**ORDER NO. R8-2007-0041 WAS AMENDED. PLEASE DOWNLOAD ALSO A COPY OF THE AMENDING ORDER NO. R8-2009-0045**

State of California
California Regional Water Quality Control Board
Santa Ana Region

November 30, 2007

ITEM: 13

SUBJECT: Issuance of general discharge permit for discharges to surface waters of groundwater resulting from groundwater dewatering operations and/or groundwater cleanup activities at sites within the San Diego Creek/Newport Bay Watershed polluted by petroleum hydrocarbons, solvents, metals and/or salts - Order No. R8-2007-0041, NPDES NO. CAG918002

**DISCUSSION:**

See attached Order No. R8-2007-0041 and Attachments

**RECOMMENDATIONS:**

Adopt Order No. R8-2007-0041, NPDES No. CAG918002 as presented.

**COMMENT SOLICITATION:**

Comments were solicited from the dischargers and the following agencies:

U.S. Environmental Protection Agency, Permits Issuance Section (WTR-5) – Doug Eberhardt
U.S. Army District, Los Angeles, Corps of Engineers - Regulatory Branch
U.S. Fish and Wildlife Service, Carlsbad
State Water Resources Control Board, Office of the Chief Counsel – Erik Spiess
State Department of Water Resources, Glendale
State Department of Fish and Game, Ontario
California Coastal Commission – Carl Schwing
California Department of Public Health, Santa Ana - Anthony Nhan
California Department of Public Health, San Diego – Steve Williams
California Department of Public Health, San Bernardino – Sean McCarthy
San Bernardino County Flood Control and Transportation Department - Naresh Varma
Riverside County Flood Control and Water Conservation District – Jason Uhley
Orange County Public Facilities and Resources Department, Flood Control – Andy Ngo
Orange County Health Care Agency - Seth Daugherty
Orange County Resources and Development Management Department - Chris Crompton
Orange County Planning & Development Services Department
Orange County Water District - Nira Yamachika
South Coast Air Quality Management District – Dr. Barry R. Wallerstein
Orange County Coastkeeper - Garry Brown

Lawyers for Clean Water C/c San Francisco Baykeeper
Dr. Jack Skinner
Defend the Bay - Robert J. Caustin
Current R8-2007-0008 enrollees within the San Diego Creek/Newport bay Watershed
Current R8-2004-0021 enrollees

# California Regional Water Quality Control Board
## Santa Ana Region

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**ORDER NO. R8-2007-0041**
**NPDES NO. CAG918002**

GENERAL DISCHARGE PERMIT FOR DISCHARGES TO SURFACE WATERS OF GROUNDWATER RESULTING FROM GROUNDWATER DEWATERING OPERATIONS AND/OR GROUNDWATER CLEANUP ACTIVITIES AT SITES WITHIN THE SAN DIEGO CREEK/NEWPORT BAY WATERSHED POLLUTED BY PETROLEUM HYDROCARBONS, SOLVENTS, METALS AND/OR SALTS

A Discharger, as described in the following table, who has complied with the requirements for coverage under this Order, is authorized to discharge under this Order, once permit coverage is effective, as described in this Order.

| | |
|---|---|
| **Dischargers** | Parties within the San Diego Creek/Newport Bay Watershed who conduct dewatering operations or groundwater remediation at sites that have been polluted by petroleum hydrocarbons, solvents, metals and/or salts, etc., and propose to discharge groundwater to surface waters. |

| | |
|---|---|
| This Order was adopted by the Regional Water Quality Control Board on: | **November 30, 2007** |
| This Order shall become effective on: | **November 30, 2007** |
| This Order shall expire on: | **November 1, 2012** |
| The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a **minor** discharge. | |

IT IS HEREBY ORDERED, that 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 Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, Gerard J. Thibeault, 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, Santa Ana Region, on November 30, 2007.

**Gerard J. Thibeault**, Executive Officer

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## I. DISCHARGE INFORMATION

Order No. R8-2007-0008, NPDES No. CAG918001 is a general NPDES permit adopted by the Regional Water Board on February 2, 2007 for discharges to surface waters of extracted and treated groundwater resulting from the cleanup of groundwater polluted by petroleum hydrocarbons and/or solvents at service stations and similar sites.

Order No. R8-2004-0021, NPDES No. CAG998002 is a general NPDES permit adopted by the Regional Water Board on December 20, 2004 for short-term groundwater-related discharges and de minimus wastewater discharges to surface waters within the San Diego Creek/Newport Bay watershed. Groundwater dewatering discharges in the San Diego Creek/ Newport Bay watershed cannot be classified as de minimus due to the frequent presence of nitrates and selenium in shallow groundwater. Total maximum daily loads (TMDLs) for nitrates and selenium in the watershed have been established.

Individually, these general Orders facilitated the processing of permit applications and the early implementation of projects regulated under each general permit within the Santa Ana Region. However, there are certain projects that necessitate regulation under both general permits (e.g., a short-term groundwater dewatering project may intercept a groundwater contaminant plume during dewatering operations).

This general permit will regulate discharges of treated wastewater from groundwater dewatering and/or groundwater remediation activities at sites polluted by petroleum hydrocarbons, solvents, metals and/or salts within the San Diego Creek/Newport Bay watershed.

## II. GENERAL PERMIT APPLICATION

### A. New Dischargers

At least 180 days before the start of a new discharge, the Discharger shall submit an application and obtain the authorization letter from the Executive Officer to discharge groundwater to surface waters. The application shall include the following information:

1. Notice of Intent to be covered under this general permit.

2. A site characterization study that defines the onsite contaminants petroleum hydrocarbons, solvents, metals and/or salts and their properties and the three-dimensional extent and concentration of contaminants in the subsurface, and includes a description of the geologic and hydrologic factors that control the migration of the contaminants.

3. An evaluation of the selenium concentrations in proposed discharges and a determination of whether immediate compliance with the numeric effluent limitations specified in this Order for individual constituents is feasible. If immediate compliance is feasible, then the Discharger can, upon authorization under this Order, discharge in accordance with the numeric effluent limitations and with the

remaining terms and conditions of this Order. If immediate compliance with the numeric selenium limitations is infeasible, then the Discharger must demonstrate that it is not reasonably possible to reduce or eliminate the discharge to surface waters. If it is demonstrated that it is not reasonably feasible to reduce or eliminate the discharge, then the Discharger must either (a) submit for approval by the Executive Officer a proposed plan and schedule that assures that selenium discharges in excess of those allowed pursuant to the effluent limitations will be offset on at least a one-to-one basis, or as determined by the Regional Water Board's Executive Officer; or, (b) demonstrate that the Discharger is a participating member of the Nitrogen and Selenium Management Program (NSMP) Working Group.

Any proposed selenium offset must assure that there is no net loading of selenium to surface waters within the San Diego Creek/Newport Bay watershed. Dischargers who pursue a selenium offset are required to identify a plan and schedule for implementation of the offset prior to commencing any new discharge, and are required to implement that plan and schedule upon approval by the Executive Officer. This plan/schedule is to reflect the shortest practicable time necessary to provide the offset. In no case shall this schedule extend beyond December 20, 2009. It is recognized that the offset may not be completed within the time frame of the actual discharge; therefore, in filing a Notice of Intent to obtain authorization to discharge under this Order, these Dischargers are required to acknowledge explicitly that no notice of termination will be issued and that compliance with this Order will continue to be required and enforced until such time as the offset is satisfactorily completed.

4. An evaluation of the nitrogen concentrations in proposed discharges and a determination of whether immediate compliance with the numeric effluent limitations specified in this Order for surface water discharges of nitrogen is feasible. A description of how a 50% reduction in nutrient discharges will be achieved if nitrogen is present in the discharges. If it is demonstrated that it is not reasonably feasible to achieve immediate compliance with the 50% reduction, then the Discharger is required to (1) identify a proposed plan and schedule whereby the 50% reduction will be achieved within the shortest practicable time, or (2) identify a proposed plan and schedule for implementation of a nitrogen offset. The nitrogen offset program must (a) assure the reduction of nitrogen loading to surface waters equivalent to the requisite 50% reduction, (b) assure the completion of the offset in the shortest practicable time, and (c) be implemented upon approval by the Executive Officer. It is recognized that the offset may not be completed within the time frame of the actual discharge; therefore, in filing a Notice of Intent to obtain authorization to discharge under this Order, these Dischargers are required to acknowledge explicitly that no notice of termination will be issued and that compliance with this Order will continue to be required and enforced until such time as the offset is satisfactorily completed.

5. The Discharger shall submit for approval by the Executive Officer of the Regional Water Board a fixed hardness value based on the 5th percentile of effluent hardness measurements or the average ambient receiving water hardness measurements for those sites polluted with metals (lead, cadmium, copper, chromium (III), nickel, silver, and zinc).

6. A report that shall include the following:

   a. Chemical analysis of the untreated groundwater. A representative groundwater sample shall be analyzed for organic pollutants using EPA method 8260B or equivalent. The characterization of the groundwater shall include total arsenic, total recoverable cadmium, total recoverable chromium VI, total recoverable copper, total recoverable lead, total recoverable mercury, total recoverable nickel, total recoverable selenium, total recoverable zinc, organochlorine compounds (Total Chlordane, Total DDT, Toxaphene, and PCBs), dissolved oxygen (DO), sulfate, chloride, electrical conductivity, total dissolved solids, total suspended solids, total nitrogen, total inorganic nitrogen, hardness, and priority pollutants including 1,4-dioxane and perchlorate. The selenium analysis used shall assure analytical detection levels sufficient to assess compliance with the effluent limitations of this Order. Test results shall be reported with Minimum levels (ML) and method detection limit (MDL); laboratory analytical limits shall be sufficient to detect these constituents at the concentrations listed in Tables 1, 2, 3, 4, and Attachment H. If the results of this analysis demonstrate that compliance with the nitrate or selenium limitations in this Order cannot be achieved, Dischargers who are participating in the Nitrogen and Selenium Management Program (NSMP) Working Group shall comply with sub-paragraph V.A.1.b., below: Dischargers who are not participating in the Working Group shall comply with sub-paragraph II.A.5.a.(1), below.

      (1) If not a member of the Working Group, the Discharger shall identify and assess selenium and nitrogen control and reduction BMPs, including volume-reduction techniques. Together with the NOI, the Discharger shall submit for approval by the Executive Officer a proposed plan and schedule for identifying, evaluating and implementing these BMPs. The BMP evaluation shall include consideration of potential positive and negative impacts that may result from the BMPs. The schedule shall reflect the shortest practicable time frame for the completion of the identified tasks. (see also Provisions VII.C.3.b., below).

   b. The name of the proposed receiving water body, including the location (Latitude and Longitude) of the discharge point (s);

   c. The estimated average and maximum daily flow rates, the start date of discharge (if a new discharge), and the duration of the discharge, and the estimated total volume of the discharge;

   d. A map showing the path from the point of initial discharge to the ultimate location of discharge;

e. A list of known or suspected leaking underground tanks and other facilities or operations that have, or may have impacted the quality of the underlying groundwater within the expected radius of influence of the project.

f. A discussion of the proposed dewatering and or cleanup project (if appropriate), including a review of the extraction system design and the status of definition of free product and dissolved product plumes for sites contaminated with petroleum hydrocarbon or solvents only (as appropriate);

g. A description of the proposed treatment system (if appropriate) and a certification report on the adequacy of each component of the proposed treatment system. This certification report shall contain a requirement-by-requirement analysis, based on accepted engineering practice, of how the process(es) and physical design(s) of the treatment system will ensure compliance with this Order. The design engineer shall affix his/her signature and engineering license number to this certification report. The report(s) shall also certify the following:

   (1) all treatment facility startup and operation instruction manuals are adequate and available to operating personnel;
   (2) all treatment facility maintenance and testing schedules are included in the treatment facility operation and maintenance manual (O&M Manual), which shall be kept readily accessible to onsite operating personnel; and
   (3) influent and effluent sampling locations and ports are located in areas where samples representative of the waste stream to be monitored can be obtained.

h. A discussion of a plan for the prevention of run-on, interception and diversion of runoff, and prevention of infiltration and runoff from contaminated soils stored on-site, if the discharge is associated with a groundwater remediation project and soils containing petroleum projects or other pollutants will be maintained on-site.

i. Any other information deemed necessary by the Executive Officer.

7. The General Permit Application, including the NOI (see Attachment A of this Order), map(s), report, and fee, must be submitted to the following address:

   Permitting Section
   California Regional Water Quality Control Board
   3737 Main Street, Suite 500
   Riverside, CA 92501-3348

## B. Existing Dischargers

1. Within forty five (45) days of the effective date of this Order, existing Dischargers within the San Diego Creek/Newport Bay watershed who are regulated under Order No. R8-2007-0008 and/or Order No. R8-2004-0021, and those Dischargers under individual waste discharge requirements who wish to be regulated under this Order, shall submit a copy of their current monitoring and reporting programs along with the Notice of Intent for this general permit. For Dischargers covered under only Order No. R8-2004-0021, the Notice of Intent must be filed only if the expected duration of

the discharge is more than one year from the date of initiation of the discharge. Additional information may be required if there has been a change in ownership of facility or changes in the character and/or treatment of the discharges

2. For existing Dischargers who have coverage under Order No. R8-2004-0021 for short-term groundwater-related discharges within the San Diego Creek/Newport Bay watershed and who do not participate in the Working Group, and for existing individual Dischargers who wish to obtain coverage under this general permit and who do not participate in the Working Group, when the results of selenium analysis required to be submitted as part of the Notice of Intent demonstrate non-compliance with the effluent limitations for selenium specified in this Order (Discharge Specification V.A.1.a.), the Discharger(s) shall:

   a. Also submit with the Notice of Intent a demonstration that it is not reasonably feasible to reduce or eliminate the discharge;
   b. Submit for approval a plan and schedule to offset selenium discharges in excess of those allowed pursuant to the effluent limitations of this Order. The plan/schedule is to reflect the shortest practicable time necessary to provide the offset;
   c. Collect data on flow and selenium quality to assure that ongoing selenium discharges are properly accounted for and offset, pending development, approval and implementation of the offset plan;
   d. Implement the offset plan upon approval by the Executive Officer; and
   e. Acknowledge explicitly, as part of the Notice of Intent, that no notice of termination will be issued until such time as any requisite selenium offset is satisfactorily completed.

