[a]anthracene, benzo[b]fluroanthene, benzo[j]fluoranthene, benzo[k]fluoranthene, dibenz[a,j]acridine, dibenz[a,h]acridine, dibenz[a,h]anthracene, 7H-dibenzo[c,g]carbazole, dibenzo[a,e]pyrene, dibenzo[a,h]pyrene, dibenzo[a,i]pyrene, dibenzo[a,l]pyrene, indeno[1,2,3-cd]pyrene, 5-methylchrysene, 1-nitropyrene, 4-nitropyrene, 1,6-dinitropyrene, 1,8-dinitropyrene, 6-nitrocrysene, 2-nitrofluorene, and chrysene.
[7] Monitoring shall be performed concurrently with effluent sampling for lead and cadmium, chromium (III), copper, nickel, silver, or zinc if treatment for any of the these pollutants is required.
[8] Xylene includes o-xylene, m-xylene, and p-xylene.

2. Each Discharger shall monitor the groundwater from cleanup of petroleum fuel pollution at EFF-001 for constituents with applicable effluent limitations and/or for constituents which have no applicable water quality criteria but were detected in the groundwater, if treatment is required. The specific constituents to be monitored and monitoring frequencies will be specified in the Notice of Applicability from the Executive Officer.

Table E-4. Effluent Monitoring

Parameter	Units	Sample Type[1,2,3]
Antimony, Total Recoverable	µg/L	Grab
Arsenic, Total Recoverable	µg/L	Grab
Beryllium, Total Recoverable	µg/L	Grab
Cadmium, Total Recoverable	µg/L	Grab
Chromium (III)	µg/L	Grab
Chromium (VI)	µg/L	Grab
Copper, Total Recoverable	µg/L	Grab
Nickel, Total Recoverable	µg/L	Grab
Silver, Total Recoverable	µg/L	Grab
Zinc, Total Recoverable	µg/L	Grab
Mercury, Total Recoverable	µg/L	Grab
Selenium, Total Recoverable	µg/L	Grab
Thallium, Total Recoverable	µg/L	Grab
Cyanide, Total (as CN)	µg/L	Grab
Asbestos	MFL	Grab
2,3,7,8-TCDD	µg/L	Grab
Acrolein	µg/L	Grab
Acrylonitrile	µg/L	Grab
Bromoform	µg/L	Grab
Carbon Tetrachloride	µg/L	Grab
Chlorobenzene	µg/L	Grab
Chlorodibromomethane	µg/L	Grab
Chloroethane	µg/L	Grab
2-Chloroethylvinyl Ether	µg/L	Grab
Chloroform	µg/L	Grab
Dichlorobromomethane	µg/L	Grab
1,1-Dichloroethane	µg/L	Grab
1,1-Dichlorethylene	µg/L	Grab
1,2-Dichloropropane	µg/L	Grab
1,3-Dichloropropylene	µg/L	Grab
Methyl Bromide	µg/L	Grab
Methyl Chloride	µg/L	Grab
Methylene Chloride	µg/L	Grab
1,1,2,2-Tetrachloroethane	µg/L	Grab
Tetrachloroethylene	µg/L	Grab
1,2-Trans-Dichloroethylene	µg/L	Grab
1,1,1-Trichloroethylene	µg/L	Grab
1,1,2-Trichloroethylene	µg/L	Grab
Trichloroethylene	µg/L	Grab
Vinyl Chloride	µg/L	Grab
2-Chlorophenol	µg/L	Grab
2,4-Dichlorophenol	µg/L	Grab
2,4-Dimethylphenol	µg/L	Grab
2-Methyl-4,6-Dinitrophenol	µg/L	Grab

Parameter	Units	Sample Type[1,2,3]
2,4-Dinitrophenol	µg/L	Grab
2-Nitrophenol	µg/L	Grab
4-Nitrophenol	µg/L	Grab
3-Methyl-4-Chlorophenol	µg/L	Grab
Pentachlorophenol	µg/L	Grab
Phenol	µg/L	Grab
2,4,6-Trichlorophenol	µg/L	Grab
Acenaphthene	µg/L	Grab
Acenaphthylene	µg/L	Grab
Anthracene	µg/L	Grab
Benzidine	µg/L	Grab
Benzo(ghi)Perylene	µg/L	Grab
Bis(2-Chloroethoxy)Methane	µg/L	Grab
Bis(2-Chloroisopropyl) Ether	µg/L	Grab
Bis(2-ethylhexyl) Phthalate	µg/L	Grab
4-Bromophenylphenyl Ether	µg/L	Grab
Butylbenzyl Phthalate	µg/L	Grab
2-Chloronaphthalene	µg/L	Grab
4-Chlorophenyl Phenyl Ether		
1,2-Dichlorobenzene	µg/L	Grab
1,3-Dichlorobenzene	µg/L	Grab
1,4-Dichlorobenzene	µg/L	Grab
3,3-Dichlorobenzidine	µg/L	Grab
Diethyl Phthalate	µg/L	Grab
Dimethyl Phthalate	µg/L	Grab
2,4-Dinitrotoluene	µg/L	Grab
2,6-Dinitrotoluene	µg/L	Grab
Di-n-Octyl Phthalate	µg/L	Grab
1,2-Diphenylhydrazine	µg/L	Grab
Fluoranthene	µg/L	Grab
Fluorene	µg/L	Grab
Hexachorobenzene	µg/L	Grab
Hexachlorobutadiene	µg/L	Grab
Hexachlorocyclopentadiene	µg/L	Grab
Hexachloroethane	µg/L	Grab
Isophorone	µg/L	Grab
Nitrobenzene	µg/L	Grab
N-Nitrosodimethylamine	µg/L	Grab
N-Nitrosodi-n-Propylamine	µg/L	Grab
N-Nitrosodiphenylamine	µg/L	Grab
Phenanthrene	µg/L	Grab
Pyrene	µg/L	Grab
1,2,4-Trichlorobenzene	µg/L	Grab
Aldrin	µg/L	Grab
alpha-BHC	µg/L	Grab

Parameter	Units	Sample Type[1,2,3]
beta-BHC	µg/L	Grab
gamma-BHC	µg/L	Grab
delta-BHC	µg/L	Grab
Chlordane	µg/L	Grab
4,4-DDT	µg/L	Grab
4,4-DDE (linked to DDT)	µg/L	Grab
4,4-DDD	µg/L	Grab
Dieldrin	µg/L	Grab
alpha-Endosulfan	µg/L	Grab
beta-Endosulfan	µg/L	Grab
Endosulfan sulfate	µg/L	Grab
Endrin	µg/L	Grab
Endrin Aldehyde	µg/L	Grab
Heptachlor	µg/L	Grab
Heptachlor epoxide	µg/L	Grab
PCBs sum[4]	µg/L	Grab
Toxaphene	µg/L	Grab
Whole Effluent Toxicity (see Section V. below)	--	--

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
[2] For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.
[3] The monitoring frequency will be specified in the Notice of Applicability from the Executive Officer.
[4] Applies to the sum of PCB Aroclors 1242, 1254, 1221, 1232, 1248, 1280, and 1016.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing. Each Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform quarterly acute toxicity testing.

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location EFF-001.

3. *Test Species* – Test species shall be fathead minnows (Pimephales promelas).

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, ammonia, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

5. *Test Failure* – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

B. Chronic Toxicity Testing. Each Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency –* The Discharger shall perform annual three species chronic toxicity testing.

2. *Sample Types* – Effluent samples shall be grab samples ~~24-hour composites~~ and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location EFF-001. If a~~The~~ receiving water control is used it shall be a grab sample obtained from the RSW-001 sampling location, as identified in this Monitoring and Reporting Program.

3. *Sample Volumes* – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. *Test Species* – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

   - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
   - The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
   - The green alga, *Selenastrum capricornutum* (growth test).

   No other species shall be used unless prior approval is provided by the Executive Officer.

5. *Methods* – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002.

6. *Reference Toxicant* – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. *Dilutions/Control* – The chronic toxicity testing shall be performed using 100% effluent and one control. The control shall either be the receiving water or laboratory water. If toxicity is found in any effluent test, the Discharger must conduct accelerated monitoring in accordance with Section VII.C.2.a of the Limitations and Discharge Requirements~~A dilution series is not required if the receiving water is considered ephemeral. If the receiving water is not considered ephemeral, the chronic toxicity testing shall be performed~~ using the dilution series identified in the

table, below. ~~The~~ A receiving water control or laboratory water control may~~shall~~ be used as the diluent ~~(unless the receiving water is toxic)~~.

Table E-5. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	75	50	25	12.5	~~Receiving Water~~	~~Laboratory Water~~
% Effluent	100	75	50	25	12.5	0	~~0~~
% ~~Receiving~~ Control Water	0	25	50	75	87.5	100	~~0~~
~~% Laboratory Water~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~100~~

8. *Test Failure* – The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or

b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in the Special Provision at section VII. 2.a.iii. of the Order.)

C. WET Testing Notification Requirements. The Discharger shall notify the Central Valley Water Board within 24-hours after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

D. WET Testing Reporting Requirements. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. Chronic WET Reporting. Regular chronic toxicity monitoring results shall be reported to the Central Valley Water Board within 30 days following completion of the test, and shall contain, at minimum:

a. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.

b. The statistical methods used to calculate endpoints;

c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

d. The dates of sample collection and initiation of each toxicity test; and

e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or Toxicity Reduction Evaluation (TRE).

2. Acute WET Reporting. Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.

~~**3. TRE Reporting.** Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Workplan.~~

~~**4.**~~**3. Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:

a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

[Not Applicable]

VII. RECLAMATION MONITORING REQUIREMENTS

[Not Applicable]

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Monitoring Location RSW-001 and RSW-002

1. The Discharger shall monitor the receiving water at RSW-001 and RSW-002 as follows:

Table E-6. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	cfs	Estimate	1/Month	[1]
Conventional Pollutants				
pH	standard units	Grab	1/Month	[1]
Non-Conventional Pollutants				
Dissolved Oxygen	mg/L	Grab	1/Month	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	[1]
Hardness (as $CaCO_3$)[2]	mg/L	Grab	1/Month	[1]
Temperature	°F	Grab	1/Month	[1]
Total Dissolved Solids	mg/L	Grab	1/Quarter	[1]
Turbidity	NTU	Grab	1/Month	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
[2] Monitoring shall be performed concurrently with effluent sampling for lead and cadmium, chromium (III), copper, nickel, silver, or zinc if treatment for these pollutants is required.

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-001 and RSW-002. Attention shall be given to the presence or absence of:

a. Floating or suspended matter;
b. Discoloration;
c. Bottom deposits;
d. Aquatic life;
e. Visible films, sheens, or coatings;
f. Fungi, slimes, or objectionable growths; and
g. Potential nuisance conditions.

Notes on receiving water conditions shall be summarized in the monitoring report.