3. For freshwater discharges, within forty five (45) days of the effective date of this Order, Dischargers from those sites polluted with leaded gasoline or metals shall submit for approval by the Regional Water Board Executive Officer the proposed hardness value based on 5th percentile of effluent hardness measurements or the average ambient freshwater receiving water hardness measurements. Once approved by the Executive Officer, this hardness value shall be the basis for determining the lead/metals effluent limits for the discharge from Attachment "J" of this Order.

4. Each Discharger shall submit to the Executive Officer, as part of the application for proposed discharge, a report certifying the adequacy of each component of the proposed treatment system and the associated Operation and Maintenance (O&M) Manual. This certification shall contain a requirement-by-requirement analysis, based on accepted engineering practice, of how the process and physical design of the treatment systems will ensure compliance with this Order. The design engineer[1] shall affix his/her signature, professional license number and seal to this certification.

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1 *A registered civil engineer, registered geologist, or certified engineering geologist licensed in the State of California (Sections 6735, 7835, and 7835.1 of the California Business and Profession's Code).*

### C. General Permit Coverage

Permit coverage will be effective when the Discharger has submitted a complete application and the Regional Water Board Executive Officer issues a discharge authorization letter[2] accompanied with the self monitoring program for the proposed discharge.

### D. Termination of Coverage

The Discharger shall inform the Regional Water Board by a letter if coverage under the permit is no longer needed. The Regional Water Board Executive Officer or designee shall issue a letter terminating coverage under the general permit. Permit coverage will be terminated only for those projects that have complied with all permit requirements. (See also Provisions Section VII.A.3.)

### E. Changes from Authorization Under General Permit To Individual Permit.

Dischargers already covered under the NPDES program, whether by general or individual permit, may elect to continue coverage under the existing valid permit(s) or may submit a complete application for coverage under this General Permit. Dischargers who submit a complete application under this General Permit are not required to submit an individual permit application. The Regional Water Board may request additional information and determine that a Discharger is not eligible for coverage under this General Permit and would be better regulated under an individual or other general NPDES permit or, for discharges to land, under waste discharge requirements (WDRs). If the Regional Water Board issues an NPDES permit or WDRs, the applicability of this General Permit to the specified discharge is immediately terminated on the effective date of the individual NPDES permit or WDRs.

## III. FINDINGS

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Water Board), finds:

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2 *The issuance by the Executive Officer of authorization to discharge under the terms and conditions of this Order is contingent on the satisfactory demonstration that termination/reduction of the discharge is not reasonably feasible.*

## A. Background.

Dischargers enrolled under Order No. R8-2007-0008 and/or Order No. R8-2004-0021[3] who discharge or propose to discharge treated wastewaters from dewatering and or groundwater remediation activities at sites polluted by petroleum hydrocarbons, solvents, metals and/or salts within the San Diego Creek/Newport Bay watershed must obtain coverage under this new Order. To obtain authorization for continued and future discharge to waters of the United States, Dischargers must submit a complete application, as described in II.A., or II.B., above, and obtain coverage in order to be regulated under this General Permit as provided in 40 Code of Federal Regulations[4] (CFR) section 122.28 (b)(2).

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and State laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

## B. Wastewater Description.

This Order regulates discharges to surface water from groundwater dewatering activities at construction development sites and/or discharges from temporary (mobile) or permanent groundwater remediation systems, operated to clean up groundwater contamination from petroleum hydrocarbons, solvents, metals and/or salts. The discharges are to inland fresh and Bay waters within the San Diego Creek/Newport Bay Watershed of the Santa Ana Region. (see additional discussions in the Fact Sheet Attachment F).

Adoption of this general permit is necessary to assure proper regulatory oversight of groundwater-related discharges within the San Diego Creek/Newport Bay watershed. As a matter of regulatory streamlining, this permit will regulate discharges within the San Diego Creek/Newport Bay watershed in lieu of coverage of these discharges under Order No. R8-2007-0008 and Order No. R8-2004-0021.

In summary, this general permit will regulate discharges from activities involving groundwater dewatering and groundwater remediation in areas where contamination from petroleum petroleum hydrocarbons, solvents, metals and/or salts may be present. These activities include the following:

1. Wastes associated with well installation, development, test pumping and purging;
2. Aquifer testing wastes;
3. Dewatering wastes from subterranean seepage;
4. Groundwater dewatering wastes at construction sites; and
5. Groundwater remediation.

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3 *For Dischargers covered under only Order No. R8-2004-0021, the Notice of Intent must be filed only if the expected duration of the discharge is more than one year from the date of initiation of the discharge.*

4 *All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.*

C. **TMDLs.** In June 2007, the U.S. EPA approved the State's 2004-2006 303(d) list of impaired water bodies. This list included Reaches 1 and 2 of San Diego Creek and Upper and Lower Newport Bay. One or more of these water bodies were determined to be impaired by one or more pollutants, including the following: fecal coliform, nutrients, selenium, metals and organochlorine compounds (DDT, toxaphene, chlordane and PCBs). Nutrient, fecal coliform, sediment, and toxic pollutants (including selenium and organochlorine compounds) TMDLs have been established for the San Diego Creek/Newport Bay watershed. This Order implements relevant TMDL requirements (see Attachment F).

D. **Regulatory Approach.** For those new Dischargers subject to this Order who choose not to participate in the Nitrogen and Selenium Management Program (NSMP) Working Group, this Order adopts the following regulatory approach. First, these Dischargers are required to evaluate the selenium concentration in their potential discharges to determine whether immediate compliance with the numeric effluent limitations specified in this Order is feasible and either: (1) discharge in accordance with the numeric effluent limitations (if feasible) and with the remaining terms and conditions of this Order; or (2) if compliance with the numeric selenium limitations is infeasible, then the Discharger must demonstrate that it is not reasonably possible to reduce or eliminate the discharge to surface waters, and if it is demonstrated that it is not reasonably feasible to reduce or eliminate the discharge, then the Discharger must either (a) not commence the discharge, or (b) the Discharger must identify and participate in a program that assures that selenium discharges in excess of those allowed pursuant to the effluent limitations will be offset on at least a one-to-one basis, or as determined by the Regional Water Board's Executive Officer. For those Dischargers subject to this Order who choose to participate in the NSMP Working Group, this Order adopts the regulatory approach employed in Order No. R8-2004-0021 (see Attachment F).

E. **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 from groundwater dewatering and cleanup facilities to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4, Division 7 of the Water Code (commencing with Section 13260).

F. **Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information obtained through issuance and enforcement of general permits Orders No. R8-2007-0008 and R8-2004-0021 for groundwater cleanup and dewatering discharges, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and, thus constitutes part of the Findings for this Order. Attachments A through E and G through I are also incorporated into this Order.

G. **State law.** The provisions/requirements in subsections VI.B. of this Order are included to implement State law only. These provisions are not required or authorized under the federal CWA; consequently, violations of these provisions are not subject to the enforcement remedies that are available for NPDES violations.

H. **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 section 21000 et seq. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, mod. (Nov. 6, 2006, B184034) 50 Cal.Rptr.3d 619, 632-636.)

I. **Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 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 discharges authorized by this Order must meet minimum federal technology-based requirements and/or Best Professional Judgment (BPJ) in accordance with Part 125, section 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet.

J. **Water Quality-Based Effluent Limitations.** Section 301(b) of the CWA and section 122.44(d) of 40 CFR require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements that are more stringent than technology-based requirements and are necessary to meet applicable water quality standards. The rationale for these requirements is discussed in the Fact Sheet.

Section 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, water quality-based effluent limitations (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 section 122.44(d)(1)(vi).

**K. Water Quality Control Plans.** The Regional Water Board adopted a revised Water Quality Control Plan for the Santa Ana Region (hereinafter Basin Plan) that became effective on January 24, 1995. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Santa Ana Region addressed through the plan. More recently, the Basin Plan was amended significantly to incorporate revised boundaries for groundwater subbasins, now termed "management zones", new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground waters. This Basin Plan Amendment was adopted by the Regional Water Board on January 22, 2004. The State Water Resources Control Board (State Water Board) and Office of Administrative Law (OAL) approved the Amendment on September 30, 2004 and December 23, 2004, respectively. EPA approved the surface water standards components of the N/TDS Amendment on June 20, 2007.

The existing and potential beneficial uses of Newport Bay, San Diego Creek and tributaries include:

1. Navigation,
2. Water Contact Recreation,
3. Non-contact Water Recreation,
4. Commercial and Sportfishing,
5. Preservation of Biological Habitats of Special Significance,
6. Wildlife Habitat,
7. Rare, Threatened or Endangered Species,
8. Spawning, Reproduction, and Development,
9. Marine Habitat,
10. Shellfish Harvesting,
11. Estuarine Habitat,
12. Warm Freshwater Habitat, and
13. Groundwater Recharge (intermittent beneficial use).

Newport Bay and San Diego Creek are excepted from MUN beneficial use. Surface waters within the San Diego Creek Watershed overlie and recharge the only groundwater management zone in the watershed, the Irvine Groundwater Management Zone. The existing and potential beneficial uses of Irvine Groundwater Management Zone include:

1. Municipal and Domestic Supply,
2. Agricultural Supply,
3. Industrial Service Supply, and
4. Industrial Process Supply

Requirements of this Order implement the Basin Plan.

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

M. **State Implementation Policy.** On March 2, 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 April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for toxicity control. Requirements of this Order implement the SIP.

N. **Compliance Schedules and Interim Requirements.** Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under Section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new, revised or newly interpreted water quality objective. This Order includes compliance schedules and interim effluent limitations and/or discharge specifications. A detailed discussion of the basis for the compliance schedule(s) and interim effluent limitation(s) and/or discharge specifications is included in the Fact Sheet.

O. **Interim Performance-Based Limits:** Implementation by Dischargers not participating in the NSMP Working Group of an acceptable selenium offset program; including implementation of volume-reduction/other BMPs coupled with interim steps necessary to implement the offset, constitutes interim performance-based limits. For Dischargers participating in the NSMP Working Group, participation in the Working Group and timely and effective implementation of the Regional Board-approved Work Plans constitute interim, performance-based effluent limitations.

P. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for CWA purposes (40 C.F.R. section 131.21; 65 Fed. Reg. 24641 (April 27, 2000).). Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 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 May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

Q. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality based effluent limitations for individual pollutants. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. These limitations are not more stringent than required by the CWA.

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. 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 water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR and SIP, which was approved by USEPA on May 18, 2000. Apart from certain surface water standards changes resulting from the N/TDS Basin Plan amendment, all beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to section 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.

R. **Antidegradation Policy.** Section 131.12 requires that 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 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy, where the federal policy applies under federal law. Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet (Attachment F) the permitted discharge is consistent with the antidegradation provisions of section 131.12 and State Water Board Resolution 68-16.

S. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 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. This is a new general permit that will combine and consolidate effluent limitations in existing general permits Order No. R8-2007-0008 and Order No. R8-2004-0021.

T. **Monitoring and Reporting.** Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

U. **Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42. The Regional 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 attached Fact Sheet.

V. **Notification of Interested Parties**. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet (Attachment F) of this Order.

W. **Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

## IV. DISCHARGE PROHIBITIONS

A. The discharge of oil, trash, industrial waste sludge, or other solids directly to the surface waters in this region or in any manner that will ultimately affect surface waters in this region is prohibited.

B. The discharge of any substances in concentrations toxic to animal or plant life is prohibited.

C. The discharge of wastes to property not owned or controlled by the Discharger is prohibited.

D. Odors, vectors, and other nuisances of waste origin are prohibited beyond the limits of each Discharger's facility.

E. The addition of chemicals to the extracted groundwater, exclusive of chlorine to control biofouling ($H_2S$) in treatment systems, is prohibited except when approved by the Executive Officer.

F. The direct discharges of waste to Areas of Special Biological Significance, including Newport Beach Marine Life Refuge and Irvine Coast Marine Life Refuge are prohibited.

## V. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

### A. Effluent Limitations

#### 1. Final Effluent Limitations

a. The Discharger shall maintain compliance with the following effluent limitations at approved compliance point monitoring locations:

**Table 1. Effluent Limitations Applicable to Discharge to San Diego Creek & Tributaries**

| Constituent | Maximum Daily Concentration Limit (µg/L) | Average Monthly Concentration Limit (µg/L) |
|---|---|---|
| Arsenic | 246 | 123 |
| Total Recoverable Chromium VI | 16 | 8.0 |
| Total Recoverable Mercury | 0.102 | 0.051 |
| Total Recoverable Selenium | 8.2 (see paragraph V.A.1.b. & c., below) | 4.1 (see paragraph V.A.1.b. & c., below) |
| Metal Constituents not listed in this Table that are hardness dependent | (see Discharge Specifications V.A.2., below and Attachment B) | |
| Other Constituents Listed in Table 3, below | See Table 3, below | See Table 3, below |

**Table 2. Effluent Limitations Applicable to Upper and Lower Newport Bay**

| Constituent | Maximum Daily Concentration Limit (µg/L) | Average Monthly Concentration Limit (µg/L) |
|---|---|---|
| Arsenic | 59 | 29 |

## Table 2. Effluent Limitations Applicable to Upper and Lower Newport Bay

| Constituent | Maximum Daily Concentration Limit (µg/L) | Average Monthly Concentration Limit (µg/L) |
|---|---|---|
| Total Recoverable Cadmium | 15 | 7.6 |
| Total Recoverable Chromium VI | 82 | 41 |
| Total Recoverable Copper | 4.8 | 2.4 |
| Total Recoverable Lead | 13 | 6.6 |
| Total Recoverable Mercury | 0.102 | 0.051 |
| Total Recoverable Nickel | 13 | 6.7 |
| Total Recoverable Selenium | 116 (see paragraph V.A.1.b. c. & d, below) | 58 (see paragraph V.A.1.b., c. and d, below) |
| Total Recoverable Silver | 1.9 | 0.95 |
| Total Recoverable Zinc | 90 | 45 |
| Other Constituents Listed in Table 3, below | See Table 3, below | See Table 3, below |

## Table 3. Effluent Limitations Applicable to All Receiving Waters

| Constituent | Maximum Daily Concentration Limit (µg/L) | Average Monthly Concentration Limit (µg/L) |
|---|---|---|
| 1,1,1-Trichloroethane (TCA) | 10 | 5 |
| 1,1-Dichloroethane | 10 | 5 |
| 1,1-Dichloroethylene | 12 | 6 |
| 1,2-Dichloroethane | 1.0 | 0.5 |
| 1,2-Dichloroethylene (sum of cis & trans) | 20.1 | 10 |
| 1,2- Dichloroethylene (cis) | 12 | 6 |
| 1,2-Dichloroethylene (trans) | 20 | 10 |
| 1,4-Dioxane | 6 | 3 |
| Benzene | 2 | 1 |
| Carbon Tetrachloride | 1 | 0.5 |
| Chloroform | 10 | 5 |

**Table 3. Effluent Limitations Applicable to All Receiving Waters**

| Constituent | Maximum Daily Concentration Limit (µg/L) | Average Monthly Concentration Limit (µg/L) |
|---|---|---|
| Dichlorobromomethane | 10 | 5 |
| Ethylbenzene | 20 | 10 |
| Methyl Ethyl Ketone | 241 | 120 |
| Methyl Isobutyl Ketone | 241 | 120 |
| Methyl Tertiary Butyl Ether (MTBE) | 26 | 13 |
| Naphthalene | 20 | 10 |
| Perchlorate | 8 | 4 |
| Tert Butyl Alcohol (TBA) | 34 | 12 |
| Tetrachloroethylene (PCE) | 10 | 5 |
| Toluene | 20 | 10 |
| Trichloroethylene (TCE) | 10 | 5 |
| Vinyl Chloride | 1 | 0.5 |
| Xylene (Total) | 20 | 10 |
| 1,2,3-Trichloropropane (1,2,3-TCP) | 1.01 | 0.5 |
| **Constituent** | **Maximum Daily Concentration Limit** | |
| Total Dissolved Solids (TDS) | See Section V.A.3., below | |
| Total Inorganic Nitrogen (TIN) | See Section V.A.4., below | |
| Total Residual Chlorine[5] | 0.1 mg/L | |
| Suspended Solids | 75 mg/L | |
| Sulfides | 0.4 mg/L | |
| Total Petroleum Hydrocarbons | 100 µg/L (ppb) | |
| Oil and Grease | 15 mg/L | |

b. Compliance with the Total Recoverable Selenium limit specified in V.A.1.a., above (see also Provisions VII.C.6.b.), shall be achieved as soon as possible but no later than December 20, 2009, provided that:

5 *If chlorine is used for treatment or disinfection of wastes.*

(1) The Discharger becomes and remains a member of the Nitrogen and Selenium Management Program Working Group (NSMP Working Group, or Working Group), including the Discharger's satisfaction of financial and participatory commitments established by the Working Group; and

(2) The Discharger implements one or more reasonable BMPs for volume-reduction and/or treatment identified as part of the Work Plan developed and implemented by the Working Group;

(3) The Discharger, as a member of the Working Group, is implementing the Work Plan in accordance with the schedule approved by the Regional Water Board (see Provision VII.C.6.c. - Other Special Provisions), or acceptable alternative dates approved by the Executive Officer; and

(4) **Interim Limits**: With regard to the selenium contained in the discharges subject to this Order by Working Group participants, the requirements contained in this Discharge Specification constitute interim performance-based effluent limitations and compliance schedules for these discharges, and also satisfy requirements contained in Receiving Water Limitations VI.A.1. and VI.A.2.i., Discharge Prohibitions IV.B., and Provision VII.A.2. The provisions of this Discharge Specification also constitute interim performance-based effluent limitations and compliance schedules and satisfy the requirements of Receiving Water Limitations VI.A.1. and VI.A.2.i., Discharge Prohibitions IV.B., and Provision VII.A.2. for contractors and licensees of participating Working Group members, provided that such contractors and licensees are adhering to BMP and monitoring provisions as described in this Discharge Specification.

c. If the conditions specified in V.A.1.b., above are not satisfied, then compliance with the Total Recoverable Selenium limit in V.A.1.a., above shall be achieved immediately, unless the Discharger implements a program or programs approved by the Executive Officer to offset discharges in excess of the effluent limits. (See Provision VII.C.6.b.)

d. If the Discharger does not become or does not remain a member of the NSMP Working Group and all other conditions specified in Section V.A.1.a., above, are not satisfied, and if the Discharger demonstrates that immediate compliance with the Total Recoverable Selenium limits in V.A.1.a. is infeasible, the Discharger shall either:

(1) Cease or not commence discharges until compliance with the Total Recoverable Selenium limits in V.A.1.a. can be achieved; or,

(2) Proceed to implement a selenium offset program approved by the Executive Officer as follows:

i. In no case shall the schedule for completion of the offset exceed December 20, 2009. Compliance with the Total Recoverable Selenium limit specified in V.A.1.a., above, shall be achieved no later than December 20, 2009. The offset program shall address offset of selenium discharges that take place while the offset plan is developed and approved.

ii. Collect data on flow and selenium quality to assure that ongoing selenium discharges are properly accounted for and offset pending development, approval and implementation of the offset plan; and

iii. Implement the offset plan/schedule upon approval by the Executive Officer.

iv. The offset program shall be revised if and as necessary to reflect compliance with the selenium limits but shall continue to assure that selenium discharges that took place in excess of the selenium limits are appropriately offset. Any approved amended offset program shall be implemented upon approval by the Executive Officer. (see also Provisions VII.C.6.a.)

2. For discharges to freshwater[6] bodies, the maximum daily and average monthly effluent limitations for the metal constituent shall not exceed the concentrations tabulated in Attachment "B" of this Order, corresponding to the effluent or receiving water hardness[7], as approved by the Executive Officer.

3. The TDS concentration of the discharge shall not exceed the TDS limitations for the affected receiving water shown in Table 4., below:

**Table 4. TDS Effluent Limits**

| Receiving Water | TDS, mg/L |
|---|---|
| Reach 1, San Diego Creek, below Jeffrey Rd | 1500 |
| Reach 2, San Diego Creek, above Jeffrey Rd to Headwaters | 720 |

6 *Waters in which the salinity is equal to or less than 1 part per thousand 95% or more of the time.*

7 *For direct discharges into receiving water, this hardness value is the 5th percentile of effluent hardness measurements or the average ambient receiving water hardness measurements, whichever is more restrictive. Where discharges are into storm drains with wastewater/nuisance flows, the effluent 5th percentile hardness value shall be used.*

4. When the quality of extracted/dewatered groundwater discharges exceeds 1 mg/L Total Inorganic Nitrogen (TIN), the ambient total nitrogen (TN) mass in the discharges shall be reduced by 50%. That is, the average monthly mass of total nitrogen (TN) discharges shall not be greater than 50% of the mass of TN in the extracted groundwater. This limit applies unless the Discharger develops and implements, an offset program approved by the Executive Officer (See Provisions VII.C.6.). The total nitrogen monthly mass emission rate for the extracted groundwater and discharged wastewater shall be determined by using the following formula:

   *Mass (lbs/month) of extracted or discharged wastewater = 8.34 x Q x C*

   Where:

   Q= total flow of extracted or discharged within the month in million gallons
   C= the sum of all measurements for the parameter within the month (in milligrams per liter) for the extracted or discharged wastewater divided by the total number of samples.

5. The pH of the discharge shall be within 6.5 and 8.5 pH units (see also Receiving Water Limitations VI.A.2.h.).

6. There shall be no visible oil and grease in the discharge.

**B. Land Discharge Specifications – Not Applicable**

**C. Reclamation Specifications – Not Applicable**

## VI. RECEIVING WATER LIMITATIONS

### A. Surface Water Limitations

1. The discharge of wastes shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Water Board or the State Board, as required by the Federal CWA and regulations adopted thereunder.

2. The discharge shall not cause any of the following:

   a. Coloration of the receiving waters that causes a nuisance or adversely affects beneficial uses. The natural color of fish, shellfish or other inland, bay and estuarine water resources used for human consumption shall not be impaired.

   b. Deposition of oil, grease, wax or other materials in the receiving waters in concentrations that result in a visible film or in coating objects in the water, or which cause a nuisance or adversely affect beneficial uses.

c. An increase in the amounts of suspended or settleable solids in the receiving waters that will cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.

d. Taste or odor producing substances in the receiving waters at concentrations that cause a nuisance or adversely affect beneficial uses.

e. The presence of radioactive materials in the receiving waters in concentrations that is deleterious to human, plant or animal life.

f. The depletion of the dissolved oxygen concentration below 5.0 mg/l.

g. The temperature of the receiving waters to be raised above 90°F (32°C) during the period of June through October, or above 78°F (26°C) during the rest of the year.

h. Change the ambient pH levels more than 0.5 pH units.

i. The concentration of pollutants in the water column, sediments, or biota to adversely affect the beneficial uses of the receiving water. The discharge shall not result in the degradation of inland surface water communities and populations, including vertebrate, invertebrate, and plant species.

3. Pollutants not specifically mentioned and limited in this Order shall not be discharged at levels that will bioaccumulate in aquatic resources to levels, which are harmful to human health.

4. The discharge shall not result in acute toxicity in ambient receiving waters. The effluent shall be deemed to cause acute toxicity when the toxicity test of 100% effluent as required in Attachment E, results in failure of the test as determined using the pass or fail[8] test protocol specified in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA/821-R-02-012, October 2002). The Discharger shall immediately stop the discharge whenever the discharge fails the toxicity test(s). Prior to resuming the discharge, the Discharger shall identify and correct the source of the toxicity to the satisfaction of the Executive Officer.

**B. Groundwater Limitations**

1. The discharge shall not cause the underlying groundwater to be degraded, to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance.

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8 *Control survival must be 90% or greater for an acceptable test. The test "passes" if survival in the control and effluent concentration equals or exceeds 90%. The test "fails" if survival in the effluent is less than 90%, and is significantly different from control survival (which must be 90% or greater), as determined by hypothesis testing.*

2. The discharge, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations greater than background water quality.

3. Groundwater discharges exceeding the Irvine groundwater management zone water quality objectives for TDS (910 mg/L) and TIN (7.9 mg/L) may be returned to the same management zone from which it was extracted without reduction of the TDS or TIN concentrations so long as the concentrations of those constituents are no greater than when the groundwater was first extracted. Incidental increases in the TDS and TIN concentrations (such as may occur during air stripping) of treated effluent will not be considered increases for the purposes of determining compliance with this discharge specification.

## VII. PROVISIONS

### A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. Neither the treatment nor the discharge of waste shall create, or threaten to create, a nuisance or pollution as defined by Section 13050 of the California Water Code.

3. This Order expires on October 1, 2012. However, coverage under the permit shall continue in force and effect until a new Order is issued for those Dischargers who are authorized to discharge under the terms and conditions of the Order and who submit a renewal application by February 1, 2012. For those Dischargers who do not submit a renewal application by February 1, 2012, discharges of wastewater under this Order shall be terminated by October 1, 2012, unless the Executive Officer of the Regional Water Board has given prior approval for a delayed submission of renewal application. If the Executive Officer has given prior approval for a delayed submission of a renewal application, then the discharge can continue after October 1, 2012.

4. The Executive Officer shall determine whether the proposed discharge is eligible for coverage under this general permit, after which, the Executive Officer may;

   a. Authorize the proposed discharge by transmitting a "Discharge Authorization Letter" to the discharge proponent (now an "authorized Discharger") authorizing the initiation of the discharge under the conditions of this Order and any other conditions consistent with this Order which are necessary to protect the beneficial uses of the receiving waters; or,

   b. Require the discharge proponent to obtain an individual NPDES permit prior to any discharge to surface waters within the Santa Ana Region.

5. The discharge authorization letter from the Executive Officer shall specify any conditions necessary to protect the beneficial uses of the receiving waters and shall specify the Self-Monitoring Program for the proposed discharge in accordance with this Order. The discharge authorization letter may be terminated or revised by the Executive Officer at any time. The discharge authorization letter, which identifies the discharge location(s), is incorporated by reference into this Order.

6. The Discharger shall implement any required plan/programs in this Order upon approval by the Executive Officer and shall update the plans/programs as appropriate during the life of this general permit. The updated plans shall be approved by the Executive Officer.

7. The Discharger shall comply with all requirements of this Order and the terms, conditions and limitations of the discharge authorization letter.

8. The discharge shall be limited to groundwater and added treatment chemicals approved by the Executive Officer.

9. The Discharger shall give advance notice to the Regional Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with these waste discharge requirements.

10. The Discharger shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

11. The Discharger shall take all reasonable steps to minimize any adverse impact to receiving waters resulting from noncompliance with any effluent limitations specified in this Order, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

12. The Discharger shall, at all times, properly operate and maintain[9] all facilities and systems of treatment (and related appurtenances) and control which are installed or used by the Discharger to achieve compliance with this Order and the conditions of the authorization letter(s) from the Executive Officer. Proper operation and maintenance shall include the following:

    a. Effective performance, adequate funding, adequate operator staffing and training and adequate laboratory and process controls and appropriate quality assurance procedures.

    b. Regular maintenance and inspection of all systems.

    c. Maintenance of records of the inspection results that shall be made available to the Regional Water Board whenever required and demanded.

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9 *Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls and appropriate quality assurance procedures.*

13. The Discharger shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants 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.

14. This Order does not convey any property rights of any sort, or any exclusive privilege.

15. This Order is not transferable to any person except after notice to and approval by the Regional Water Board.

16. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the Discharger from his liabilities under federal, state, or local laws, nor guarantee the Discharger a capacity right in the receiving waters.

17. The provisions of this Order are severable, and if any provision of this Order, or the application of any provisions of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order shall not be affected thereby.

18. Any violation of this Order constitutes a violation of the CWA, its regulations, and the California Water Code, and is grounds for enforcement action and/or termination of the authorization to discharge.

19. 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.

20. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, discharge limitations (e.g., maximum daily effluent limitation), or receiving water limitation of this Order, the Discharger shall notify the Regional Water Board by telephone (951) 782-4130 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and, prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

21. All treatment facility startup and operation instruction manuals shall be maintained and available to operating personnel at the site where groundwater remediation is being conducted.

## B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the monitoring and reporting program issued by the Executive Officer with the authorization letter. Revision of this monitoring and reporting program by the Executive Officer may be necessary to confirm that the Discharger is in compliance with the requirements and provisions contained in this Order. Revisions may be made by the Executive Officer at any time during the term of this Order, and may include a reduction or an increase in the number of constituents to be monitored, the frequency of monitoring or the number and size of samples collected. Reduction in the number of constituents being monitored and/or frequency of monitoring shall be considered only if the following conditions are satisfied:

1. Only Dischargers without any criminal convictions under any environmental statute and NPDES civil judicial and administrative enforcement actions are eligible.
2. Only Dischargers covered under the previous Order No. R8-2007-0008 and/or Order No. R8-2004-0021 or under an existing individual permit for the last consecutive two years who have had no effluent violations of monitored constituents during the last two years are eligible.
3. Constituents with effluent limitations shall be monitored at least once per year.
4. The following performance conditions shall be met:

    a. For a specific constituent, reduction of weekly monitoring to bi-monthly (every two weeks) monitoring can be considered with approval by the Executive Officer when the effluent monitoring data for the last 3 months show compliance with effluent limitations.

    b. For a specific constituent, reduction of bi-monthly (every two weeks) monitoring to monthly monitoring can be considered with approval by the Executive Officer when the effluent monitoring data for the last 6 months show compliance with effluent limitations.

    c. For specific constituent, reduction of monthly monitoring to quarterly monitoring can be considered with approval by the Executive Officer when the effluent monitoring data for the last 12 months show compliance with effluent limitations.

5. Should any of the weekly, bi-monthly, monthly, quarterly or annual monitoring for a specific constituent show effluent concentrations above the effluent limit, the frequency of monitoring for that constituent shall be increased to weekly or daily as directed by the Executive Officer.
6. Should groundwater treatment and discharge stop for more than one month, the frequency of monitoring shall be increased to weekly as directed by the Executive Officer.

## C. Special Provisions

### 1. Reopener Provisions

a. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant (including organochlorine compounds) generated by special conditions included in this Order. These special conditions may be, but are not limited to whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

b. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal CWA, or amendments thereto, the Board will revise and modify this Order in accordance with such standards.

c. This Order may be reopened to address any changes in State or federal plans, policies or regulations that would affect the quality requirements for the discharges.

d. Any permit noncompliance constitutes a violation of the CWA and the California Water Code and is grounds for enforcement action; for permit or authorization letter termination, revocation and reissuance, or modification; the issuance of an individual permit; or for denial of a renewal application.

e. This Order may be modified by the Regional Water Board prior to the expiration date to include effluent or receiving water limitations for toxic constituents determined to be present in significant amounts in the discharge through the comprehensive monitoring program included as part of this Order.

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

g. This Order may be reopened to include applicable technology-based effluent limitations, as appropriate when and if the Working Group has identified the selenium treatment technology (-ies) appropriate for these types of discharge.

## 2. Special Studies, Technical Reports and Additional Monitoring Requirements – Selenium

a. When immediate compliance with the Total Recoverable Selenium limits specified in Section V.A.1.a. is infeasible, the Discharger shall submit quarterly progress reports to describe the progress of studies and/or actions undertaken to reduce selenium in the effluent, and to achieve compliance with the requirements of this Order. This includes actions taken pursuant to an approved BMP and Pollution Prevention Plan (See Section VII.C.3. "Best Management Practices and Pollution Prevention", below), and actions taken pursuant to any approved selenium offset program. The Discharger shall submit this report together with the Quarterly Report required in Attachment E. Provided that the Discharger becomes and remains a member of the Nitrogen and Selenium Management Program (NSMP) Working Group, which is implementing a Work Plan that includes investigations of nitrogen and selenium sources and controls in the San Diego Creek Watershed, reports prepared and submitted pursuant to the NSMP shall constitute compliance with this requirement.

## 3. Best Management Practices and Pollution Prevention

### a. Pollutant Minimization Program

The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) as further described below when there is evidence (e.g., sample results reported as Detected, but Not Quantified (DNQ) when the effluent limitation is less than the Method Detection Limit (MDL), sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

(1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or

(2) A sample result is reported as Not Detected (ND) and the effluent limitation is less than the MDL, using reporting protocols described in MRP Section X.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

(1) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

(2) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

(3) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

(4) Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

(5) An annual status report that shall be sent to the Regional Water Board including:

i. All PMP monitoring results for the previous year;

ii. A list of potential sources of the reportable priority pollutant(s);

iii. A summary of all actions undertaken pursuant to the control strategy; and

iv. A description of actions to be taken in the following year.

b. Selenium/Nitrogen BMP

The Discharger shall implement the approved plan and schedule for identifying, evaluating and implementing selenium and nitrogen control and reduction BMPs, including volume-reduction techniques. (see Section II.C.5., above).

**4. Construction, Operation and Maintenance Specifications**

An Operation and Maintenance (O&M) Manual shall be developed prior to the initiation of the discharge and shall be readily accessible to site operating personnel. The O&M Manual shall include the following:

a. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.
b. Process and equipment inspection and maintenance schedules.
c. Describe preventive (fail-safe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events.
d. Identification and description of the possible sources of accidental loss, bypass of untreated or partially treated wastes, and polluted drainage including power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes and possible spills.

**5. Special Provisions for Municipal Facilities (POTWs Only) - Not Applicable**

**6. Other Special Provisions**

a. The Discharger shall implement the nitrogen and/or selenium offset programs upon approval by the Executive Officer.

b. When and if a practicable selenium treatment technology becomes available, the Discharger shall implement that technology and comply with the final selenium limits in this Order within one year of notification of the need to do so by the Regional Water Board, but in no case later than December 20, 2009.

c. The Discharger may achieve compliance with the nitrogen limitations of this Order by the development and implementation of an offset program approved by the Regional Water Board's Executive Officer. Any such offset program shall (1) assure the loading of total nitrogen to surface waters as the result of groundwater dewatering and/or cleanup discharges does not exceed that allowed pursuant to the effluent limits in this Order, and (2) shall be completed as soon as possible.

b. Revisions to an approved selenium offset program that is approved by the Executive Officer but is not fully implemented may be made at the discretion of the Executive Officer in response to revisions to this Order to address revised selenium criteria and/or approved revisions to the selenium TMDL for the San Diego Creek/Newport Bay watershed.

c. The following constitute elements of the Work Plan administered by the NSMP Working Group, along with target completion dates. In each case, the element of the Work Plan shall be completed by the Working Group as soon as possible but no later than the target completion date shown. The Executive Officer is authorized to revise these target completion dates if demonstrated to be necessary and appropriate:

(1) Manage the Work Plan with input from identified technical experts, relevant regulatory agencies and the public (through completion of all elements of the Work Plan);
(2) Perform complementary monitoring and assessment of selenium and nutrient sources in the watershed, utilizing, in part, ongoing selenium and nutrient studies performed by others (12/20/2008);
(3) Identify and assess selenium treatment technologies, including potential future technologies ;
(4) Identify and assess selenium BMPs (including volume-reduction techniques);
(5) Facilitate demonstration testing of identified selenium treatment technologies and BMPs;
(6) Develop a draft selenium offset, trading or mitigation program based upon the outcome of complementary monitoring, treatment technology and BMP-related Work Plan elements and submit to Executive Officer for review (6/20/2009);
(7) Implement the final selenium offset, trading or mitigation program upon the Executive Officer's approval, but no later than 12/20/2009;
(8) Evaluate nutrient TMDL, including load/wasteload allocations and reduction targets (focusing particularly on groundwater-related sources, loadings and reductions);

(9) Develop a draft nutrient offset, trading or mitigation program based upon the outcome of complementary monitoring and TMDL assessment Work Plan elements (6/20/2009);
(10) Implement the final nutrient offset, trading or mitigation program upon the Executive Officer's approval but no later than 12/20/2009; and,
(11) Develop a recommended selenium site-specific objective for the Newport Bay/San Diego Creek watershed if appropriate based upon outcome of other Work Plan elements (with completion date of 6/17/2009.

d. All treatment facility startup and operation instruction manuals shall be maintained and available to operating personnel at the site where groundwater cleanup operation is controlled and managed.

**7. Compliance Schedules - Not Applicable**

## VIII. COMPLIANCE DETERMINATION

**A.** Compliance with Discharge Specification A.1. shall be based on the minimum levels specified in Attachment "H" of this Order, unless an alternative minimum level[10] (ML) is approved for the pollutant of concern by the Regional Water Board's Executive Officer. If the Discharger develops a limit of quantitation (LOQ) specific to their matrix, the LOQ shall serve as the ML with the approval of the Executive Officer of the Regional Water Board. If no minimum level is specified for a constituent, the method detection limit (MDL) specified in 40 CFR 136 shall be used. If no MDL is available, the lowest practicable detection limit shall be used with the approval of the Executive Officer. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations 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).

**B.** Compliance determinations shall be based on available analyses for the time interval associated with the effluent limitation. Where only one sample analysis is available in a specified time interval (e.g., weekly, monthly, quarterly), that sample shall serve to characterize the discharge for the entire interval.

**C. Multiple Sample Data.** When determining compliance with an AMEL, or MDEL for priority pollutants and more than one sample result is available, the 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:

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10 *Minimum level is the concentration at which the entire analytical system must give a recognizable signal and acceptable 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.*

1. 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.

2. 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.

D. **Average Monthly Effluent Limitation (AMEL)**. If the average (or when applicable, the median determined by paragraph VIII.4., above, for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

E. **Maximum Daily Effluent Limitation (MDEL).** If a daily discharge (or when applicable, the median determined by paragraph VIII.4., above, for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

F. Compliance determination with the Tert Butyl Alcohol (TBA) average monthly limit shall be based on all samples taken within the month or if the monitoring frequency requirement is once monthly, every two months or quarterly, a minimum of four test results from the most recent sample events.

G. Effect of Conducting a Pollutant Minimization Program (PMP). If a sample result for a priority pollutant, 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 <u>and</u> the Discharger conducts a PMP for the priority pollutant (as described in Provision VI.C.3), the Discharger shall <u>not</u> be deemed out of compliance.

**H.** One Sample Analysis. Compliance determinations shall be based on available analyses for the time interval associated with the effluent limitation. Where only one sample analysis is available in a specified time interval (e.g., monthly or weekly average), that sample shall serve to characterize the discharge for the entire interval. If quarterly sample results show noncompliance with the average monthly limit and that sample result is used for compliance determinations for each month of the quarter, then three separate violations of the average monthly limit shall be deemed to have occurred.

**I. Single Sample vs. Group of Chemicals.** Compliance with a single effluent limitation which applies to a group of chemicals (e.g., PCBs), based on a single sample shall be determined by considering the concentrations of individual members of the group to be zero if the analytical response for the individual chemical falls below the method detection limit (MDL) for that chemical.

**J. Priority Pollutants.** For priority pollutants, the Discharger 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.

Compliance determination shall be based on the reporting level (ML)[11] specified in Attachment "H" of this Order, unless an alternative reporting level is approved by the Regional Water Board's Executive Officer. When there is more than one RL value for a given substance, the Discharger shall select the RL value that is below the calculated effluent limitation, and use its associated analytical method, listed in Attachment "H" of the M&RP. If no RL value is below the effluent limitation, then the Regional Water Board will select the lowest RL value and its associated analytical method.

**K. Non-Priority Pollutants.** The discharge shall be considered to be in compliance with an effluent limitation if the arithmetic mean of all test results for the monitoring period is less than the constituent effluent limitation. Analytical results that are less than the approved reporting limit shall be assigned a value of zero.

**L. Selenium Limits.**

1. For Working Group Members: With regard to the selenium contained in the discharges subject to this Order by the Discharger as a NSMP Working Group member, compliance with the requirements specified in V.A.1.b. provides interim compliance with the requirements contained in Discharge Prohibitions III.B., Receiving Water Limitations VI.A.2.i. and VI.A.3.; and Provision VII.A.2.

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11 *Minimum level is the concentration at which the entire analytical system must give a recognizable signal and acceptable 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.*

2. For Non-Working Group Members: With regard to the selenium contained in the discharges subject to this Order by the Discharger as a non-NSMP Working Group member, compliance with the requirements specified in V.A.1.d., provides interim compliance with the requirements contained in Discharge Prohibitions IV.B., Receiving Water Limitations , VI.A.1., VI.A.2.i., and VI.A.3.; and Provisions VII.A.2.

**M. Nitrogen Limits**.

The Discharger will also be deemed in compliance with the requirements of Receiving Water Limitations VI.A.1. and VI.A.2.i., when the Discharger is either in compliance with the nitrogen limit specified in Discharge Specifications V.A.4. or when the Discharger implements an acceptable offset program for nitrogen discharges.