IX. OTHER MONITORING REQUIREMENTS

[Not Applicable]

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. New Dischargers who have received a Notice of Applicability for coverage under this General Order shall inform the Central Valley Water Board 24 hours before the start of the discharge.

2. Before commencing a new discharge, a representative sample of the effluent shall be collected and analyzed for all the constituents listed in Attachment B and

Attachment C (if applicable) of the Order. The test results must meet all applicable discharge limitations of the Order.

3. Authorized Dischargers shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

4. Upon written request of the Central Valley Water Board, a Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

5. A Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.

6. Monitoring frequencies may be adjusted by the Executive Officer to a less frequent basis if a Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.

7. Monitoring reports shall be submitted to the Central Valley Water Board each quarter. If no discharge occurred during the reporting quarter, the monitoring report shall document that there was no discharge.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State Water Board or the Central Valley Water Board may notify authorized Dischargers to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/). Until such notification is given, each Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. Authorized Dischargers shall report in the SMR the results for all monitoring specified in this Monitoring and Reporting Program under sections III through IX. Dischargers shall submit quarterly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If a Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
1/Day	Notice of Applicability effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	1 May 1 August 1 November 1 February
1/Month	First day of calendar month following Notice of Applicability effective date or on Notice of Applicability effective date if that date is first day of the month	First day of calendar month through last day of calendar month	1 May 1 August 1 November 1 February
1/Quarter	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) Notice of Applicability effective date	1 January through 1 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February
1/Year	1 January following (or on) Notice of Applicability effective date	1 January through 31 December	1 February

4. **Reporting Protocols.** Authorized Dischargers shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the reported RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

   For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

   d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, each Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

6. Authorized Dischargers shall submit SMRs in accordance with the following requirements:

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

   b. Each Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

   c. Each Discharger shall also include an evaluation of the groundwater cleanup progress, trends, monitoring well analyses, and plume containment. If this evaluation has already been submitted to the Central Valley Water Board in a separate groundwater monitoring report, then the Discharger may reference the date and title of the most recent report in lieu of including it with the SMR.

   d. If monitoring is done at a frequency less than that specified in the influent and effluent under "monitoring frequency" due to the allowance under the footnotes for influent and effluent monitoring, then justification must be specified in each quarterly report as to the presence or non-presence of that constituent during the last three sampling events. Failure to supply the justification for less frequent sampling, when sampling less frequent than specified in the Monitoring and

Reporting Program, shall result in a determination of non-compliance of this Order.

e. SMRs must be submitted to the Central Valley Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Regional Water Quality Control Board
Central Valley Region
NPDES Compliance and Enforcement Unit
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670-6114

C. Discharge Monitoring Reports (DMRs)

[Not Applicable]

D. Other Reports

[Not Applicable]

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in the Findings in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

I. PERMIT INFORMATION

A. Background

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act) was amended to provide that the discharge of pollutants to waters of the United States from any point source is effectively prohibited unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit.

On 22 September 1989, the United States Environmental Protection Agency (USEPA) granted the State of California, through the State Water Resources Control Board (State Water Board) and the Regional Water Quality Control Boards (Regional Water Boards), the authority to issue general NPDES permits pursuant to 40 Code of Federal Regulations (CFR) Parts 122 and 123.

40 CFR 122.28 provides for issuance of general permits to regulate a category of point sources if the sources involve the same or substantially similar types of operations; discharge the same type of waste; require the same type of effluent limitations or operating conditions; require similar monitoring; and are more appropriately regulated under a general order rather than individual orders.

B. General Criteria

1. This Order serves as a general NPDES Permit for the discharge to surface water of wastewater from the investigation and cleanup of groundwater polluted with petroleum products, such as gasoline, diesel, and heavier fuel oils. Wastewater from a groundwater cleanup may include:

a. Treated groundwater which had been polluted with petroleum constituents;

b. Unpolluted groundwater pumped from beneath a layer of free product in order to establish a cone of depression to aid in the containment and extraction of the free product;

c. Extracted water from short- and long-term pump tests;

d. Well development water; and

e. Purge water prior to well sampling.

2. This Order does not cover the following:

f. Groundwater discharged from a cleanup site with the sole purpose of removing pollutants other than petroleum constituents (e.g., a cleanup of industrial solvents or pesticides);

g. Treated wastewaters discharged (with permission of the owner of the municipal system) to a municipal wastewater collection, treatment, and disposal system which is already covered by WDRs from the Central Valley Water Board;

h. Discharges to ponds, infiltration basins, spray disposal areas, subsurface infiltration, or other methods not involving discharge to surface waters and surface water drainage courses (which are covered by individual WDRs or by general WDRs for land disposal adopted by the Central Valley Water Board); and

i. Discharges exempt from regulation as specified in section 5.3 of the SIP. This includes activities conducted to fulfill statutory requirements under the federal Safe Drinking Water Act or the California Health and Safety Code. Such categorical exceptions include draining water supply reservoirs, canals, and pipelines for maintenance, for draining municipal storm water conveyances for cleaning or maintenance, or for draining water treatment facilities for cleaning or maintenance.

II. NOTIFICATION REQUIREMENTS

A. Dischargers enrolling for coverage under this General Order are required to submit a complete application, as detailed in Attachment G, which includes:

1. A Report of Waste Discharge (RWD) (using USEPA Application Forms 1 and 2D[1] and the State Water Board Form 200).

2. Project Description.

a. A full description on official letterhead of the project including:

i. A description of the event(s) which caused the groundwater pollution;

[1] In accordance with 40 CFR 122.21(a)(1), dischargers covered by a general permit under 40 CFR 122.28 are not subject to the permit application requirements contained at 40 CFR 122.21, which includes the requirement to submit EPA Application Forms 1 and 2D (for new dischargers). However, because these forms provide the information necessary to process applications for coverage under this General Order, and in accordance with the requirements of Order R5-2008-0085, the requirement to submit EPA Application Forms 1 and 2D is retained in this Order.

ii. Narrative and schematic descriptions of the existing or proposed extraction, treatment and disposal systems;

iii. Engineering blueprints of the existing or proposed treatment system to reduce any pollutants to levels that will meet the effluent limitations prior to discharging into surface waters. Plans submitted must be signed by a Registered Engineer or Geologist;

iv. A map showing the location of the facility, plume, extraction well(s), monitoring wells, treatment system, disposal facilities, site boundaries, and the flow path of the proposed discharge to a major river or lake;

v. The anticipated average and maximum flows from the treatment system and the design flow of the treatment and disposal system;

vi. An operation plan describing general operations and maintenance procedures, process controls, and monitoring and pumping rates;

vii. A description of any additives added to the process;

b. A full description of the site hydrology; and

c. A description of the receiving water, including general flow conditions, beneficial uses, aquatic resources, downstream water users, and downstream waterbodies.

3. Salinity Requirements

Dischargers seeking authorization to discharge under this General Order must submit a report concerning how the discharge will comply with Receiving Water Limitation VI.A.4 (discharge shall not adversely affect beneficial uses) and any numeric receiving water limitation for salinity prescribed in the Basin Plans. Discharger shall also submit a Salinity Evaluation and Minimization Plan in accordance with Special Provision VII.C.3.a of this Order.

4. Wastewater Sampling.

Dischargers enrolling under this Order are required to analyze the groundwater to be discharged for constituents regulated under the California Toxics Rule (CTR) and applicable Basin Plans, and other pollutants of concern (listed in Attachment B and Attachment C), and submit the results with the application.

Attachment B and Attachment C contain screening levels that are based on the most restrictive water quality objectives/criteria. The most restrictive criteria are necessary because this Order is intended as a general order and covers discharges of groundwater from cleanup of petroleum fuel pollution to all surface waters in the Central Valley of California. If the analytical test results of the groundwater show that constituent concentrations exceed the water quality screening levels listed in Attachment B and Attachment C (if applicable), then the Discharger will be enrolled under this Order and treatment of the discharge for petroleum constituents and the

additional constituents will be required. The Executive Officer shall indicate the applicable effluent limitations in the Notice of Applicability.

If the analytical test results of the groundwater show that the results are below the screening levels in Attachment B and Attachment C (if applicable), then the Discharger will be enrolled under this Order and additional treatment of the discharge beyond the removal of petroleum constituents will not be required.

Attachment B also includes screening requirements for several parameters which do not have applicable water quality criteria. If the analytical test results of the groundwater show that these parameters are present, then the Discharger will be enrolled under this Order and will be required to conduct additional effluent and downstream receiving water sampling to determine compliance with receiving water limitations.

If a Discharger currently discharges into or proposes to discharge into a water quality limited segment (WQLS), the Discharger must sample the groundwater for the constituents causing the impairment in the receiving water under the current 303(d) List and submit the result with the application. The list of impaired surface waters can be found under the Clean Water Act (CWA), Section 303(d) List at the web site:
http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/impaired_waters_list/2008_2010_usepa_303dlist/20082010_usepa_aprvd_303dlist.pdf . If the analytical data demonstrate that constituent concentrations in the groundwater will contribute to the impairment of the receiving water, treatment of the groundwater for those constituents will be required.

Dischargers shall analyze the groundwater to be discharged for total petroleum hydrocarbons in the gasoline and diesel ranges. If the suspected pollutants contain hydrocarbon fractions outside the range of these analyses, additional or alternative analysis may be required. Discharger shall also analyze the groundwater to be discharged for minerals, including electrical conductivity, total dissolved solids, chloride, sulfate, nitrate, and pH.

5. Evaluation of Reclamation Options.

Pursuant to section 2, Article X, California Constitution, and section 275, of the California Water Code on preventing waste and unreasonable use of waters of the state, the Central Valley Water Board encourages, wherever practicable, water conservation and/or re-use of wastewater. To obtain coverage under this Order, Dischargers are required to evaluate their reclamation options. These options include:

a. Sanitary Sewage System

If all the discharge is accepted by the local municipal wastewater treatment plant (WWTP), then authorization to discharge under an NPDES permit is not needed for the proposed project. Dischargers may submit any denial or restrictive flow

letter from the WWTP as proof that this option is not viable or explain why it is infeasible to connect to the WWTP.

b. Land Disposal

The land disposal option is usually restricted to the dry season (May through October) unless the Discharger can prove that the discharge can be retained on land during the wet season (November through April). All Dischargers must fully explain why land disposal is not a viable option.

c. Underground Injection

This option may be available for Dischargers at cleanup sites that find it is economically infeasible to treat the groundwater prior to discharging into surface waters that may be impacted by constituents that are found in impacted areas (e.g., sites discharging to 303(d) listed receiving waters). Additional information regarding the feasibility of underground injection as a disposal option can be obtained from the USEPA Region 9 Office, Underground Injection Control Unit.

6. Public Notification.

If significant public comments are received during the 15 day public commenting period, the proposed discharge may be considered for an individual permit or for coverage under this General Order at a meeting of the Central Valley Water Board. The public commenting period is generally limited to 15 days upon notice of the Discharger's proposed action. Those actions and public notification procedures are described in the application requirements contained in Attachment G.

7. Current State Water Board Adopted Permit Fees. Information concerning the applicable fees can be found at http://www.waterboards.ca.gov/resources/fees/.

III. DISCHARGE DESCRIPTION

A. Discharge Description

Groundwater from cleanup of petroleum fuel pollution is discharged to surface water at hundreds of sites throughout the Central Valley. Discharges of extracted groundwater polluted with petroleum fuel constituents can cause, or threaten to cause adverse impacts to existing and potential beneficial uses of the surface water if not regulated. Therefore, discharges from these sites and activities will be more efficiently regulated through a general permit rather than an individual permit. This General Order establishes requirements to regulate discharges of groundwater from cleanup of petroleum fuel pollution to surface waters of the United States under the jurisdiction of this Central Valley Water Board.

These waste streams may also be polluted with toxic organic constituents, volatile organic compounds (VOCs), pesticides, inorganic constituents and other chemical

constituents. Where a discharge is polluted with other constituents, additional treatment before discharge will be required.

B. Summary of Existing Requirements

Effluent limitations contained in Order R5-2008-0085 for discharges of groundwater from cleanup of petroleum fuel pollution are as follows:

Table F-1. Historic Effluent Limitations

Parameter	Units	Effluent Limitation	
		30-Day Median	Maximum Daily
Total Petroleum Hydrocarbons (Gasoline and Diesel Ranges)	µg/L	<50	100
Benzene	µg/L	<0.5	0.35
Toluene	µg/L	<0.5	42
Ethylbenzene	µg/L	<0.5	29
Xylenes (Total)	µg/L	<1.0	17
Naphthalene	µg/L	<5.0	20
Carcinogenic PAHs[1]	µg/L	<0.05	<0.05
Methyl Tertiary Butyl Ether plus other ether oxygenates[2]	µg/L	<5.0	5
Ethylene Dichloride	µg/L	<0.5	<0.5
Ethylene Dibromide	µg/L	<0.5	<0.5
Tertiary Butyl Alcohol	µg/L	<20	<20
Methanol	µg/L	<20	3,500
Lead[3]	µg/L	2	2
pH	standard units	--	[4]
Acute Toxicity	% Survival	--	[5]

1 Polynuclear Aromatic Hydrocarbons; the sum of benzo[a]pyrene, benz[a]anthracene, benzo[b]fluoranthene, benzo[j]fluoranthene, benzo[k]fluroanthene, dibenz[a,j]acridine, dibenz[a,h]acridine, dibenz[a,h]anthracene, 7H-dibenzo[c,g]carbazole, dibenzo[a,e]pyrene, dibenzo[a,h]pyrene, dibenzo[a,i]pyrene, dibenzo[a,l]pyrene, indeno[1,2,3-c,d]pyrene, 5-methylchrysene, 1-nitropyrene, 4-nitropyrene, 1,6-dinitropyrene, 1,8-dinitropyrene, 6-nitrocrysene, 2-nitrofluorene, and chrysene.

2 The limitation applies to the sum of methyl tertiary butyl ether, di-isopropyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether.

3 For discharge to water bodies with a hardness less than 80 mg/L, the maximum effluent limitation is established in accordance with the following formula: 1.46203 – [(ln {hardness})(0.145712)].

4 The discharge shall not have a pH of less than 6.5 nor greater than 8.5.

5 Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
Minimum for any one bioassay ---------- 70%
Median for any three or more consecutive bioassays----- 90%

IV. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in the Findings in section II of this Order. This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (CWC; commencing with section 13370). It shall serve as a NPDES permit for point source discharges of groundwater from cleanup of petroleum fuel pollution to surface waters. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under CWC section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 through 21177.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Central Valley Regional Water Quality Control Board adopted a *Water Quality Control Plan, Fourth Edition (Revised October 2011),* for the Sacramento and San Joaquin River Basins and a *Water Quality Control Plan, Second Edition (Revised January 2004),* for the Tulare Lake Basin (hereinafter Basin Plans) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plans implement State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plans identify typical beneficial uses as follows: municipal and domestic supply, agricultural irrigation, stock watering, process supply, service supply, hydropower supply, water contact recreation, canoeing and rafting recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater habitat, warm fish migration habitat, cold fish migration habitat, warm and cold spawning habitat, wildlife habitat, navigation, rare, threatened, or endangered species habitat, groundwater recharge, and freshwater replenishment.

   Requirements of this Order implement the Basin Plans.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About 40 criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain water quality criteria for priority pollutants.

3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP).

The SIP became effective on 28 April 2000 with respect to the priority pollutant criteria promulgated for California by USEPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plans. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Alaska Rule.** On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes (40 CFR 131.21, 65 Fed. Reg. 24641 (27 April 2000)). Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000, may be used for CWA purposes, whether or not approved by USEPA.

5. **Antidegradation Policy.** 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plans implement, and incorporate by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 CFR 131.12 and Resolution No. 68-16. As discussed in detail in the Fact Sheet (Attachment F, Section V.D.4.) the discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16.

6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Compliance with the anti-backsliding requirements is discussed in Section V.D.3.

7. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

D. Impaired Water Bodies on CWA 303(d) List

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 30 November 2006 USEPA gave final approval to California's 2006 section 303(d) List of Water Quality Limited Segments. The Basin Plans reference this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources* (40 CFR Part 130, et seq.)." The Basin Plans also state, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." Impaired waters do not support beneficial uses. If proposing to discharge into impaired surface waters, the Discharger must provide wastewater analysis of the 303(d) listed constituents of concern as part of the application.

E. Other Plans, Polices and Regulations

1. The *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan). The requirements within this Order are consistent with the Bay-Delta Plan.

V. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 CFR 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality*." Federal regulations, 40 CFR 122.44(d)(1)(vi), further provide that "[w]*here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits*."

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plans at page IV-17.00 for the Sacramento and San Joaquin River Basins and at page IV-21 for the Tulare Lake Basin, contain an implementation policy, "*Policy for Application of Water Quality Objectives*" for the Sacramento and San Joaquin River Basins and "*Application of Water Quality Objectives*" for the Tulare Lake Basin, that specify that the Central Valley Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives*." This Policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including (1) USEPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "*Policy for Application of Water Quality Objectives*")(40 CFR 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter. The Basin Plans contains a narrative objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*" (narrative toxicity objective). The Basin Plans require the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The Basin Plans state that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plans also limit chemical constituents in concentrations that adversely affect surface water beneficial uses. The Basin Plans further state that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs.

A. Discharge Prohibitions

1. As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 CFR 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 CFR 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Central Valley Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

2. The flow of wastewater from the groundwater treatment systems to be covered by this Order is generally less than 150 gallons per minute (216,000 gallons per day or

GPD). For the purposes of this Order, discharges less than 200,000 GPD will be considered low volume discharges. Consistent with Order R5-2008-0085, this Order prohibits discharges in excess of 200,000 GPD. Discharges greater than this volume will be more appropriately regulated by an individual order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the “cost reasonableness” of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. CWA section 402(a)(1) and 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the permit writer must consider specific factors outlined in 40 CFR 125.3.

2. Applicable Technology-Based Effluent Limitations

a. The primary constituents of concern with petroleum products are total petroleum hydrocarbons in the gasoline, diesel, and heavier ranges, and may include jet fuel, motor oil, kerosene, and other fuel oils; benzene; toluene; ethylbenzene; xylene; and methyl tertiary butyl ether. In addition, other oxygenates and additives such as methanol, tertiary butyl alcohol, di-isopropyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether may also be found in groundwater from cleanup of petroleum fuel pollution. Existing wastewater treatment technology, primarily utilizing air stripping and/or activated carbon, is capable of dependably removing these constituents to concentrations that are generally non-detectable by current analytical technology.

Order R5-2008-0085 established technology-based effluent limitations for a number of pollutants based on the analytical capability at that time (as represented by the analytical method reporting level). This Order also establishes technology-based effluent limitations based on the current reporting levels for the pollutants of concern. The current, commonly achieved reporting levels are summarized in the table below.

Table F-2. Reporting Levels for Petroleum Constituents

Constituent	Reporting Level	Units	Analytical Method
Benzene	0.5	µg/L	EPA Method 8021B or 8260B
Di-isopropyl Ether	5.0	µg/L	EPA Method 8260B
Ethylbenzene	0.5	µg/L	EPA Method 8021B or 8260B
Ethylene Dibromide	0.5	µg/L	EPA Method 8021B or 8260B
Ethylene Dichloride	0.5	µg/L	EPA Method 8021B or 8260B
Ethyl Tertiary Butyl Ether	5.0	µg/L	EPA Method 8260B
Methanol	20	µg/L	EPA Method 8260B
Methyl Tertiary Butyl Ether	1.0	µg/L	EPA Method 8021B or 8260B
Naphthalene	5.0	µg/L	EPA Method 8260B
Tertiary Amyl Methyl Ether	1.0	µg/L	EPA Method 8260B
Tertiary Butyl Alcohol	10	µg/L	EPA Method 8260B
Toluene	0.5	µg/L	EPA Method 8021B or 8260B
Total Petroleum Hydrocarbons (Gasoline Range)	50	µg/L	EPA Method 8015/5030
Total Petroleum Hydrocarbons (Diesel Range)	50	µg/L	EPA Method 8015/5030
Xylene[1]	0.5	µg/L	EPA Method 8021B or 8260B

[1] Applies to the sum of o-xylene, m-xylene, and p-xylene.

The current reporting level for xylene (0.5 µg/L) and tertiary butyl alcohol (10 µg/L) is lower than the reporting level used to establish the technology-based effluent limitation in Order R5-2008-0085 (1.0 µg/L and 20 µg/L, respectively). Therefore, the technology-based effluent limitations for xylene and tertiary butyl alcohol will be revised to reflect the current, commonly achieved reporting levels.

The current reporting levels for benzene, ethylbenzene, ethylene dibromide, ethylene dichloride, methanol, naphthalene, toluene, and total petroleum

hydrocarbons (gasoline and diesel ranges) are the same as those used to establish technology-based effluent limitations in Order R5-2008-0085 and are used as the basis for the technology-based effluent limitations for these constituents in this Order.

Order R5-2008-0085 established a technology-based effluent limitation of <5.0 µg/L as a 30-day median for the sum of methyl tertiary butyl ether, di-isopropyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether. This effluent limitation was based on the ability of treatment systems to remove each of these constituents below a reporting level of 5.0 µg/L. Because current reporting levels for each of these constituents differ, and the resulting effluent limitations will be more stringent if applied individually, this Order applies individual effluent limitations for methyl tertiary butyl ether, di-isopropyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether based on their respective current, commonly achieved reporting levels. The current, commonly achieved reporting level for methyl tertiary butyl ether and tertiary amyl methyl ether is 1.0 µg/L. Therefore, technology-based effluent limitations for methyl tertiary butyl ether and tertiary amyl methyl ether will be revised to reflect the current, commonly achieved reporting level (1.0 µg/L). The current reporting level for di-isopropyl ether and ethyl tertiary butyl ether is the same as that used to set technology-based effluent limitations in Order R5-2008-0085 (5.0 µg/L) and is the basis for the technology-based effluent limitations for these constituents in this Order.