**Attachment "A"**

California Regional Water Quality Control Board
Santa Ana Region

## NOTICE OF INTENT

TO COMPLY WITH THE TERMS AND CONDITIONS OF THE GENERAL DISCHARGE PERMIT FOR DISCHARGES TO SURFACE WATERS OF GROUNDWATER RESULTING FROM GROUNDWATER DEWATERING OPERATIONS AND/OR GROUNDWATER CLEANUP ACTIVITIES AT SITES WITHIN THE SAN DIEGO CREEK/NEWPORT BAY WATERSHED POLLUTED BY PETROLEUM HYDROCARBONS, SOLVENTS, METALS AND/OR SALTS
(Order No. R8-2007-0041, NPDES No. CAG918002)

I. PERMITTEE (*Person/Agency Responsible for the Discharge*)
Agency/Company Name:_____

Address:_____

*Street* *City* *State* *ZIP*
Contact Person/Email:_____ Phone:_(_____)_____

II. FACILITY
Name:_____

Location:_____

*Street* *City* *State* *ZIP*
Contact Person/Email:_____ Phone:_(_____)_____

a. Projected Flow Rate (*gpd*):_____; b. Receiving Water (*identify*):_____
c. Estimated Duration of Discharge (*weeks/months*):_____

III. BILLING INFORMATION (*Where annual fee invoices should be sent*)
Agency/Company Name:_____

Address:_____

*Street* *City* *State* *ZIP*

Contact Person:_____; Phone:_(_____)_____

IV. INDICATE EXISTING PERMIT NUMBER: (*if applicable*)
a. Individual permit Order No. _____ NPDES No. _____
b. General Permit Order No. R8-2007-0008_____ General Permit Order No. R8-2004-0021_____
c. Others (specify) _____

V. NOTICE OF TERMINATION:

*I acknowledge that no notice of Termination will be filed and that compliance with the terms and conditions of this Order if and as amended, will be required and enforced until such time as requisite total nitrogen and selenium offsets that pertain to the discharge are satisfactorily completed.*

VI. CERTIFICATION:

*I certify under penalty of law that I am an authorized representative of the permittee and that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the permittee will comply with the terms and conditions stipulated in* ***Order No. R8-2007-0041,*** *including the monitoring and reporting program issued by the Executive Officer of the Regional Board, and that* ***the permittee has documented and made all practicable attempts to avoid, reduce or eliminate the discharge as required by section II.A.3., of the Order****.*

Name and Official Title:_____Email:_____
*(type or print)*

Signature: _____ Date: _____

*Remarks:* *The person who signs Section VI-Certification shall meet the requirements of 40 CFR 122.22.*

**CALCULATED TOTAL RECOVERABLE METALS EFFLUENT LIMITATIONS FOR FRESHWATER DISCHARGES**

| Hardness value | Cadmium | | Chromium (III) | | Copper | | Lead | | Nickel | | Silver | | Zinc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly |
| 1 | 0.0 | 0.1 | 40.0 | 4.8 | 0.2 | 0.2 | 0.2 | 0.0 | 9.5 | 1.1 | 0.0 | — | 2.4 | 2.4 |
| 2 | 0.1 | 0.1 | 70.5 | 8.4 | 0.3 | 0.3 | 0.4 | 0.0 | 17.1 | 1.9 | 0.0 | — | 4.3 | 4.3 |
| 3 | 0.1 | 0.1 | 98.3 | 11.7 | 0.5 | 0.4 | 0.6 | 0.0 | 24.1 | 2.7 | 0.0 | — | 6.0 | 6.1 |
| 4 | 0.1 | 0.2 | 124.4 | 14.8 | 0.6 | 0.6 | 0.9 | 0.0 | 30.7 | 3.4 | 0.0 | — | 7.7 | 7.7 |
| 5 | 0.1 | 0.2 | 149.3 | 17.8 | 0.8 | 0.7 | 1.2 | 0.0 | 37.1 | 4.1 | 0.0 | — | 9.3 | 9.3 |
| 6 | 0.2 | 0.2 | 173.4 | 20.7 | 0.9 | 0.8 | 1.6 | 0.1 | 43.3 | 4.8 | 0.0 | — | 10.8 | 10.9 |
| 7 | 0.2 | 0.3 | 196.7 | 23.4 | 1.1 | 0.9 | 1.9 | 0.1 | 49.4 | 5.5 | 0.0 | — | 12.3 | 12.4 |
| 8 | 0.2 | 0.3 | 219.4 | 26.2 | 1.2 | 1.0 | 2.3 | 0.1 | 55.3 | 6.1 | 0.0 | — | 13.8 | 13.9 |
| 9 | 0.3 | 0.3 | 241.7 | 28.8 | 1.4 | 1.1 | 2.6 | 0.1 | 61.1 | 6.8 | 0.1 | — | 15.2 | 15.4 |
| 10 | 0.3 | 0.4 | 263.4 | 31.4 | 1.5 | 1.3 | 3.0 | 0.1 | 66.8 | 7.4 | 0.1 | — | 16.7 | 16.8 |
| 11 | 0.3 | 0.4 | 284.8 | 33.9 | 1.7 | 1.4 | 3.4 | 0.1 | 72.4 | 8.0 | 0.1 | — | 18.1 | 18.2 |
| 12 | 0.4 | 0.4 | 305.9 | 36.5 | 1.8 | 1.5 | 3.8 | 0.1 | 77.9 | 8.7 | 0.1 | — | 19.4 | 19.6 |
| 13 | 0.4 | 0.4 | 326.6 | 38.9 | 2.0 | 1.6 | 4.2 | 0.2 | 83.3 | 9.3 | 0.1 | — | 20.8 | 21.0 |
| 14 | 0.4 | 0.5 | 347.0 | 41.4 | 2.1 | 1.7 | 4.6 | 0.2 | 88.7 | 9.9 | 0.1 | — | 22.1 | 22.3 |
| 15 | 0.5 | 0.5 | 367.2 | 43.8 | 2.2 | 1.8 | 5.0 | 0.2 | 94.1 | 10.4 | 0.1 | — | 23.5 | 23.7 |
| 16 | 0.5 | 0.5 | 387.1 | 46.1 | 2.4 | 1.9 | 5.5 | 0.2 | 99.3 | 11.0 | 0.1 | — | 24.8 | 25.0 |
| 17 | 0.6 | 0.5 | 406.8 | 48.5 | 2.5 | 2.0 | 5.9 | 0.2 | 104.6 | 11.6 | 0.2 | — | 26.1 | 26.3 |
| 18 | 0.6 | 0.6 | 426.3 | 50.8 | 2.7 | 2.1 | 6.3 | 0.2 | 109.8 | 12.2 | 0.2 | — | 27.4 | 27.6 |
| 19 | 0.6 | 0.6 | 445.6 | 53.1 | 2.8 | 2.2 | 6.8 | 0.3 | 114.9 | 12.8 | 0.2 | — | 28.7 | 28.9 |
| 20 | 0.7 | 0.6 | 464.8 | 55.4 | 2.9 | 2.3 | 7.3 | 0.3 | 120.0 | 13.3 | 0.2 | — | 30.0 | 30.2 |
| 21 | 0.7 | 0.6 | 483.7 | 57.7 | 3.1 | 2.4 | 7.7 | 0.3 | 125.0 | 13.9 | 0.2 | — | 31.2 | 31.5 |
| 22 | 0.7 | 0.7 | 502.5 | 59.9 | 3.2 | 2.5 | 8.2 | 0.3 | 130.1 | 14.4 | 0.3 | — | 32.5 | 32.8 |
| 23 | 0.8 | 0.7 | 521.1 | 62.1 | 3.4 | 2.6 | 8.7 | 0.3 | 135.0 | 15.0 | 0.3 | — | 33.7 | 34.0 |
| 24 | 0.8 | 0.7 | 539.6 | 64.3 | 3.5 | 2.6 | 9.2 | 0.4 | 140.0 | 15.5 | 0.3 | — | 35.0 | 35.3 |
| 25 | 0.9 | 0.7 | 557.9 | 66.5 | 3.6 | 2.7 | 9.6 | 0.4 | 144.9 | 16.1 | 0.3 | — | 36.2 | 36.5 |
| 26 | 0.9 | 0.8 | 576.2 | 68.7 | 3.8 | 2.8 | 10.1 | 0.4 | 149.8 | 16.6 | 0.3 | — | 37.4 | 37.7 |
| 27 | 0.9 | 0.8 | 594.2 | 70.8 | 3.9 | 2.9 | 10.6 | 0.4 | 154.7 | 17.2 | 0.4 | — | 38.6 | 39.0 |
| 28 | 1.0 | 0.8 | 612.2 | 73.0 | 4.1 | 3.0 | 11.1 | 0.4 | 159.5 | 17.7 | 0.4 | — | 39.9 | 40.2 |
| 29 | 1.0 | 0.8 | 630.1 | 75.1 | 4.2 | 3.1 | 11.7 | 0.5 | 164.3 | 18.2 | 0.4 | — | 41.1 | 41.4 |
| 30 | 1.1 | 0.8 | 647.8 | 77.2 | 4.3 | 3.2 | 12.2 | 0.5 | 169.1 | 18.8 | 0.4 | — | 42.2 | 42.6 |
| 31 | 1.1 | 0.9 | 665.4 | 79.3 | 4.5 | 3.3 | 12.7 | 0.5 | 173.8 | 19.3 | 0.5 | — | 43.4 | 43.8 |
| 32 | 1.1 | 0.9 | 683.0 | 81.4 | 4.6 | 3.4 | 13.2 | 0.5 | 178.6 | 19.8 | 0.5 | — | 44.6 | 45.0 |
| 33 | 1.2 | 0.9 | 700.4 | 83.5 | 4.7 | 3.5 | 13.7 | 0.5 | 183.3 | 20.4 | 0.5 | — | 45.8 | 46.2 |
| 34 | 1.2 | 0.9 | 717.7 | 85.5 | 4.9 | 3.6 | 14.3 | 0.6 | 188.0 | 20.9 | 0.5 | — | 47.0 | 47.4 |
| 35 | 1.3 | 0.9 | 735.0 | 87.6 | 5.0 | 3.7 | 14.8 | 0.6 | 192.6 | 21.4 | 0.6 | — | 48.1 | 48.5 |
| 36 | 1.3 | 1.0 | 752.1 | 89.6 | 5.1 | 3.7 | 15.3 | 0.6 | 197.3 | 21.9 | 0.6 | — | 49.3 | 49.7 |
| 37 | 1.3 | 1.0 | 769.2 | 91.7 | 5.3 | 3.8 | 15.9 | 0.6 | 201.9 | 22.4 | 0.6 | — | 50.5 | 50.9 |
| 38 | 1.4 | 1.0 | 786.2 | 93.7 | 5.4 | 3.9 | 16.4 | 0.6 | 206.5 | 22.9 | 0.7 | — | 51.6 | 52.0 |
| 39 | 1.4 | 1.0 | 803.1 | 95.7 | 5.5 | 4.0 | 17.0 | 0.7 | 211.1 | 23.4 | 0.7 | — | 52.8 | 53.2 |
| 40 | 1.5 | 1.1 | 819.9 | 97.7 | 5.7 | 4.1 | 17.5 | 0.7 | 215.7 | 24.0 | 0.7 | — | 53.9 | 54.4 |
| 41 | 1.5 | 1.1 | 836.7 | 99.7 | 5.8 | 4.2 | 18.1 | 0.7 | 220.2 | 24.5 | 0.7 | — | 55.1 | 55.5 |
| 42 | 1.6 | 1.1 | 853.3 | 101.7 | 5.9 | 4.3 | 18.7 | 0.7 | 224.8 | 25.0 | 0.8 | — | 56.2 | 56.6 |
| 43 | 1.6 | 1.1 | 869.9 | 103.7 | 6.1 | 4.4 | 19.2 | 0.7 | 229.3 | 25.5 | 0.8 | — | 57.3 | 57.8 |
| 44 | 1.6 | 1.1 | 886.5 | 105.7 | 6.2 | 4.4 | 19.8 | 0.8 | 233.8 | 26.0 | 0.8 | — | 58.4 | 58.9 |
| 45 | 1.7 | 1.2 | 902.9 | 107.6 | 6.3 | 4.5 | 20.4 | 0.8 | 238.3 | 26.5 | 0.9 | — | 59.6 | 60.1 |
| 46 | 1.7 | 1.2 | 919.3 | 109.6 | 6.5 | 4.6 | 21.0 | 0.8 | 242.7 | 27.0 | 0.9 | — | 60.7 | 61.2 |
| 47 | 1.8 | 1.2 | 935.7 | 111.5 | 6.6 | 4.7 | 21.5 | 0.8 | 247.2 | 27.5 | 0.9 | — | 61.8 | 62.3 |

**CALCULATED TOTAL RECOVERABLE METALS EFFLUENT LIMITATIONS FOR FRESHWATER DISCHARGES**

| Hardness value | Cadmium | | Chromium (III) | | Copper | | Lead | | Nickel | | Silver | | Zinc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly |
| 48 | 1.8 | 1.2 | 952.0 | 113.5 | 6.7 | 4.8 | 22.1 | 0.9 | 251.6 | 28.0 | 1.0 | — | 62.9 | 63.4 |
| 49 | 1.8 | 1.2 | 968.2 | 115.4 | 6.9 | 4.9 | 22.7 | 0.9 | 256.1 | 28.4 | 1.0 | — | 64.0 | 64.6 |
| 50 | 1.9 | 1.3 | 984.3 | 117.3 | 7.0 | 5.0 | 23.3 | 0.9 | 260.5 | 28.9 | 1.0 | — | 65.1 | 65.7 |
| 51 | 1.9 | 1.3 | 1000.4 | 119.2 | 7.1 | 5.0 | 23.9 | 0.9 | 264.9 | 29.4 | 1.1 | — | 66.2 | 66.8 |
| 52 | 2.0 | 1.3 | 1016.4 | 121.2 | 7.3 | 5.1 | 24.5 | 1.0 | 269.3 | 29.9 | 1.1 | — | 67.3 | 67.9 |
| 53 | 2.0 | 1.3 | 1032.4 | 123.1 | 7.4 | 5.2 | 25.1 | 1.0 | 273.7 | 30.4 | 1.2 | — | 68.4 | 69.0 |
| 54 | 2.1 | 1.3 | 1048.4 | 125.0 | 7.5 | 5.3 | 25.7 | 1.0 | 278.0 | 30.9 | 1.2 | — | 69.5 | 70.1 |
| 55 | 2.1 | 1.4 | 1064.2 | 126.9 | 7.7 | 5.4 | 26.3 | 1.0 | 282.4 | 31.4 | 1.2 | — | 70.6 | 71.2 |
| 56 | 2.1 | 1.4 | 1080.1 | 128.7 | 7.8 | 5.5 | 26.9 | 1.0 | 286.7 | 31.8 | 1.3 | — | 71.7 | 72.3 |
| 57 | 2.2 | 1.4 | 1095.8 | 130.6 | 7.9 | 5.5 | 27.5 | 1.1 | 291.0 | 32.3 | 1.3 | — | 72.8 | 73.4 |
| 58 | 2.2 | 1.4 | 1111.5 | 132.5 | 8.0 | 5.6 | 28.2 | 1.1 | 295.3 | 32.8 | 1.4 | — | 73.9 | 74.5 |
| 59 | 2.3 | 1.4 | 1127.2 | 134.4 | 8.2 | 5.7 | 28.8 | 1.1 | 299.6 | 33.3 | 1.4 | — | 74.9 | 75.6 |
| 60 | 2.3 | 1.5 | 1142.8 | 136.2 | 8.3 | 5.8 | 29.4 | 1.1 | 303.9 | 33.8 | 1.4 | — | 76.0 | 76.6 |
| 61 | 2.4 | 1.5 | 1158.4 | 138.1 | 8.4 | 5.9 | 30.0 | 1.2 | 308.2 | 34.2 | 1.5 | — | 77.1 | 77.7 |
| 62 | 2.4 | 1.5 | 1173.9 | 139.9 | 8.6 | 6.0 | 30.7 | 1.2 | 312.5 | 34.7 | 1.5 | — | 78.2 | 78.8 |
| 63 | 2.5 | 1.5 | 1189.4 | 141.8 | 8.7 | 6.0 | 31.3 | 1.2 | 316.7 | 35.2 | 1.6 | — | 79.2 | 79.9 |
| 64 | 2.5 | 1.5 | 1204.9 | 143.6 | 8.8 | 6.1 | 31.9 | 1.2 | 321.0 | 35.7 | 1.6 | — | 80.3 | 80.9 |
| 65 | 2.5 | 1.5 | 1220.3 | 145.4 | 9.0 | 6.2 | 32.6 | 1.3 | 325.2 | 36.1 | 1.6 | — | 81.3 | 82.0 |
| 66 | 2.6 | 1.6 | 1235.6 | 147.3 | 9.1 | 6.3 | 33.2 | 1.3 | 329.5 | 36.6 | 1.7 | — | 82.4 | 83.1 |
| 67 | 2.6 | 1.6 | 1250.9 | 149.1 | 9.2 | 6.4 | 33.8 | 1.3 | 333.7 | 37.1 | 1.7 | — | 83.5 | 84.1 |
| 68 | 2.7 | 1.6 | 1266.2 | 150.9 | 9.3 | 6.4 | 34.5 | 1.3 | 337.9 | 37.5 | 1.8 | — | 84.5 | 85.2 |
| 69 | 2.7 | 1.6 | 1281.4 | 152.7 | 9.5 | 6.5 | 35.1 | 1.4 | 342.1 | 38.0 | 1.8 | — | 85.6 | 86.3 |
| 70 | 2.8 | 1.6 | 1296.6 | 154.5 | 9.6 | 6.6 | 35.8 | 1.4 | 346.3 | 38.5 | 1.9 | — | 86.6 | 87.3 |
| 71 | 2.8 | 1.7 | 1311.8 | 156.4 | 9.7 | 6.7 | 36.4 | 1.4 | 350.5 | 38.9 | 1.9 | — | 87.7 | 88.4 |
| 72 | 2.9 | 1.7 | 1326.9 | 158.2 | 9.9 | 6.8 | 37.1 | 1.4 | 354.6 | 39.4 | 2.0 | — | 88.7 | 89.4 |
| 73 | 2.9 | 1.7 | 1342.0 | 160.0 | 10.0 | 6.8 | 37.7 | 1.5 | 358.8 | 39.9 | 2.0 | — | 89.8 | 90.5 |
| 74 | 2.9 | 1.7 | 1357.0 | 161.7 | 10.1 | 6.9 | 38.4 | 1.5 | 362.9 | 40.3 | 2.1 | — | 90.8 | 91.5 |
| 75 | 3.0 | 1.7 | 1372.0 | 163.5 | 10.2 | 7.0 | 39.1 | 1.5 | 367.1 | 40.8 | 2.1 | — | 91.8 | 92.6 |
| 76 | 3.0 | 1.7 | 1387.0 | 165.3 | 10.4 | 7.1 | 39.7 | 1.5 | 371.2 | 41.2 | 2.2 | — | 92.9 | 93.6 |
| 77 | 3.1 | 1.8 | 1401.9 | 167.1 | 10.5 | 7.2 | 40.4 | 1.6 | 375.3 | 41.7 | 2.2 | — | 93.9 | 94.7 |
| 78 | 3.1 | 1.8 | 1416.8 | 168.9 | 10.6 | 7.2 | 41.1 | 1.6 | 379.5 | 42.1 | 2.3 | — | 94.9 | 95.7 |
| 79 | 3.2 | 1.8 | 1431.6 | 170.6 | 10.8 | 7.3 | 41.7 | 1.6 | 383.6 | 42.6 | 2.3 | — | 96.0 | 96.8 |
| 80 | 3.2 | 1.8 | 1446.5 | 172.4 | 10.9 | 7.4 | 42.4 | 1.7 | 387.7 | 43.1 | 2.4 | — | 97.0 | 97.8 |
| 81 | 3.3 | 1.8 | 1461.3 | 174.2 | 11.0 | 7.5 | 43.1 | 1.7 | 391.8 | 43.5 | 2.4 | — | 98.0 | 98.8 |
| 82 | 3.3 | 1.9 | 1476.0 | 175.9 | 11.1 | 7.6 | 43.8 | 1.7 | 395.9 | 44.0 | 2.5 | — | 99.0 | 99.9 |
| 83 | 3.3 | 1.9 | 1490.7 | 177.7 | 11.3 | 7.6 | 44.4 | 1.7 | 399.9 | 44.4 | 2.5 | — | 100.1 | 100.9 |
| 84 | 3.4 | 1.9 | 1505.4 | 179.4 | 11.4 | 7.7 | 45.1 | 1.8 | 404.0 | 44.9 | 2.6 | — | 101.1 | 101.9 |
| 85 | 3.4 | 1.9 | 1520.1 | 181.2 | 11.5 | 7.8 | 45.8 | 1.8 | 408.1 | 45.3 | 2.6 | — | 102.1 | 102.9 |
| 86 | 3.5 | 1.9 | 1534.7 | 182.9 | 11.7 | 7.9 | 46.5 | 1.8 | 412.1 | 45.8 | 2.7 | — | 103.1 | 104.0 |
| 87 | 3.5 | 1.9 | 1549.3 | 184.7 | 11.8 | 8.0 | 47.2 | 1.8 | 416.2 | 46.2 | 2.7 | — | 104.1 | 105.0 |
| 88 | 3.6 | 2.0 | 1563.9 | 186.4 | 11.9 | 8.0 | 47.9 | 1.9 | 420.2 | 46.7 | 2.8 | — | 105.2 | 106.0 |
| 89 | 3.6 | 2.0 | 1578.4 | 188.1 | 12.0 | 8.1 | 48.6 | 1.9 | 424.3 | 47.1 | 2.8 | — | 106.2 | 107.0 |
| 90 | 3.7 | 2.0 | 1593.0 | 189.9 | 12.2 | 8.2 | 49.3 | 1.9 | 428.3 | 47.6 | 2.9 | — | 107.2 | 108.0 |
| 91 | 3.7 | 2.0 | 1607.4 | 191.6 | 12.3 | 8.3 | 50.0 | 1.9 | 432.3 | 48.0 | 2.9 | — | 108.2 | 109.1 |
| 92 | 3.8 | 2.0 | 1621.9 | 193.3 | 12.4 | 8.3 | 50.7 | 2.0 | 436.3 | 48.5 | 3.0 | — | 109.2 | 110.1 |
| 93 | 3.8 | 2.0 | 1636.3 | 195.0 | 12.6 | 8.4 | 51.4 | 2.0 | 440.4 | 48.9 | 3.0 | — | 110.2 | 111.1 |
| 94 | 3.9 | 2.1 | 1650.7 | 196.8 | 12.7 | 8.5 | 52.1 | 2.0 | 444.4 | 49.4 | 3.1 | — | 111.2 | 112.1 |

**CALCULATED TOTAL RECOVERABLE METALS EFFLUENT LIMITATIONS FOR FRESHWATER DISCHARGES**

| Hardness value | Cadmium | | Chromium (III) | | Copper | | Lead | | Nickel | | Silver | | Zinc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly |
| 95 | 3.9 | 2.1 | 1665.1 | 198.5 | 12.8 | 8.6 | 52.8 | 2.1 | 448.4 | 49.8 | 3.2 | — | 112.2 | 113.1 |
| 96 | 3.9 | 2.1 | 1679.4 | 200.2 | 12.9 | 8.6 | 53.5 | 2.1 | 452.3 | 50.2 | 3.2 | — | 113.2 | 114.1 |
| 97 | 4.0 | 2.1 | 1693.7 | 201.9 | 13.1 | 8.7 | 54.2 | 2.1 | 456.3 | 50.7 | 3.3 | — | 114.2 | 115.1 |
| 98 | 4.0 | 2.1 | 1708.0 | 203.6 | 13.2 | 8.8 | 54.9 | 2.1 | 460.3 | 51.1 | 3.3 | — | 115.2 | 116.1 |
| 99 | 4.1 | 2.1 | 1722.3 | 205.3 | 13.3 | 8.9 | 55.6 | 2.2 | 464.3 | 51.6 | 3.4 | — | 116.2 | 117.1 |
| 100 | 4.1 | 2.2 | 1736.5 | 207.0 | 13.4 | 9.0 | 56.3 | 2.2 | 468.2 | 52.0 | 3.4 | — | 117.2 | 118.1 |
| 101 | 4.2 | 2.2 | 1750.7 | 208.7 | 13.6 | 9.0 | 57.1 | 2.2 | 472.2 | 52.4 | 3.5 | — | 118.2 | 119.1 |
| 102 | 4.2 | 2.2 | 1764.9 | 210.4 | 13.7 | 9.1 | 57.8 | 2.3 | 476.1 | 52.9 | 3.6 | — | 119.2 | 120.1 |
| 103 | 4.3 | 2.2 | 1779.1 | 212.1 | 13.8 | 9.2 | 58.5 | 2.3 | 480.1 | 53.3 | 3.6 | — | 120.2 | 121.1 |
| 104 | 4.3 | 2.2 | 1793.2 | 213.7 | 13.9 | 9.3 | 59.2 | 2.3 | 484.0 | 53.8 | 3.7 | — | 121.1 | 122.1 |
| 105 | 4.4 | 2.3 | 1807.3 | 215.4 | 14.1 | 9.3 | 59.9 | 2.3 | 488.0 | 54.2 | 3.8 | — | 122.1 | 123.1 |
| 106 | 4.4 | 2.3 | 1821.4 | 217.1 | 14.2 | 9.4 | 60.7 | 2.4 | 491.9 | 54.6 | 3.8 | — | 123.1 | 124.1 |
| 107 | 4.5 | 2.3 | 1835.5 | 218.8 | 14.3 | 9.5 | 61.4 | 2.4 | 495.8 | 55.1 | 3.9 | — | 124.1 | 125.1 |
| 108 | 4.5 | 2.3 | 1849.5 | 220.4 | 14.4 | 9.6 | 62.1 | 2.4 | 499.7 | 55.5 | 3.9 | — | 125.1 | 126.1 |
| 109 | 4.6 | 2.3 | 1863.5 | 222.1 | 14.6 | 9.6 | 62.9 | 2.4 | 503.6 | 55.9 | 4.0 | — | 126.1 | 127.1 |
| 110 | 4.6 | 2.3 | 1877.5 | 223.8 | 14.7 | 9.7 | 63.6 | 2.5 | 507.6 | 56.4 | 4.1 | — | 127.0 | 128.1 |
| 111 | 4.6 | 2.4 | 1891.5 | 225.5 | 14.8 | 9.8 | 64.3 | 2.5 | 511.5 | 56.8 | 4.1 | — | 128.0 | 129.1 |
| 112 | 4.7 | 2.4 | 1905.4 | 227.1 | 15.0 | 9.9 | 65.1 | 2.5 | 515.4 | 57.2 | 4.2 | — | 129.0 | 130.0 |
| 113 | 4.7 | 2.4 | 1919.3 | 228.8 | 15.1 | 9.9 | 65.8 | 2.6 | 519.2 | 57.7 | 4.3 | — | 130.0 | 131.0 |
| 114 | 4.8 | 2.4 | 1933.2 | 230.4 | 15.2 | 10.0 | 66.6 | 2.6 | 523.1 | 58.1 | 4.3 | — | 130.9 | 132.0 |
| 115 | 4.8 | 2.4 | 1947.1 | 232.1 | 15.3 | 10.1 | 67.3 | 2.6 | 527.0 | 58.5 | 4.4 | — | 131.9 | 133.0 |
| 116 | 4.9 | 2.4 | 1961.0 | 233.7 | 15.5 | 10.2 | 68.1 | 2.7 | 530.9 | 59.0 | 4.5 | — | 132.9 | 134.0 |
| 117 | 4.9 | 2.4 | 1974.8 | 235.4 | 15.6 | 10.2 | 68.8 | 2.7 | 534.7 | 59.4 | 4.5 | — | 133.9 | 134.9 |
| 118 | 5.0 | 2.5 | 1988.6 | 237.0 | 15.7 | 10.3 | 69.5 | 2.7 | 538.6 | 59.8 | 4.6 | — | 134.8 | 135.9 |
| 119 | 5.0 | 2.5 | 2002.4 | 238.7 | 15.8 | 10.4 | 70.3 | 2.7 | 542.5 | 60.3 | 4.7 | — | 135.8 | 136.9 |
| 120 | 5.1 | 2.5 | 2016.2 | 240.3 | 16.0 | 10.5 | 71.1 | 2.8 | 546.3 | 60.7 | 4.7 | — | 136.8 | 137.9 |
| 121 | 5.1 | 2.5 | 2029.9 | 242.0 | 16.1 | 10.5 | 71.8 | 2.8 | 550.2 | 61.1 | 4.8 | — | 137.7 | 138.8 |
| 122 | 5.2 | 2.5 | 2043.7 | 243.6 | 16.2 | 10.6 | 72.6 | 2.8 | 554.0 | 61.5 | 4.9 | — | 138.7 | 139.8 |
| 123 | 5.2 | 2.5 | 2057.4 | 245.2 | 16.3 | 10.7 | 73.3 | 2.9 | 557.9 | 62.0 | 4.9 | — | 139.6 | 140.8 |
| 124 | 5.3 | 2.6 | 2071.0 | 246.9 | 16.5 | 10.8 | 74.1 | 2.9 | 561.7 | 62.4 | 5.0 | — | 140.6 | 141.8 |
| 125 | 5.3 | 2.6 | 2084.7 | 248.5 | 16.6 | 10.8 | 74.8 | 2.9 | 565.5 | 62.8 | 5.1 | — | 141.6 | 142.7 |
| 126 | 5.4 | 2.6 | 2098.4 | 250.1 | 16.7 | 10.9 | 75.6 | 2.9 | 569.3 | 63.2 | 5.1 | — | 142.5 | 143.7 |
| 127 | 5.4 | 2.6 | 2112.0 | 251.7 | 16.8 | 11.0 | 76.4 | 3.0 | 573.2 | 63.7 | 5.2 | — | 143.5 | 144.7 |
| 128 | 5.5 | 2.6 | 2125.6 | 253.4 | 17.0 | 11.1 | 77.1 | 3.0 | 577.0 | 64.1 | 5.3 | — | 144.4 | 145.6 |
| 129 | 5.5 | 2.6 | 2139.2 | 255.0 | 17.1 | 11.1 | 77.9 | 3.0 | 580.8 | 64.5 | 5.3 | — | 145.4 | 146.6 |
| 130 | 5.6 | 2.7 | 2152.8 | 256.6 | 17.2 | 11.2 | 78.7 | 3.1 | 584.6 | 64.9 | 5.4 | — | 146.4 | 147.5 |
| 131 | 5.6 | 2.7 | 2166.3 | 258.2 | 17.3 | 11.3 | 79.4 | 3.1 | 588.4 | 65.4 | 5.5 | — | 147.3 | 148.5 |
| 132 | 5.7 | 2.7 | 2179.9 | 259.8 | 17.5 | 11.4 | 80.2 | 3.1 | 592.2 | 65.8 | 5.6 | — | 148.3 | 149.5 |
| 133 | 5.7 | 2.7 | 2193.4 | 261.4 | 17.6 | 11.4 | 81.0 | 3.2 | 596.0 | 66.2 | 5.6 | — | 149.2 | 150.4 |
| 134 | 5.7 | 2.7 | 2206.9 | 263.0 | 17.7 | 11.5 | 81.8 | 3.2 | 599.8 | 66.6 | 5.7 | — | 150.2 | 151.4 |
| 135 | 5.8 | 2.7 | 2220.3 | 264.7 | 17.8 | 11.6 | 82.5 | 3.2 | 603.6 | 67.0 | 5.8 | — | 151.1 | 152.3 |
| 136 | 5.8 | 2.8 | 2233.8 | 266.3 | 18.0 | 11.6 | 83.3 | 3.2 | 607.3 | 67.5 | 5.9 | — | 152.1 | 153.3 |
| 137 | 5.9 | 2.8 | 2247.3 | 267.9 | 18.1 | 11.7 | 84.1 | 3.3 | 611.1 | 67.9 | 5.9 | — | 153.0 | 154.3 |
| 138 | 5.9 | 2.8 | 2260.7 | 269.5 | 18.2 | 11.8 | 84.9 | 3.3 | 614.9 | 68.3 | 6.0 | — | 153.9 | 155.2 |
| 139 | 6.0 | 2.8 | 2274.1 | 271.1 | 18.3 | 11.9 | 85.7 | 3.3 | 618.7 | 68.7 | 6.1 | — | 154.9 | 156.2 |
| 140 | 6.0 | 2.8 | 2287.5 | 272.7 | 18.5 | 11.9 | 86.5 | 3.4 | 622.4 | 69.1 | 6.2 | — | 155.8 | 157.1 |
| 141 | 6.1 | 2.8 | 2300.9 | 274.2 | 18.6 | 12.0 | 87.2 | 3.4 | 626.2 | 69.6 | 6.2 | — | 156.8 | 158.1 |