Order R5-2008-0085 established technology-based effluent limitations for these constituents as 30-day medians. Consistent with 40 CFR 122.45(d) and recently adopted Orders by the Central Valley Water Board, 30-day median effluent limitations will be revised to maximum daily effluent limitations and the less than value (i.e., <) will be removed.

Summary of Technology-based Effluent Limitations
Discharge Point No. 001

Table F-3. Summary of Technology-based Effluent Limitations

Parameter	Units	Maximum Daily Effluent Limitation
Benzene	µg/L	0.5
Di-isopropyl Ether	µg/L	5.0
Ethylbenzene	µg/L	0.5
Ethylene Dibromide	µg/L	0.5
Ethylene Dichloride	µg/L	0.5
Ethyl Tertiary Butyl Ether	µg/L	5.0
Methanol	µg/L	20
Methyl Tertiary Butyl Ether	µg/L	1.0
Naphthalene	µg/L	5.0
Tertiary Amyl Methyl Ether	µg/L	1.0
Tertiary Butyl Alcohol	µg/L	10
Toluene	µg/L	0.5
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	50
Total Petroleum Hydrocarbons (Diesel Range)	µg/L	50
Xylene[1]	µg/L	0.5

[1] Applies to the sum of o-xylene, m-xylene, and p-xylene.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plans, and achieve applicable water quality objectives and

criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Receiving Water. The discharges of groundwater from cleanup of petroleum fuel pollution may potentially discharge to all surface waters in the Central Valley. Beneficial uses for the Sacramento and San Joaquin River Basins are as follows: municipal and domestic supply, agricultural irrigation, stock watering, process supply, service supply, and hydropower supply, water contact recreation, canoeing and rafting recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm and cold spawning habitat, wildlife habitat, and navigation. Beneficial uses for the Tulare Lake Basin are: municipal and domestic supply, agricultural irrigation, agricultural stock watering, industrial process water supply, process water supply, hydropower supply, water contact recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, wildlife habitat, rare, threatened, or endangered species habitat, cold spawning habitat, groundwater recharge, and freshwater replenishment.

b. Hardness. While no effluent limitation for hardness is necessary in this Order, hardness is critical to the assessment of the need for, and the development of, effluent limitations for certain metals. The *California Toxics Rule*, at (c)(4), states the following:

"Application of metals criteria. (i) *For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, for waters with a hardness of 400 mg/L or less as calcium carbonate, the actual ambient hardness of the surface water* <u>*shall*</u> *be used in those equations.*" [emphasis added]

The State Water Board, in footnote 19 to Water Quality Order No. 2004-0013, stated: "*We note that…the Regional Water Board…applied a variable hardness value whereby effluent limitations will vary depending on the actual, current hardness values in the receiving water. We recommend that the Regional Water Board establish either fixed or seasonal effluent limitations for metals, as provided in the SIP, rather than 'floating' effluent limitations*."

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. Dependent on receiving water conditions, use of either the lowest observed effluent hardness or the lowest observed receiving water hardness may be more protective of aquatic life beneficial uses. For example,

under effluent dominated discharge conditions, use of the lowest observed effluent hardness is the most protective.

This permit includes effluent limitations for cadmium, chromium (III), copper, lead, nickel, silver, and zinc which are dependent on water hardness. The CTR expresses the objectives for these metals through equations where the hardness of the receiving water is a variable. To simplify the permitting process under this General Order, it was necessary that fixed hardness values be used in these equations.

As discussed in section V.C.3.d.i.(e) of this Fact Sheet, for waters with hardness concentrations less than or equal to 47 mg/L, the most stringent effluent limitations for lead are based on hardness-based aquatic life criteria. For waters with hardness concentrations greater than 47 mg/L, the most stringent effluent limitations for lead are based on human health criteria, which are not dependent on hardness. Therefore, to calculate effluent limitations for lead for waters with hardness concentrations less than or equal to 47 mg/L, a hardness value of 23 mg/L was used (roughly representing the median value of the range from 0 mg/L to 47 mg/L).

Regardless of hardness, the most stringent effluent limitations for cadmium, chromium (III), copper, nickel, silver, and zinc are based on hardness-dependent aquatic life criteria. Therefore, to calculate effluent limitations for these parameters for waters with hardness concentrations less than 50 mg/L, a hardness value of 25 mg/L was used. To calculate effluent limitations for waters with hardness concentrations greater than or equal to 50 mg/L but less than 100 mg/L, a hardness value of 75 mg/L was used. To calculate effluent limitations for waters with hardness concentrations greater than or equal to 100 mg/L but less than 200 mg/L, a hardness value of 150 mg/L was used, and to calculate effluent limitations for waters with hardness concentrations greater than or equal to 200 mg/L, a hardness value of 200 mg/L was used.

The Order requires the Discharger to analyze the groundwater to be discharged and receiving water for hardness. The Discharger shall submit the analytical results with the application and propose an appropriate hardness concentration based on the analytical results and site-specific receiving water conditions. Upon approval by the Executive Officer, this hardness value will be used to determine the appropriate effluent limitation from the table of limits (see Table 4, Table 6, and Table 8) in the Order.

c. **Assimilative Capacity/Mixing Zone.** The effluent limitations for discharges of groundwater from cleanup of petroleum fuel pollution are calculated assuming no dilution. For most practical purposes, discharges from these operations do not flow directly into a receiving water with significant volume to consider dilution credit or to allocate a mixing zone. Many creeks and streams in the Central Valley are dry during the summer months. Therefore, for many months of the year, these discharges may represent all or nearly all of the flow in some portions of the receiving creeks or streams. Because this Order is intended to serve as a

general NPDES order and covers discharges to all surface waters in the Central Valley, the effluent limitations established pursuant to this General Order are established to achieve the most protective water quality objective for the surface water beneficial uses in the Central Valley. Therefore, it is assumed there is no assimilative capacity and no dilution credits have been granted.

An exception to this assumption may be applied based on the demonstration of a mixing zone in accordance with section 1.4.2 of the SIP and an approved mixing zone study demonstrating compliance with water quality objectives in the receiving water as prescribed in the Basin Plans. This exception process is more appropriate for an individual Order, and would not be appropriate for a general order, that should be protective of most stringent water quality objectives and beneficial uses. If a Discharger requests that a dilution credit be included in the computation of an effluent limitation or that a mixing zone be allowed, an individual order will be required. However, if no mixing zone is proposed, this General Order provides coverage for all discharges to receiving waters in the Central Valley Region.

3. Determining the Need for WQBELs

a. CWA section 301 (b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include Central Valley Water Board Basin Plan beneficial uses and narrative and numeric water quality objectives, State Water Board-adopted standards, and federal standards, including the CTR and NTR. The Basin Plans include numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." With regards to the narrative chemical constituents objective, the Basin Plans state that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)" in Title 22 of CCR.* The narrative tastes and odors objective states: *"Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses*."

b. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard.

c. This Order requires Dischargers seeking authorization to discharge under this General Order to provide analysis of the groundwater to be discharged. As

described below, based on these analyses, the Central Valley Water Board will conduct an RPA in accordance with section 1.3, Step 7 of the SIP by comparing the results to the screening criteria contained in Attachment B and Attachment C (if applicable) to determine reasonable potential. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Central Valley Water Board may use the SIP as guidance for water quality-based toxics control.[1] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency*." Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents.

d. All Discharges to Surface Waters of Groundwater from Cleanup of Petroleum Fuel Pollution

i. Petroleum Constituents

Discharges of groundwater from cleanup of petroleum fuel pollution contain petroleum products. Due to the potential for petroleum products to be discharged, any discharge of groundwater from cleanup of petroleum fuel pollution has a reasonable potential to cause or contribute to an in-stream excursion above water quality objectives. In order to protect the receiving water when discharging groundwater from cleanup of petroleum fuel pollution, this Order contains effluent limitations for benzene, ethylbenzene, ethylene dibromide, ethylene dichloride, lead, methanol, methyl tertiary butyl ether, naphthalene, carcinogenic PAHs, toluene, total petroleum hydrocarbons, and xylene. These effluent limitations are applicable to all discharges of groundwater from cleanup of petroleum fuel pollution and shall apply in addition to effluent limitations established due to exceedances of the screening levels in Attachment B and Attachment C (if applicable).

(a) Benzene. The Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) developed a Cancer Potency Factor as a Drinking Water Level for benzene of 0.35 µg/L. Order R5-2008-0085 established effluent limitations for benzene at 0.35 µg/L as a daily maximum based on the cancer potency factor. This effluent limitation is retained in this Order and will ensure compliance with all applicable water quality standards for benzene.

(b) Ethylbenzene. USEPA has developed a Drinking Water Contaminant Fact Sheet which includes a taste and odor threshold for ethylbenzene of 29 µg/L. Order R5-2008-0085 established an effluent limitation for ethylbenzene at 29 µg/L as a daily maximum based on the taste and odor threshold. As discussed further in section V.D.5 of this Fact Sheet, WQBELs are not included in this Order for ethylbenzene because the

[1] See Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City).

applicable technology-based effluent limitation is more stringent and is protective of all water quality standards.

(c) Ethylene Dibromide. The California Primary MCL for ethylene dibromide is 0.05 µg/L. An AMEL and an MDEL of 0.05 µg/L and 0.10 µg/L, respectively, have been established in this Order for ethylene dibromide based on the protection of the Basin Plans' narrative chemical constituents objective.

(d) Ethylene Dichloride. The CTR includes a criterion for ethylene dichloride of 0.38 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed. An AMEL and an MDEL for ethylene dichloride of 0.38 µg/L and 0.76 µg/L, respectively, are applicable to the discharge. However, as discussed further in section V.D.5 of this Fact Sheet, the technology-based effluent limitation of 0.5 µg/L as an MDEL is more stringent than the water quality-based MDEL and is the basis for the final MDEL for ethylene dichloride in this Order.

(e) Lead. For waters with hardness concentrations less than or equal to 47 mg/L, effluent limitations are based on the hardness-dependent standards for the protection of aquatic life from the CTR. The CTR standards for metals are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for lead in freshwater are 1.46203-[0.145712 X ln(hardness)] for both the acute and the chronic criteria. As discussed in section V.C.2.b of this Fact Sheet, in lieu of floating effluent limitations, a fixed hardness value was used to develop effluent limitations for lead. For waters with hardness concentrations less than or equal to 47 mg/L, effluent limitations will be based on a hardness value of 23 mg/L. An AMEL and MDEL for total lead of 0.40 µg/L and 0.80 µg/L, respectively, are included in this Order for waters with a hardness concentration less than or equal to 47 mg/L.

(f) Methanol. The USEPA Integrated Risk Information System (IRIS) Reference Dose as a Drinking Water Level for methanol is 3,500 µg/L. As discussed further in section V.D.5 of this Fact Sheet, WQBELs are not included in this Order for methanol because the applicable technology-based effluent limitation is more stringent and is protective of all water quality standards.

(g) Methyl Tertiary Butyl Ether. The Secondary MCL-Consumer Acceptance Limit for methyl tertiary butyl ether is 5 µg/L. As discussed further in section V.D.5 of this Fact Sheet, WQBELs are not included in this Order for methyl tertiary butyl ether because the applicable technology-based effluent limitation is more stringent and is protective of all water quality standards.

(h) Naphthalene. USEPA has developed a Drinking Water Health Advisory based on a one-in-a-million incremental cancer risk estimate for naphthalene of 20 µg/L. As discussed further in section V.D.5 of this Fact Sheet, WQBELs are not included in this Order for naphthalene because the applicable technology-based effluent limitation is more stringent and is protective of all water quality standards.

(i) Polynuclear Aromatic Hydrocarbons. USEPA has developed Ambient Water Quality Criteria for carcinogenic polynuclear aromatic hydrocarbons (PAHs) based on a one-in-a-million cancer risk estimate for sources of drinking water at 0.0044 µg/L. An AMEL and an MDEL of 0.0044 µg/L and 0.0088 µg/L, respectively, have been established in this Order for carcinogenic PAHs based on the protection of human health.

(j) Toluene. USEPA has developed a Drinking Water Contaminant Fact Sheet which includes a taste and odor threshold for toluene of 42 µg/L. As discussed further in section V.D.5 of this Fact Sheet, WQBELs are not included in this Order for toluene because the applicable technology-based effluent limitation is more stringent and is protective of all water quality standards.

(k) Total Petroleum Hydrocarbons (Gasoline and Diesel Ranges). The USEPA Suggested-No-Adverse-Response-Level (SNARL) for diesel oil is 100 µg/L. As discussed further in section V.D.5 of this Fact Sheet, WQBELs are not included in this Order for total petroleum hydrocarbons because the applicable technology-based effluent limitation is more stringent and is protective of all water quality standards.

(l) Xylene. USEPA has developed a Drinking Water Contaminant Fact Sheet which includes a taste and odor threshold for xylene at 17 µg/L. As discussed further in section V.D.5 of this Fact Sheet, WQBELs are not included in this Order for xylene because the applicable technology-based limit is more stringent and is protective of all water quality standards.

Table F-4. Summary of WQBELs for Petroleum Constituents

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
Benzene	µg/L	--	0.35
Ethylbenzene	µg/L	--	29
Ethylene Dibromide	µg/L	0.05	0.10
Ethylene Dichloride	µg/L	0.38	0.76
Methanol	µg/L	--	3,500
Methyl Tertiary Butyl Ether	µg/L	--	5.0
Naphthalene	µg/L	--	20
Carcinogenic Polynuclear Aromatic Hydrocarbons[1]	µg/L	0.0044	0.0088
Toluene	µg/L	--	42
Total Petroleum Hydrocarbons (Gasoline and Diesel Ranges)	µg/L	--	100

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
Xylene[2]	µg/L	--	17

[1] Applies to the sum of benzo[a]pyrene, benz[a]anthracene, benzo[b]fluroanthene, benzo[j]fluoranthene, benzo[k]fluoranthene, dibenz[a,j]acridine, dibenz[a,h]acridine, dibenz[a,h]anthracene, 7H-dibenzo[c,g]carbazole, dibenzo[a,e]pyrene, dibenzo[a,h]pyrene, dibenzo[a,i]pyrene, dibenzo[a,l]pyrene, indeno[1,2,3-cd]pyrene, 5-methylchrysene, 1-nitropyrene, 4-nitropyrene, 1,6-dinitropyrene, 1,8-dinitropyrene, 6-nitrocrysene, 2-nitrofluorene, and chrysene.

[2] Applies to the sum of o-xylene, m-xylene, and p-xylene.

Table F-5. Summary of WQBELs for Lead

Parameter	Units	Hardness in mg/L (H)			
		H >47		H ≤47	
		Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
Lead, Total Recoverable	µg/L	--	2	0.40	0.80

ii. Priority Pollutants

Effluent limitations must be established for discharges that have the reasonable potential to exceed water quality standards. Since this is a general order for all discharges of groundwater from cleanup of petroleum fuel pollution to surface waters in the Central Valley of California, generic effluent limitations must be established that are protective of beneficial uses under all discharge conditions. Therefore, screening levels are established in Attachment B and are based on the most protective water quality criteria. The Discharger is required to analyze a representative sample of the groundwater to be discharged. If the analytical data demonstrate that constituent concentrations in the discharge exceed the water quality screening levels listed in Attachment B, the respective effluent limitations, as calculated in section V.C.4 below, shall be applicable to the discharge, as specified in the Notice of Applicability from the Executive Officer. The applicable effluent limitations shall apply in addition to the effluent limitations established for petroleum constituents for all discharges of groundwater from cleanup of petroleum fuel pollution.

Several priority pollutants do not have applicable CTR criteria or MCLs. However, water quality limits have been developed to interpret narrative Basin Plan objectives for several of these pollutants which include chloroethane, methyl chloride, 2-nitrophenol, 4-nitrophenol, 3-methyl-4-chlorophenol, 4-bromophenyl phenyl ether, 2,6-dinitrotoluene, naphthalene, and delta-BHC. Analysis of dilution, proximity of downstream diversions, and other factors is required in order to determine the applicability of interpreting the narrative objective for these pollutants based on water quality limits. This type of analysis is beyond the scope of this General Order. In addition to these pollutants, several priority pollutants have no CTR criteria, MCLs, or alternative water quality limits to interpret narrative Basin Plan objectives. These pollutants include 2-chloroethylvinyl ether, acenaphthylene,

benzo(ghi)perylene, bis(2-chloroethoxy)methane, 4-chlorophenyl phenyl ether, di-n-octyl phthalate, and pheneanthrene. A screening requirement for pollutants that do not have applicable water quality criteria is included in Attachment B. If detectable concentrations of these pollutants are present in the groundwater, additional effluent and ambient receiving water monitoring will be established, as specified in the Notice of Applicability from the Executive Officer. The additional monitoring will be used to determine if the discharge is adversely impacting a beneficial use (i.e., violating Receiving Water Limitation VI.A.4). If the discharge is found to be adversely affecting beneficial uses, the Central Valley Water Board would take the appropriate enforcement actions, terminate coverage for the discharge under this General Order, and/or take other actions to resolve the violation.

e. Discharges to Specific Waterbodies

i. The Basin Plans establish specific water quality criteria for discharges to specific watersheds/reaches and are included as screening levels in Attachment C. If the discharge is within an applicable watershed/reach included in Attachment C, the Discharger is required to analyze a representative sample of the groundwater to be discharged for the applicable pollutants. The screening levels contained in Attachment C supercede those contained in Attachment B for respective parameters applicable to the discharge. If the analytical data demonstrate that constituent concentrations in the groundwater exceed the water quality screening levels listed in Attachment C, the respective effluent limitations shall apply in addition to applicable effluent limitations established due to exceedances of the screening levels for additional parameters contained in Attachment B and the effluent limitations established for petroleum products for all discharges of groundwater from cleanup of petroleum fuel pollution, as specified in the Notice of Applicability from the Executive Officer.

ii. The Basin Plan for the Sacramento and San Joaquin River Basins includes a water quality objective for surface waters (except for Goose Lake) that the "…*pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses.*" The Basin Plan for the Tulare Lake Basin includes a water quality objective for surface waters that the "…*pH shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH.*" Effluent limitations for pH are included in this Order based on the Basin Plan objectives for pH and are applicable to all discharges to surface waters of groundwater from cleanup of petroleum fuel pollution. The Notice of Applicability from the Executive Officer shall specify the applicable effluent limitations, dependent on receiving waterbody.

4. WQBEL Calculations

a. As discussed in section V.C.3 above, WQBELs for benzene, ethylbenzene, lead, methanol, methyl tertiary butyl ether, naphthalene, toluene, total petroleum

hydrocarbons, and xylene are retained from Order R5-2008-0085, which are based on the Basin Plans' narrative chemical constituents objective and applied as MDELs. Effluent limitations for discharges of groundwater from cleanup of petroleum fuel pollution to specific waterbodies listed in the Basin Plans were based on Basin Plan objectives and applied directly as MDELs or instantaneous limitations (i.e., pH).

b. WQBELs for ethylene dibromide, ethylene dichloride, lead, PAHs, and the remaining priority pollutants were calculated in accordance with section 1.4 of the SIP. Subsection c. below describes the methodology used for calculating WQBELs for these parameters.

c. Effluent Limitation Calculations. In calculating effluent limitations that will be specified in the Notice of Applicability, the effluent concentration allowances were set equal to the criteria/standards/objectives:

$ECA_{acute} = CMC$ $\quad$ $ECA_{chronic} = CCC$ $\quad$ $ECA_{HH} = HH$

<u>where:</u>

ECA_{acute}	=	effluent concentration allowance for acute (1-hour average) toxicity criterion
$ECA_{chronic}$	=	effluent concentration allowance for chronic (4-day average) toxicity criterion
ECA_{HH}	=	effluent concentration allowance for human health, agriculture or other long-term criterion or objective
CMC	=	criteria maximum concentration (1-hour average)
CCC	=	criteria continuous concentration (4-day average, unless otherwise noted)
HH	=	human health, agriculture, or other long-term criterion or objective

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the MDEL and the AMEL.

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

$$AMEL = mult_{AMEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic}\right)\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

where:
$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
MA = statistical multiplier converting CMC to LTA
MC = statistical multiplier converting CCC to LTA

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plans' narrative toxicity objective, this Order requires each Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, section V). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. Acute Aquatic Toxicity. The Basin Plans contain a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00 for the Sacramento and San Joaquin River Basins and III-6 for the Tulare Lake Basin) The Basin Plans also state that, "…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc." Accordingly, effluent limitations for acute toxicity, consistent with Order R5-2008-0085, have been included in this Order as follows:

i. Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay ---------- 70%
Median for any three or more consecutive bioassays --------- 90%

b. Chronic Aquatic Toxicity. The Basin Plans contain a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00 for the Sacramento and San Joaquin River Basins and III-6 for the Tulare Lake Basin. Only discharges that do not demonstrate chronic toxicity are eligible for this Order, therefore, there is an assumption that the discharge does not have reasonable potential to cause or

contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

~~No dilution has been granted for the chronic condition. Therefore, chronic toxicity testing results exceeding 1 chronic toxicity unit (TUc) demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plans' narrative toxicity objective.~~

Consistent with the requirements of Order R5-2008-0085, the Monitoring and Reporting Program of this General Order requires annual chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, the Special Provision in section VII.C.2.a. of the Order ~~requires the Discharger to submit to the Central Valley Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also~~ includes a numeric toxicity monitoring trigger and~~,~~ requirements for accelerated monitoring to determine~~, and requirements for TRE initiation~~ if a pattern of toxicity is demonstrated. Discharges that demonstrate chronic toxicity are not eligible for coverage under this Order, therefore, as required in Section VII.C.2.a, if the discharge demonstrates a pattern of toxicity, the Discharger is required to submit a Report of Waste Discharge for application of an individual NPDES permit.