**CALCULATED TOTAL RECOVERABLE METALS EFFLUENT LIMITATIONS FOR FRESHWATER DISCHARGES**

| Hardness value | Cadmium | | Chromium (III) | | Copper | | Lead | | Nickel | | Silver | | Zinc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly |
| 142 | 6.1 | 2.9 | 2314.2 | 275.8 | 18.7 | 12.1 | 88.0 | 3.4 | 629.9 | 70.0 | 6.3 | — | 157.7 | 159.0 |
| 143 | 6.2 | 2.9 | 2327.5 | 277.4 | 18.8 | 12.2 | 88.8 | 3.5 | 633.7 | 70.4 | 6.4 | — | 158.7 | 160.0 |
| 144 | 6.2 | 2.9 | 2340.9 | 279.0 | 18.9 | 12.2 | 89.6 | 3.5 | 637.4 | 70.8 | 6.5 | — | 159.6 | 160.9 |
| 145 | 6.3 | 2.9 | 2354.2 | 280.6 | 19.1 | 12.3 | 90.4 | 3.5 | 641.2 | 71.2 | 6.5 | — | 160.5 | 161.9 |
| 146 | 6.3 | 2.9 | 2367.5 | 282.2 | 19.2 | 12.4 | 91.2 | 3.6 | 644.9 | 71.6 | 6.6 | — | 161.5 | 162.8 |
| 147 | 6.4 | 2.9 | 2380.7 | 283.8 | 19.3 | 12.4 | 92.0 | 3.6 | 648.7 | 72.0 | 6.7 | — | 162.4 | 163.7 |
| 148 | 6.4 | 2.9 | 2394.0 | 285.4 | 19.4 | 12.5 | 92.8 | 3.6 | 652.4 | 72.5 | 6.8 | — | 163.3 | 164.7 |
| 149 | 6.5 | 3.0 | 2407.2 | 286.9 | 19.6 | 12.6 | 93.6 | 3.6 | 656.1 | 72.9 | 6.9 | — | 164.3 | 165.6 |
| 150 | 6.5 | 3.0 | 2420.5 | 288.5 | 19.7 | 12.7 | 94.4 | 3.7 | 659.8 | 73.3 | 6.9 | — | 165.2 | 166.6 |
| 151 | 6.6 | 3.0 | 2433.7 | 290.1 | 19.8 | 12.7 | 95.2 | 3.7 | 663.6 | 73.7 | 7.0 | — | 166.2 | 167.5 |
| 152 | 6.6 | 3.0 | 2446.9 | 291.7 | 19.9 | 12.8 | 96.0 | 3.7 | 667.3 | 74.1 | 7.1 | — | 167.1 | 168.4 |
| 153 | 6.7 | 3.0 | 2460.0 | 293.2 | 20.1 | 12.9 | 96.8 | 3.8 | 671.0 | 74.5 | 7.2 | — | 168.0 | 169.4 |
| 154 | 6.7 | 3.0 | 2473.2 | 294.8 | 20.2 | 13.0 | 97.6 | 3.8 | 674.7 | 74.9 | 7.3 | — | 168.9 | 170.3 |
| 155 | 6.8 | 3.1 | 2486.3 | 296.4 | 20.3 | 13.0 | 98.4 | 3.8 | 678.4 | 75.3 | 7.3 | — | 169.9 | 171.3 |
| 156 | 6.8 | 3.1 | 2499.5 | 297.9 | 20.4 | 13.1 | 99.2 | 3.9 | 682.1 | 75.8 | 7.4 | — | 170.8 | 172.2 |
| 157 | 6.9 | 3.1 | 2512.6 | 299.5 | 20.6 | 13.2 | 100.0 | 3.9 | 685.8 | 76.2 | 7.5 | — | 171.7 | 173.1 |
| 158 | 6.9 | 3.1 | 2525.7 | 301.0 | 20.7 | 13.2 | 100.8 | 3.9 | 689.5 | 76.6 | 7.6 | — | 172.7 | 174.1 |
| 159 | 7.0 | 3.1 | 2538.8 | 302.6 | 20.8 | 13.3 | 101.7 | 4.0 | 693.2 | 77.0 | 7.7 | — | 173.6 | 175.0 |
| 160 | 7.0 | 3.1 | 2551.8 | 304.2 | 20.9 | 13.4 | 102.5 | 4.0 | 696.9 | 77.4 | 7.7 | — | 174.5 | 175.9 |
| 161 | 7.1 | 3.1 | 2564.9 | 305.7 | 21.0 | 13.5 | 103.3 | 4.0 | 700.6 | 77.8 | 7.8 | — | 175.4 | 176.9 |
| 162 | 7.1 | 3.2 | 2577.9 | 307.3 | 21.2 | 13.5 | 104.1 | 4.1 | 704.2 | 78.2 | 7.9 | — | 176.4 | 177.8 |
| 163 | 7.2 | 3.2 | 2591.0 | 308.8 | 21.3 | 13.6 | 104.9 | 4.1 | 707.9 | 78.6 | 8.0 | — | 177.3 | 178.7 |
| 164 | 7.2 | 3.2 | 2604.0 | 310.4 | 21.4 | 13.7 | 105.7 | 4.1 | 711.6 | 79.0 | 8.1 | — | 178.2 | 179.7 |
| 165 | 7.3 | 3.2 | 2617.0 | 311.9 | 21.5 | 13.7 | 106.6 | 4.2 | 715.2 | 79.4 | 8.2 | — | 179.1 | 180.6 |
| 166 | 7.3 | 3.2 | 2629.9 | 313.5 | 21.7 | 13.8 | 107.4 | 4.2 | 718.9 | 79.8 | 8.2 | — | 180.0 | 181.5 |
| 167 | 7.4 | 3.2 | 2642.9 | 315.0 | 21.8 | 13.9 | 108.2 | 4.2 | 722.6 | 80.3 | 8.3 | — | 181.0 | 182.4 |
| 168 | 7.4 | 3.3 | 2655.9 | 316.6 | 21.9 | 14.0 | 109.0 | 4.2 | 726.2 | 80.7 | 8.4 | — | 181.9 | 183.4 |
| 169 | 7.5 | 3.3 | 2668.8 | 318.1 | 22.0 | 14.0 | 109.9 | 4.3 | 729.9 | 81.1 | 8.5 | — | 182.8 | 184.3 |
| 170 | 7.5 | 3.3 | 2681.7 | 319.6 | 22.2 | 14.1 | 110.7 | 4.3 | 733.5 | 81.5 | 8.6 | — | 183.7 | 185.2 |
| 171 | 7.6 | 3.3 | 2694.6 | 321.2 | 22.3 | 14.2 | 111.5 | 4.3 | 737.2 | 81.9 | 8.7 | — | 184.6 | 186.1 |
| 172 | 7.6 | 3.3 | 2707.5 | 322.7 | 22.4 | 14.2 | 112.4 | 4.4 | 740.8 | 82.3 | 8.8 | — | 185.5 | 187.0 |
| 173 | 7.7 | 3.3 | 2720.4 | 324.3 | 22.5 | 14.3 | 113.2 | 4.4 | 744.5 | 82.7 | 8.9 | — | 186.4 | 188.0 |
| 174 | 7.7 | 3.3 | 2733.3 | 325.8 | 22.6 | 14.4 | 114.0 | 4.4 | 748.1 | 83.1 | 8.9 | — | 187.4 | 188.9 |
| 175 | 7.8 | 3.4 | 2746.2 | 327.3 | 22.8 | 14.4 | 114.9 | 4.5 | 751.8 | 83.5 | 9.0 | — | 188.3 | 189.8 |
| 176 | 7.8 | 3.4 | 2759.0 | 328.9 | 22.9 | 14.5 | 115.7 | 4.5 | 755.4 | 83.9 | 9.1 | — | 189.2 | 190.7 |
| 177 | 7.9 | 3.4 | 2771.8 | 330.4 | 23.0 | 14.6 | 116.5 | 4.5 | 759.0 | 84.3 | 9.2 | — | 190.1 | 191.6 |
| 178 | 7.9 | 3.4 | 2784.7 | 331.9 | 23.1 | 14.7 | 117.4 | 4.6 | 762.6 | 84.7 | 9.3 | — | 191.0 | 192.6 |
| 179 | 8.0 | 3.4 | 2797.5 | 333.4 | 23.3 | 14.7 | 118.2 | 4.6 | 766.3 | 85.1 | 9.4 | — | 191.9 | 193.5 |
| 180 | 8.0 | 3.4 | 2810.3 | 335.0 | 23.4 | 14.8 | 119.1 | 4.6 | 769.9 | 85.5 | 9.5 | — | 192.8 | 194.4 |
| 181 | 8.1 | 3.5 | 2823.0 | 336.5 | 23.5 | 14.9 | 119.9 | 4.7 | 773.5 | 85.9 | 9.6 | — | 193.7 | 195.3 |
| 182 | 8.1 | 3.5 | 2835.8 | 338.0 | 23.6 | 14.9 | 120.7 | 4.7 | 777.1 | 86.3 | 9.7 | — | 194.6 | 196.2 |
| 183 | 8.2 | 3.5 | 2848.6 | 339.5 | 23.7 | 15.0 | 121.6 | 4.7 | 780.7 | 86.7 | 9.8 | — | 195.5 | 197.1 |
| 184 | 8.2 | 3.5 | 2861.3 | 341.1 | 23.9 | 15.1 | 122.4 | 4.8 | 784.3 | 87.1 | 9.8 | — | 196.4 | 198.0 |
| 185 | 8.3 | 3.5 | 2874.0 | 342.6 | 24.0 | 15.1 | 123.3 | 4.8 | 787.9 | 87.5 | 9.9 | — | 197.3 | 199.0 |
| 186 | 8.3 | 3.5 | 2886.7 | 344.1 | 24.1 | 15.2 | 124.1 | 4.8 | 791.5 | 87.9 | 10.0 | — | 198.3 | 199.9 |
| 187 | 8.4 | 3.5 | 2899.5 | 345.6 | 24.2 | 15.3 | 125.0 | 4.9 | 795.1 | 88.3 | 10.1 | — | 199.2 | 200.8 |
| 188 | 8.4 | 3.6 | 2912.1 | 347.1 | 24.4 | 15.4 | 125.8 | 4.9 | 798.7 | 88.7 | 10.2 | — | 200.1 | 201.7 |