~~Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.*" The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of~~

~~[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)~~

~~effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that authorized Dischargers meet best management practices for compliance with the Basin Plans' narrative toxicity objective, as allowed under 40 CFR 122.44(k).~~

~~To ensure compliance with the Basin Plans' narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E, section V.). Furthermore, the Special Provision contained at VI.C.2.a. of this Order requires Dischargers to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates a pattern of toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE workplan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.~~

6. Salinity

Some concentration of salts will exist in wastewaters discharged under this Order. For groundwater cleanups of petroleum fuel pollution, the salinity will be from the groundwater plus additional salts from chemical treatment and/or concentration of salts from physical treatment (evapoconcentration during air stripping, for instance).

Receiving water concentrations for salinity are specified in the Basin Plans for some waterbodies, but for most waterbodies the acceptable receiving water concentrations for salinity are determined through application of the Basin Plans' Narrative Chemical Constituents Objectives to assure protection of beneficial uses. The most critical beneficial use for salinity is normally Agricultural Irrigation – the salinity that impacts agricultural use varies with the types of crops being grown. It is generally accepted that water containing 700 µmhos/cm of salinity will not detrimentally impact the most salt sensitive crops, although much higher salinity concentrations can be used for agricultural irrigation of less salt-sensitive crops. If the Agricultural Irrigation Beneficial Use does not exist, the next most sensitive use relative to salinity is Municipal and Domestic Use. A single acceptable concentration for salinity in drinking water has not been established. Secondary Drinking Water Standards (MCLs) have been prescribed, the lowest being 900 µmhos/cm. Many community water systems provide drinking water exceeding 900 µmhos/cm.

For groundwater cleanups of petroleum fuel pollution, there is a "public good" associated with the project. Groundwater cleanups are protecting and/or improving the quality of the groundwater, an important public resource and the source of most of the municipal, industrial, and agricultural water supply for the Central Valley.

To minimize the salinity of any discharge under this Order, the following is required:

a. A Salinity Evaluation and Minimization Plan must be submitted with each application.

b. The discharger must submit a report on how the discharge will comply with Receiving Water Standards to protect beneficial uses. In some instances the specific chemical being removed will be a salt (perchorate, for example), but the overall purpose of the cleanup is to remove a particular chemical and not to just lower the overall salinity of the groundwater. Since many groundwaters exceed 700 or 900 µmhos/cm either naturally or through human activities not specifically associated with the pollution being cleaned up, the treated water discharges will exceed 700 or 900 µmhos/cm, so there is the possibility of some degradation of the receiving surface water quality. This potential increase in the salinity of the receiving water is acceptable under the Antidegradation Policy in that there is benefit to the people of the State to protect and restore groundwater resources. The salinity of the receiving water may not be increased to a concentration that eliminates a beneficial use.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations

[Not Applicable]

2. Averaging Periods for Effluent Limitations

40 CFR 122.45(d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable. Effluent limitations for pH are based on numeric objectives contained in the Basin Plans and are established as instantaneous effluent limitations. Consistent with 40 CFR 122.45(d) and recently adopted Orders by the Central Valley Water Board, technology-based effluent limitations have been revised from the 30-day median effluent limitations established in Order R5-2008-0085 to MDELs based on the current, commonly achieved reporting levels in order to ensure proper treatment of the discharge.

3. Satisfaction of Anti-Backsliding Requirements

All effluent limitations in this Order are at least as stringent and previous Order R5-2008-0085. Therefore, there are no antibacksliding issues.

4. Satisfaction of Antidegradation Policy

The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. Due to the expected low volume of discharge expected from discharges regulated under this Order, the impact on existing water quality will be

insignificant. Dischargers seeking authorization to discharge under this General Order are required provide demonstration of compliance with receiving water limitations during the application. In addition, this Order requires all dischargers to develop and implement a Salinity Evaluation and Minimization Plan to ensure adequate measures are developed and implemented to reduce the discharge of salinity to receiving waters. If, however, the Central Valley Water Board, subsequent to review of any application, finds that the impact of a discharge will not be insignificant, then authorization for coverage under this Order will be denied and coverage under an individual permit will be required (including preparation of an anti-degradation analysis).

5. Summary of Final Effluent Limitations

In addition to the applicable effluent limitations specified in sections V.D.5.a.ii and V.D.5.b, discharge of pollutants in excess of the following effluent limitations is prohibited.

Table F-6. Summary of Final Effluent Limitations – Petroleum Constituents

Parameter	Units	Effluent Limitations		Basis[1]
		Average Monthly	Maximum Daily	
Priority Pollutants				
Benzene	µg/L	--	0.35	RL, CPF
Ethylbenzene	µg/L	--	0.5	RL
Ethylene Dichloride	µg/L	0.38	0.5	CTR, RL
Naphthalene	µg/L	--	5.0	RL
Toluene	µg/L	--	0.5	RL
Non-Conventional Pollutants				
Di-isopropyl Ether	µg/L	--	5	RL
Ethylene Dibromide	µg/L	0.05	0.10	MCL
Ethyl Tertiary Butyl Ether	µg/L	--	5	RL
Methanol	µg/L	--	20	RL
Methyl Tertiary Butyl Ether	µg/L	--	1.0	RL
Carcinogenic PAHs[2]	µg/L	0.0044	0.0088	NAWQC
Tertiary Amyl Methyl Ether	µg/L	--	1.0	RL
Tertiary Butyl Alcohol	µg/L	--	10	RL
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	--	50	RL
Total Petroleum Hydrocarbons (Diesel Range)	µg/L	--	50	RL
Xylene[3]	µg/L	--	0.5	RL

[1] RL – Based on the technical capability of the groundwater treatment system to dependably remove the groundwater contaminants to concentrations that are non-detectable by current analytical technology
CPF – Based on OEHHA's Cancer Potency Factor as a Drinking Water Level
MCL – Based on the Primary Maximum Contaminant Level
CTR – Based on water quality criteria contained in the California Toxics Rule, and applied as specified in the SIP
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life

[2] Applies to the sum of benzo[a]pyrene, benz[a]anthracene, benzo[b]fluroanthene, benzo[j]fluoranthene, benzo[k]fluoranthene, dibenz[a,j]acridine, dibenz[a,h]acridine, dibenz[a,h]anthracene, 7H-dibenzo[c,g]carbazole, dibenzo[a,e]pyrene, dibenzo[a,h]pyrene, dibenzo[a,i]pyrene, dibenzo[a,l]pyrene, indeno[1,2,3-cd]pyrene, 5-methylchrysene, 1-nitropyrene, 4-nitropyrene, 1,6-dinitropyrene, 1,8-dinitropyrene, 6-nitrocrysene, 2-nitrofluorene, and chrysene.
[3] Applies to the sum of o-xylene, m-xylene, and p-xylene.

Table F-7. Summary of Final Effluent Limitations – Lead

Parameter	Units	Hardness in mg/L (H)				Basis[1]
		H >47		H ≤47		
		Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	
Lead, Total Recoverable	µg/L	--	--	0.40	0.80	AL, CTR
		--	2	--	--	HH, OEHHA

[1] AL – Based on Aquatic Life criteria.
CTR – Based on water quality criteria contained in the California Toxics Rule, and applied as specified in the SIP.
HH – Based on Human Health criteria.
OEHHA – Based on the Office of Environmental Health and Hazard Assessment Public Health Goal

i. Priority Pollutants

In addition to the applicable effluent limitations specified in sections V.D.5.a.i and V.D.5.b, the following effluent limitations may be applied to discharges to surface waters of groundwater from cleanup of petroleum fuel pollution (as specified in the Notice of Applicability from the Executive Officer).

Table F-8. Summary of Final Effluent Limitations – Priority Pollutants

Parameter	Units	Effluent Limitations		Basis[1]
		Average Monthly	Maximum Daily	
Antimony, Total Recoverable	µg/L	6	12	HH, MCL
Arsenic, Total Recoverable	µg/L	10	20	HH, MCL
Beryllium, Total Recoverable	µg/L	4	8	HH, MCL
Chromium (VI)	µg/L	8	16	AL, CTR
Mercury, Total Recoverable	µg/L	0.05	0.10	HH, CTR
Selenium, Total Recoverable	µg/L	4.1	8.2	AL, CTR
Thallium, Total Recoverable	µg/L	1.7	3.4	HH, CTR
Cyanide, Total (as CN)	µg/L	4.3	8.5	AL, CTR
Asbestos	MFL	7	14	HH, CTR
2,3,7,8-TCDD	µg/L	1.3E-08	2.6E-08	HH, CTR

Parameter	Units	Effluent Limitations		Basis[1]
		Average Monthly	Maximum Daily	
Acrolein	µg/L	320	642	HH, CTR
Acrylonitrile	µg/L	0.059	0.118	HH, CTR
Bromoform	µg/L	4.3	8.6	HH, CTR
Carbon Tetrachloride	µg/L	0.25	0.50	HH, CTR
Chlorobenzene	µg/L	70	140	HH, MCL
Chlorodibromomethane	µg/L	0.401	0.804	HH,CTR
Chloroform	µg/L	80	161	HH, MCL
Dichlorobromomethane	µg/L	0.56	1.12	HH, CTR
1,1-Dichloroethane	µg/L	5	10	HH, MCL
1,1-Dichloroethylene	µg/L	0.057	0.114	HH, CTR
1,2-Dichloropropane	µg/L	0.52	1.04	HH, CTR
1,3-Dichloropropylene	µg/L	0.5	1.0	HH, MCL
Methyl Bromide	µg/L	48	96	HH, CTR
Methylene Chloride	µg/L	4.7	9.4	HH, CTR
1,1,2,2-Tetrachloroethane	µg/L	0.17	0.34	HH, CTR
Tetrachloroethylene	µg/L	0.8	1.6	HH, CTR
1,2-Trans-Dichloroethylene	µg/L	10	20	HH, MCL
1,1,1-Trichloroethane	µg/L	200	401	HH, MCL
1,1,2-Trichloroethane	µg/L	0.60	1.20	HH, CTR
Trichloroethylene	µg/L	2.7	5.4	HH, CTR
Vinyl Chloride	µg/L	0.5	1.0	HH, MCL
2-Chlorophenol	µg/L	120	241	HH, CTR
2,4-Dichlorophenol	µg/L	93	187	HH, CTR
2,4-Dimethylphenol	µg/L	540	1,083	HH, CTR
2-Methyl-4,6-Dinitrophenol	µg/L	13.4	26.9	HH, CTR
2,4-Dinitrophenol	µg/L	70	140	HH, CTR
Pentachlorophenol	µg/L	0.28	0.56	HH, CTR
Phenol	µg/L	21,000	42,130	HH, CTR
2,4,6-Trichlorophenol	µg/L	2.1	4.2	HH, CTR
Acenaphthene	µg/L	1,200	2,407	HH, CTR
Anthracene	µg/L	9,600	19,259	HH, CTR
Benzidine	µg/L	0.00012	0.00024	HH, CTR
Bis(2-Chloroethyl)Ether	µg/L	0.031	0.062	HH, CTR
Bis(2-Chloroisopropyl)Ether	µg/L	1,400	2,809	HH, CTR
Bis(2-Ethylhexyl)Phthalate	µg/L	1.8	3.6	HH, CTR
Butylbenzyl Phthalate	µg/L	3,000	6,019	HH, CTR
2-Chloronaphthalene	µg/L	1,700	3,411	HH, CTR
1,2-Dichlorobenzene	µg/L	600	1,204	HH, MCL
1,3-Dichlorobenzene	µg/L	400	802	HH, CTR
1,4-Dichlorobenzene	µg/L	5	10	HH, MCL
3,3 Dichlorobenzidine	µg/L	0.04	0.08	HH, CTR
Diethyl Phthalate	µg/L	23,000	46,142	HH, CTR
Dimethyl Phthalate	µg/L	313,000	627,937	HH, CTR
Di-n-Butyl Phthalate	µg/L	2,700	5,417	HH, CTR
2,4-Dinitrotoluene	µg/L	0.11	0.22	HH, CTR
1,2-Diphenylhydrazine	µg/L	0.040	0.080	HH, CTR
Fluoranthene	µg/L	300	602	HH, CTR
Fluorene	µg/L	1,300	2,608	HH, CTR
Hexachlorobenzene	µg/L	0.00075	0.00150	HH, CTR
Hexachlorobutadiene	µg/L	0.44	0.88	HH, CTR
Hexachlorocyclopentadiene	µg/L	50	100	HH, MCL

Parameter	Units	Effluent Limitations		Basis[1]
		Average Monthly	Maximum Daily	
Hexachloroethane	µg/L	1.9	3.8	HH, CTR
Isophorone	µg/L	8.4	16.9	HH, CTR
Nitrobenzene	µg/L	17	34	HH, CTR
N-Nitrosodimethylamine	µg/L	0.00069	0.00138	HH, CTR
N-Nitrosodi-n-Propylamine	µg/L	0.005	0.010	HH, CTR
N-Nitrosodiphenylamine	µg/L	5.0	10.0	HH, CTR
Pyrene	µg/L	960	1,926	HH, CTR
1,2,4-Trichlorobenzene	µg/L	5	10	HH, MCL
Aldrin	µg/L	0.00013	0.00026	HH, CTR
alpha-BHC	µg/L	0.0039	0.0078	HH, CTR
beta-BHC	µg/L	0.014	0.028	HH, CTR
gamma-BHC	µg/L	0.019	0.038	HH, CTR
Chlordane	µg/L	0.00057	0.00114	HH, CTR
4,4'-DDT	µg/L	0.00059	0.00118	HH, CTR
4,4'-DDE (linked to DDT)	µg/L	0.00059	0.00118	HH, CTR
4,4'-DDD	µg/L	0.00083	0.00167	HH, CTR
Dieldrin	µg/L	0.00014	0.00028	HH, CTR
alpha-Endosulfan	µg/L	0.046	0.092	AL, CTR
beta-Endolsulfan	µg/L	0.046	0.092	AL, CTR
Endosulfan Sulfate	µg/L	110	221	HH, CTR
Endrin	µg/L	0.029	0.059	AL, CTR
Endrin Aldehyde	µg/L	0.76	1.52	AL, CTR
Heptachlor	µg/L	0.00021	0.00042	HH, CTR
Heptachlor Epoxide	µg/L	0.00010	0.00020	HH, CTR
PCBs sum[2]	µg/L	0.00017	0.00034	HH, CTR
Toxaphene	µg/L	0.0002	0.0003	AL, CTR

[1] HH – Human health criteria.
MCL – Based on Primary Maximum Contaminant Level.
AL – Aquatic life criteria.
CTR – Based on water quality criteria contained in the California Toxics Rule, and applied as specified in the SIP.

[2] This effluent limitation applies to the sum of PCB Aroclors 1242, 1254, 1221, 1232, 1248, 1280, and 1016.

Table F-9. Summary of Final Effluent Limitations – Hardness-Dependent Metals

Parameter	Units	Hardness in mg/L (H)								Basis[1]
		H<50		50≤ H <100		100≤ H <200		H ≥200		
		Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	
Cadmium, Total Recoverable	µg/L	0.5	0.9	1.6	3.2	2.8	5.6	3.5	7.0	AL, CTR
Chromium (III)	µg/L	54	109	134	269	236	474	299	600	AL, CTR
Copper, Total Recoverable	µg/L	1.9	3.8	5.3	10.7	10.2	20.5	13.4	26.9	AL, CTR
Nickel, Total Recoverable	µg/L	13.2	26.5	33.5	67.2	60.2	120.7	76.8	154	AL, CTR
Silver, Total Recoverable	µg/L	0.2	0.4	1.2	2.5	4.1	8.2	6.7	13.4	AL, CTR

Parameter	Units	Hardness in mg/L (H)								Basis[1]
		H<50		50≤ H <100		100≤ H <200		H ≥200		
		Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	
Zinc, Total Recoverable	µg/L	18.5	37.0	46.8	93.9	84.2	168.9	107.5	215.6	AL, CTR

[1] AL – Aquatic life criteria.
CTR – Based on water quality criteria contained in the California Toxics Rule, and applied as specified in the SIP.

a. Discharges to Specific Waterbodies

i. In addition to the applicable effluent limitations specified in sections V.D.5.a.i and V.D.5.a.ii, the following effluent limitations may be applied to discharges of groundwater from cleanup of petroleum fuel pollution to the Sacramento River from Keswick Dam to the I Street Bridge at City of Sacramento, American River from Folsom Dam to the Sacramento River, Folsom Lake, and the Sacramento-San Joaquin Delta (as specified in the Notice of Applicability from the Executive Officer).

Table F-10. Summary of Final Effluent Limitations – Discharges to the Sacramento River from Keswick Dam to the I Street Bridge at City of Sacramento, American River from Folsom Dam to the Sacramento River, Folsom Lake, and the Sacramento-San Joaquin Delta

Parameter	Units	Maximum Daily	Basis[1]
Arsenic, Total Recoverable	mg/L	0.01	BPS
Copper, Total Recoverable	mg/L	0.01[2]	BPS
Silver, Total Recoverable	mg/L	0.01	BPS
Zinc, Total Recoverable	mg/L	0.1[2]	BPS

[1] BPS – Basin Plan for the Sacramento and San Joaquin River Basins.
[2] Does not apply to Sacramento River above the State Highway 32 Bridge at Hamilton City.

ii. In addition to the applicable effluent limitations specified in sections V.D.5.a.i and V.D.5.a.ii, the following effluent limitations may be applied to discharges of groundwater from cleanup of petroleum fuel pollution to the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City (as specified in the Notice of Applicability from the Executive Officer).

Table F-11. Summary of Final Effluent Limitations – Discharges to the Sacramento River and Its Tributaries Above the State Highway 32 Bridge at Hamilton City

Parameter	Units	Hardness in mg/L (H)				Basis[1]
		H<50	50≤ H <100	100≤ H <200	H ≥200	
		Maximum Daily	Maximum Daily	Maximum Daily	Maximum Daily	
Copper, Total Recoverable	µg/L	3.8	10.0	19.4	25.0	BPS
Zinc, Total Recoverable	µg/L	11.0	28.0	49.0	62.0	BPS
Cadmium, Total Recoverable	µg/L	0.13	0.49	1.0	1.6	BPS

[1] BPS – Basin Plan for the Sacramento and San Joaquin River Basins

iii. In addition to the applicable effluent limitations specified in sections V.D.5.a.i and V.D.5.a.ii, the following effluent limitations may be applied to discharges of groundwater from cleanup of petroleum fuel pollution to all waters in the Sacramento and San Joaquin River Basins and waters designated as COLD in the Tulare Lake Basin (as specified in the Notice of Applicability from the Executive Officer).

Table F-12. Summary of Final Effluent Limitations – Discharges to All Waters in the Sacramento and San Joaquin River Basins and Waters Designated as COLD in the Tulare Lake Basin

Parameter	Units	Instantaneous Maximum	Basis[1]
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	ND[2]	BPS, BPT

[1] BPS – Basin Plan for the Sacramento and San Joaquin River Basins.
BPT – Basin Plan for the Tulare Lake Basin.

[2] The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.

iv. In addition to the applicable effluent limitations specified in sections V.D.5.a.i and V.D.5.a.ii, the pH of all discharges of groundwater from cleanup of petroleum fuel pollution within the Sacramento and San Joaquin River Basins (except Goose Creek) shall at all times be within the range of 6.5 and 8.5.

v. In addition to the applicable effluent limitations specified in sections V.D.5.a.i and V.D.5.a.ii, the pH of all discharges of petroleum fuel pollution to Goose Creek shall at all times be within the range of 7.5 and 9.5.

vi. In addition to the applicable effluent limitations specified in sections V.D.5.a.i and V.D.5.a.ii, the pH of all discharges of petroleum fuel pollution within the Tulare Lake Basin shall at all times be within the range of 6.5 and 8.3.

E. Interim Effluent Limitations

[Not Applicable]

F. Land Discharge Specifications

[Not Applicable]

G. Reclamation Specifications

[Not Applicable]

VI. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plans require the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plans. The Basin Plans state that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plans include numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plans' numerical and narrative water quality objectives for ammonia, bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity. This Order also requires compliance with any amendment or revision to the water quality objectives contained in the Basin Plans adopted by the Central Valley Water Board subsequent to adoption of this Order.

2. Order R5-2008-0085 included a receiving water limitation for total dissolved solids based on the upper level Drinking Water Secondary MCL for total dissolved solids. This receiving water limitation is retained in this Order.

B. Groundwater

[Not Applicable]

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for discharges of groundwater from cleanup of petroleum fuel pollution.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the contaminated groundwater and assess treatment plant performance. The monitoring frequency (monthly) and sample type (grab) from Order R5-2008-0085 for total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylene, methyl tertiary butyl ether, lead, methanol, ethanol, tertiary butyl alcohol, di-isopropyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether are retained in this Order.

2. Technology-based effluent limitations have been established for ethylene dichloride and naphthalene in this Order. Influent monitoring requirements for these parameters are established in this Order to collect data on the characteristics of the contaminated groundwater and assess treatment plant performance.

3. Consistent with the requirements of Order R5-2008-0085, reduced influent monitoring frequencies may be authorized for lead, di-isopropyl, ethanol, ethyl tertiary butyl ether, methanol, methyl tertiary butyl ether, tertiary amyl methyl ether, and tertiary butyl alcohol if initial sampling events demonstrate non-detectable concentrations of these constituents.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving water and groundwater.

2. Effluent monitoring frequencies (monthly) and sample types (grab) for electrical conductivity, pH, temperature, total dissolved solids, total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylene, methyl tertiary butyl ether, lead, methanol, ethanol, tertiary butyl alcohol, di-isopropyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether have been retained from Order R5-2008-0085 to determine compliance with effluent limitations for these parameters.

3. Effluent limitations have been established in this Order for ethylene dichloride, naphthalene, carcinogenic PAHs, and ethylene dibromide. Therefore, monthly

monitoring has been established in this Order to determine compliance with effluent limitations.

4. Effluent monitoring is established for constituents which do not have applicable water quality criteria but are detected in the groundwater to be discharged in order to determine compliance with receiving water limitations. The specific constituents to be monitored and their monitoring frequencies shall be specified in the Notice of Applicability.

5. Monthly monitoring for hardness is required in this Order to correctly adjust applicable criteria for lead and other hardness-based metals with applicable effluent limitations.

6. Monitoring for priority pollutants is established for all discharges covered by this Order if treatment is required beyond the removal of petroleum fuel constituents to determine compliance with applicable effluent limitations. Monitoring frequencies will be specified in the Notice of Applicability.

7. Consistent with the requirements of Order R5-2008-0085, reduced effluent monitoring frequencies may be authorized for lead, total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylene, methyl tertiary butyl ether, or other oxygenates if initial sampling events demonstrate non-detectable concentrations of these constituents.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with Order R5-2008-0085, quarterly 96-hour bioassay testing is required for in order to demonstrate compliance with the effluent limitation for acute toxicity

2. **Chronic Toxicity.** Consistent with Order R5-2008-0085, annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plans' narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream. Receiving water monitoring frequencies and sample types for flow, dissolved oxygen, pH, temperature, electrical conductivity, turbidity, and total dissolved solids have been retained from Order R5-2008-0085.

b. Hardness of the upstream receiving water shall be monitored monthly to provide data to verify the applicability of the water quality criteria and effluent limitations for each discharge.

2. Groundwater

[Not Applicable]

E. Other Monitoring Requirements

[Not Applicable]

VIII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42.

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. The reopener provisions allow the Central Valley Water Board to reopen the permit in accordance with 40 CFR 122.62.

2. Special Studies and Additional Monitoring Requirements

a. Chronic Whole Effluent Toxicity Requirements. The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00 for the Sacramento and San Joaquin River Basins and III-6 for the Tulare Lake Basin.) ~~Adequate WET data is not available to determine if the discharges have reasonable potential to cause or contribute to an in-stream excursion above the Basin Plans' narrative toxicity objective. However, the types of discharges authorized by this Order shall not cause chronic toxicity, thus, numeric effluent limits are not necessary.~~ If through chronic WET testing it is demonstrated that the discharge exceeds the numeric toxicity trigger, the Discharger is required to submit a report of waste discharge for application of an individual NPDES permit.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. This Order also includes a provision that includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and instructions if a pattern of toxicity is demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of > 1 TUc (where TUc = 100/NOEC) is applied in the provision, because this Order does not allow any chronic toxicity in the discharge.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before proceeding with further requirements. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test).

3. Best Management Practices and Pollution Prevention

a. Salinity Evaluation and Minimization Plan. The Central Valley Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the 16 March 2006, Central Valley Water Board meeting, Board Member Dr. Karl Longley recommended that the Central Valley Water Board continue to exercise its authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, "*The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board's policy to actively participate in policy development*."

An Evaluation and Minimization Plan for salinity is required as part of the application requirements for this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to the receiving water.

4. Construction, Operation, and Maintenance Specifications

[Not Applicable]

5. Special Provisions for Municipal Facilities (POTWs Only)

[Not Applicable]

6. Other Special Provisions

[Not Applicable]

7. Compliance Schedules

[Not Applicable]

IX. PUBLIC PARTICIPATION

The Central Valley Water Board is considering the issuance of WDRs that will serve as a general NPDES permit for the discharge of groundwater from cleanup of petroleum fuel pollution. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDRs. The Central Valley Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Central Valley Water Board has notified interested agencies, parties, and persons of its intent to prescribe general WDRs for dewatering and other low threat discharges

and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided to interested parties through specific mailings, distribution through the Regional Water Board Lyris Email System and through publication in major newspapers for the following communities: Bakersfield, Contra Costa County, Fresno, Redding and Sacramento.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Central Valley Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on 1 April 2013.

C. Public Hearing

The Central Valley Water 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: 30/31 May 2013
Time: 8:30 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Central Valley Water 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.

Please be aware that dates and venues may change. Our web address is www.waterboards.ca.gov/centralvalley where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to the following:

County Discharge Located	Staff Contact
Amador, Colusa, El Dorado, Lake, Napa, Nevada, Placer, Sierra, Sutter, Yolo, Yuba, Alameda, Alpine, Calaveras, Contra Costa, Sacramento, San Joaquin, Solano, Stanislaus, Tuolumne	Joshua Palmer (916) 464-4674 jpalmer@waterboards.ca.gov
Lassen, Modoc, Shasta, Siskiyou, Butte, Glenn, Plumas, Tehama	Greg Cash (530) 224-3208 gcash@waterboards.ca.gov
Fresno, Kern, Kings, Madera, Mariposa, Merced, San Benito, Tulare, Kern, Kings, and Tulare	Matt Scroggins (559) 445-6042 mscroggins@waterboards.ca.gov

ATTACHMENT G – APPLICATION REQUIREMENTS

To obtain coverage under this General Order, which also serves as the National Pollutant Discharge Elimination System (NPDES) Permit, the Discharger must submit a complete application, including the following requirements. Additional information may be requested by the Central Valley Water Board for specific sites.

A. Form Requirements

- ☐ USEPA Application Form 1 – General Information
- ☐ USEPA Application Form 2D – New Sources and New Dischargers: Application for Permit to Discharge Process Wastewater
- ☐ State Water Board Form 200 (including a site map showing the location of the facility and receiving water body)

B. Project Description

- ☐ Provide a full description on official letterhead of the proposed project. This should include:
  - A description of the event(s) which caused the groundwater pollution, including type and source of the contaminants and date(s) when the discharge occurred or was discovered.
  - Narrative and schematic descriptions of the existing or proposed extraction, treatment, and disposal systems. If the proposed treatment system uses activated carbon, submit an estimate of the breakthrough time for each carbon treatment unit. Provide engineering blueprints signed by a Registered Engineer or Geologist.
  - A map(s) showing the location of the facility, plume, extraction well(s), monitoring wells, treatment system, disposal facilities, site boundaries, and the flow path of the proposed discharge to a major river or lake. Any water supply wells and surface waters within 0.5 miles of the site shall be identified on the map.
  - The anticipated average and maximum flows from the treatment system and the design flow of the treatment and disposal systems.
  - An operation plan describing general operations and maintenance procedures, process controls, and monitoring and pumping rates.
  - If additives are added to the process, briefly describe their composition if available.
  - Include the approximate start-up date for the project and discharge, and the projected discharge duration.
- ☐ Provide a full description of the site hydrology. This should include:
  - Depth to groundwater, including seasonal variations, if known.
  - Direction and gradient of groundwater flow, if known.
  - Vertical and lateral extent of pollution, if known, including details on the location, construction, and analytical results from groundwater monitoring wells used to define the plume. (Note: Full definition of the plume is not a necessary condition for compliance with this Order.)
  - A statement on the potential impact of the wastewater discharge on the containment and rate of movement of the groundwater plume.
  - Effects of the extraction system on the groundwater gradient and the plume.
  - An estimate of the anticipated length of time the extraction will be needed.
- ☐ Provide a description of the receiving water, including general flow conditions, beneficial uses, aquatic resources, downstream water users, and downstream waterbodies.

C. Salinity Requirements

- ☐ Submit a report concerning how the discharge will comply with Receiving Water Limitation VI.A.4 (discharge shall not adversely affect beneficial uses) and any numeric receiving water limitation for salinity prescribed in the Basin Plans.
- ☐ Submit a Salinity Evaluation and Minimization Plan as described in Special Provision VII.C.3.a by which the Discharger will minimize any increase in effluent salinity as the result of treatment of the wastewater.

D. Wastewater Sampling

- ☐ Provide the results of analysis of the groundwater to be discharged for pollutants listed in Attachment B and Attachment C (if applicable)
- ☐ Provide the results of analysis of the groundwater to be discharged and the receiving water for hardness.
- ☐ Provide the results of analysis of the groundwater to be discharged for total petroleum hydrocarbons in the gasoline and diesel ranges (M 8015/5030). Additional or alternative analysis may be required if the suspected pollutants contain hydrocarbon fractions outside the rang these analyses.
- ☐ Provide the results of analysis of the groundwater to be discharged for minerals, including electrical conductivity, total dissolved solids, c sulfate, nitrate, and pH.
- ☐ Provide the results of analysis of the groundwater to be discharged for pollutants causing impairment under the current CWA 303(d) List proposing to discharge to an impaired surface water. The list of impaired surface waters can be found under the CWA Section 303(d) lis web site: http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/impaired_waters_list/2008_2010_usepa_303dlist/20082010_usepa_aprv st.pdf l
- ☐ Provide the analytical data from the laboratory.

E. Evaluation of Reclamation Options

To obtain coverage under this Order, the Discharger is required to evaluate reclamation options and justification for selecting a surface water disposal alternative.

- ☐ Provide proof that discharge to the local municipal wastewater treatment plant is not viable or explain why it is infeasible to connect to the wastewater treatment plant. The Discharger may submit any denial or restrictive flow letter from the wastewater treatment plant as proof that this is not a viable option.
- ☐ Provide an explanation why land disposal is not a viable option.
- ☐ Provide an explanation why underground injection is not a viable option.

F. Public Notice Requirements

- ☐ Provide the names and mailing addresses of nearby residents, including all adjacent property owners, and all residents within a 500 foot radius of the treatment system and discharge point.
- ☐ If the existing or proposed discharge is to a publicly owned and operated storm water collection and conveyance system, provide written approval from the public agency that owns or operates the facility.
- ☐ Send Public Notification Letters to the interested parties listed above, the local County Health Department, and the California Department of Fish and Game describing the project and including the following information:
  - Describe the cleanup project and the involved chemicals of concern;
  - Location of treatment system and discharge (both narrative and on map);
  - Explain permit application and project implementation time schedule;
  - Describe permit discharge limitations and monitoring program; and
  - State in letter that interested parties have 2 weeks from date of letter to submit comments to the Central Valley Water Board.
- ☐ Provide a copy of the Public Notification Letter and certification on who was sent a copy of the letter.

G. Fees

- ☐ Provide the applicable fees. Information concerning the applicable fees can be found at http://www.waterboards.ca.gov/resources/fees/.