**CALCULATED TOTAL RECOVERABLE METALS EFFLUENT LIMITATIONS FOR FRESHWATER DISCHARGES**

| Hardness value | Cadmium | | Chromium (III) | | Copper | | Lead | | Nickel | | Silver | | Zinc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly |
| 189 | 8.5 | 3.6 | 2924.8 | 348.6 | 24.5 | 15.4 | 126.7 | 4.9 | 802.3 | 89.1 | 10.3 | — | 201.0 | 202.6 |
| 190 | 8.5 | 3.6 | 2937.5 | 350.1 | 24.6 | 15.5 | 127.5 | 5.0 | 805.9 | 89.5 | 10.4 | — | 201.9 | 203.5 |
| 191 | 8.6 | 3.6 | 2950.2 | 351.6 | 24.7 | 15.6 | 128.4 | 5.0 | 809.5 | 89.9 | 10.5 | — | 202.8 | 204.4 |
| 192 | 8.6 | 3.6 | 2962.8 | 353.1 | 24.8 | 15.6 | 129.2 | 5.0 | 813.1 | 90.3 | 10.6 | — | 203.7 | 205.3 |
| 193 | 8.7 | 3.6 | 2975.4 | 354.7 | 25.0 | 15.7 | 130.1 | 5.1 | 816.7 | 90.7 | 10.7 | — | 204.6 | 206.2 |
| 194 | 8.7 | 3.6 | 2988.0 | 356.2 | 25.1 | 15.8 | 131.0 | 5.1 | 820.2 | 91.1 | 10.8 | — | 205.5 | 207.1 |
| 195 | 8.8 | 3.7 | 3000.7 | 357.7 | 25.2 | 15.8 | 131.8 | 5.1 | 823.8 | 91.5 | 10.9 | — | 206.3 | 208.0 |
| 196 | 8.8 | 3.7 | 3013.3 | 359.2 | 25.3 | 15.9 | 132.7 | 5.2 | 827.4 | 91.9 | 11.0 | — | 207.2 | 208.9 |
| 197 | 8.9 | 3.7 | 3025.8 | 360.7 | 25.5 | 16.0 | 133.5 | 5.2 | 831.0 | 92.3 | 11.1 | — | 208.1 | 209.8 |
| 198 | 8.9 | 3.7 | 3038.4 | 362.2 | 25.6 | 16.1 | 134.4 | 5.2 | 834.5 | 92.7 | 11.2 | — | 209.0 | 210.7 |
| 199 | 9.0 | 3.7 | 3051.0 | 363.7 | 25.7 | 16.1 | 135.3 | 5.3 | 838.1 | 93.1 | 11.3 | — | 209.9 | 211.6 |
| 200 | 9.0 | 3.7 | 3063.5 | 365.2 | 25.8 | 16.2 | 136.1 | 5.3 | 841.7 | 93.5 | 11.4 | — | 210.8 | 212.5 |
| 201 | 9.1 | 3.7 | 3076.1 | 366.6 | 25.9 | 16.3 | 137.0 | 5.3 | 845.2 | 93.9 | 11.5 | — | 211.7 | 213.4 |
| 202 | 9.1 | 3.8 | 3088.6 | 368.1 | 26.1 | 16.3 | 137.9 | 5.4 | 848.8 | 94.3 | 11.6 | — | 212.6 | 214.3 |
| 203 | 9.2 | 3.8 | 3101.1 | 369.6 | 26.2 | 16.4 | 138.7 | 5.4 | 852.3 | 94.7 | 11.7 | — | 213.5 | 215.2 |
| 204 | 9.2 | 3.8 | 3113.6 | 371.1 | 26.3 | 16.5 | 139.6 | 5.4 | 855.9 | 95.1 | 11.8 | — | 214.4 | 216.1 |
| 205 | 9.3 | 3.8 | 3126.1 | 372.6 | 26.4 | 16.5 | 140.5 | 5.5 | 859.4 | 95.5 | 11.9 | — | 215.3 | 217.0 |
| 206 | 9.3 | 3.8 | 3138.6 | 374.1 | 26.6 | 16.6 | 141.4 | 5.5 | 863.0 | 95.8 | 12.0 | — | 216.2 | 217.9 |
| 207 | 9.4 | 3.8 | 3151.1 | 375.6 | 26.7 | 16.7 | 142.2 | 5.5 | 866.5 | 96.2 | 12.1 | — | 217.1 | 218.8 |
| 208 | 9.4 | 3.8 | 3163.5 | 377.1 | 26.8 | 16.7 | 143.1 | 5.6 | 870.1 | 96.6 | 12.2 | — | 217.9 | 219.7 |
| 209 | 9.5 | 3.9 | 3176.0 | 378.6 | 26.9 | 16.8 | 144.0 | 5.6 | 873.6 | 97.0 | 12.3 | — | 218.8 | 220.6 |
| 210 | 9.5 | 3.9 | 3188.4 | 380.0 | 27.0 | 16.9 | 144.9 | 5.6 | 877.1 | 97.4 | 12.4 | — | 219.7 | 221.5 |
| 211 | 9.6 | 3.9 | 3200.9 | 381.5 | 27.2 | 17.0 | 145.7 | 5.7 | 880.7 | 97.8 | 12.5 | — | 220.6 | 222.4 |
| 212 | 9.6 | 3.9 | 3213.3 | 383.0 | 27.3 | 17.0 | 146.6 | 5.7 | 884.2 | 98.2 | 12.6 | — | 221.5 | 223.3 |
| 213 | 9.7 | 3.9 | 3225.7 | 384.5 | 27.4 | 17.1 | 147.5 | 5.7 | 887.7 | 98.6 | 12.7 | — | 222.4 | 224.2 |
| 214 | 9.7 | 3.9 | 3238.1 | 386.0 | 27.5 | 17.2 | 148.4 | 5.8 | 891.2 | 99.0 | 12.8 | — | 223.3 | 225.1 |
| 215 | 9.8 | 4.0 | 3250.5 | 387.4 | 27.6 | 17.2 | 149.3 | 5.8 | 894.8 | 99.4 | 12.9 | — | 224.1 | 226.0 |
| 216 | 9.8 | 4.0 | 3262.8 | 388.9 | 27.8 | 17.3 | 150.2 | 5.9 | 898.3 | 99.8 | 13.0 | — | 225.0 | 226.9 |
| 217 | 9.9 | 4.0 | 3275.2 | 390.4 | 27.9 | 17.4 | 151.0 | 5.9 | 901.8 | 100.2 | 13.1 | — | 225.9 | 227.8 |
| 218 | 10.0 | 4.0 | 3287.6 | 391.9 | 28.0 | 17.4 | 151.9 | 5.9 | 905.3 | 100.6 | 13.2 | — | 226.8 | 228.6 |
| 219 | 10.0 | 4.0 | 3299.9 | 393.3 | 28.1 | 17.5 | 152.8 | 6.0 | 908.8 | 100.9 | 13.3 | — | 227.7 | 229.5 |
| 220 | 10.1 | 4.0 | 3312.2 | 394.8 | 28.2 | 17.6 | 153.7 | 6.0 | 912.3 | 101.3 | 13.4 | — | 228.6 | 230.4 |
| 221 | 10.1 | 4.0 | 3324.6 | 396.3 | 28.4 | 17.6 | 154.6 | 6.0 | 915.8 | 101.7 | 13.5 | — | 229.4 | 231.3 |
| 222 | 10.2 | 4.1 | 3336.9 | 397.7 | 28.5 | 17.7 | 155.5 | 6.1 | 919.3 | 102.1 | 13.6 | — | 230.3 | 232.2 |
| 223 | 10.2 | 4.1 | 3349.2 | 399.2 | 28.6 | 17.8 | 156.4 | 6.1 | 922.8 | 102.5 | 13.7 | — | 231.2 | 233.1 |
| 224 | 10.3 | 4.1 | 3361.5 | 400.7 | 28.7 | 17.8 | 157.3 | 6.1 | 926.3 | 102.9 | 13.8 | — | 232.1 | 234.0 |
| 225 | 10.3 | 4.1 | 3373.8 | 402.1 | 28.9 | 17.9 | 158.2 | 6.2 | 929.8 | 103.3 | 13.9 | — | 232.9 | 234.9 |
| 226 | 10.4 | 4.1 | 3386.0 | 403.6 | 29.0 | 18.0 | 159.1 | 6.2 | 933.3 | 103.7 | 14.0 | — | 233.8 | 235.7 |
| 227 | 10.4 | 4.1 | 3398.3 | 405.1 | 29.1 | 18.0 | 160.0 | 6.2 | 936.8 | 104.1 | 14.1 | — | 234.7 | 236.6 |
| 228 | 10.5 | 4.1 | 3410.6 | 406.5 | 29.2 | 18.1 | 160.9 | 6.3 | 940.3 | 104.4 | 14.2 | — | 235.6 | 237.5 |
| 229 | 10.5 | 4.2 | 3422.8 | 408.0 | 29.3 | 18.2 | 161.8 | 6.3 | 943.8 | 104.8 | 14.3 | — | 236.5 | 238.4 |
| 230 | 10.6 | 4.2 | 3435.1 | 409.4 | 29.5 | 18.2 | 162.7 | 6.3 | 947.3 | 105.2 | 14.5 | — | 237.3 | 239.3 |
| 231 | 10.6 | 4.2 | 3447.3 | 410.9 | 29.6 | 18.3 | 163.6 | 6.4 | 950.8 | 105.6 | 14.6 | — | 238.2 | 240.1 |
| 232 | 10.7 | 4.2 | 3459.5 | 412.4 | 29.7 | 18.4 | 164.5 | 6.4 | 954.3 | 106.0 | 14.7 | — | 239.1 | 241.0 |
| 233 | 10.7 | 4.2 | 3471.7 | 413.8 | 29.8 | 18.5 | 165.4 | 6.4 | 957.7 | 106.4 | 14.8 | — | 239.9 | 241.9 |
| 234 | 10.8 | 4.2 | 3483.9 | 415.3 | 29.9 | 18.5 | 166.3 | 6.5 | 961.2 | 106.8 | 14.9 | — | 240.8 | 242.8 |
| 235 | 10.8 | 4.2 | 3496.1 | 416.7 | 30.1 | 18.6 | 167.2 | 6.5 | 964.7 | 107.1 | 15.0 | — | 241.7 | 243.7 |

**CALCULATED TOTAL RECOVERABLE METALS EFFLUENT LIMITATIONS FOR FRESHWATER DISCHARGES**

| Hardness value | Cadmium | | Chromium (III) | | Copper | | Lead | | Nickel | | Silver | | Zinc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly |
| 236 | 10.9 | 4.2 | 3508.3 | 418.2 | 30.2 | 18.7 | 168.1 | 6.5 | 968.2 | 107.5 | 15.1 | — | 242.6 | 244.5 |
| 237 | 10.9 | 4.3 | 3520.4 | 419.6 | 30.3 | 18.7 | 169.0 | 6.6 | 971.6 | 107.9 | 15.2 | — | 243.4 | 245.4 |
| 238 | 11.0 | 4.3 | 3532.6 | 421.1 | 30.4 | 18.8 | 169.9 | 6.6 | 975.1 | 108.3 | 15.3 | — | 244.3 | 246.3 |
| 239 | 11.0 | 4.3 | 3544.8 | 422.5 | 30.5 | 18.9 | 170.8 | 6.7 | 978.6 | 108.7 | 15.4 | — | 245.2 | 247.2 |
| 240 | 11.1 | 4.3 | 3556.9 | 424.0 | 30.7 | 18.9 | 171.7 | 6.7 | 982.0 | 109.1 | 15.6 | — | 246.0 | 248.1 |
| 241 | 11.1 | 4.3 | 3569.0 | 425.4 | 30.8 | 19.0 | 172.6 | 6.7 | 985.5 | 109.5 | 15.7 | — | 246.9 | 248.9 |
| 242 | 11.2 | 4.3 | 3581.2 | 426.9 | 30.9 | 19.1 | 173.5 | 6.8 | 988.9 | 109.8 | 15.8 | — | 247.8 | 249.8 |
| 243 | 11.2 | 4.3 | 3593.3 | 428.3 | 31.0 | 19.1 | 174.4 | 6.8 | 992.4 | 110.2 | 15.9 | — | 248.6 | 250.7 |
| 244 | 11.3 | 4.4 | 3605.4 | 429.7 | 31.1 | 19.2 | 175.4 | 6.8 | 995.9 | 110.6 | 16.0 | — | 249.5 | 251.6 |
| 245 | 11.4 | 4.4 | 3617.5 | 431.2 | 31.3 | 19.3 | 176.3 | 6.9 | 999.3 | 111.0 | 16.1 | — | 250.4 | 252.4 |
| 246 | 11.4 | 4.4 | 3629.6 | 432.6 | 31.4 | 19.3 | 177.2 | 6.9 | 1002.8 | 111.4 | 16.2 | — | 251.2 | 253.3 |
| 247 | 11.5 | 4.4 | 3641.6 | 434.1 | 31.5 | 19.4 | 178.1 | 6.9 | 1006.2 | 111.8 | 16.3 | — | 252.1 | 254.2 |
| 248 | 11.5 | 4.4 | 3653.7 | 435.5 | 31.6 | 19.5 | 179.0 | 7.0 | 1009.6 | 112.1 | 16.5 | — | 253.0 | 255.0 |
| 249 | 11.6 | 4.4 | 3665.8 | 436.9 | 31.7 | 19.5 | 179.9 | 7.0 | 1013.1 | 112.5 | 16.6 | — | 253.8 | 255.9 |
| 250 | 11.6 | 4.4 | 3677.8 | 438.4 | 31.9 | 19.6 | 180.9 | 7.0 | 1016.5 | 112.9 | 16.7 | — | 254.7 | 256.8 |
| 251 | 11.7 | 4.5 | 3689.9 | 439.8 | 32.0 | 19.7 | 181.8 | 7.1 | 1020.0 | 113.3 | 16.8 | — | 255.6 | 257.7 |
| 252 | 11.7 | 4.5 | 3701.9 | 441.2 | 32.1 | 19.7 | 182.7 | 7.1 | 1023.4 | 113.7 | 16.9 | — | 256.4 | 258.5 |
| 253 | 11.8 | 4.5 | 3713.9 | 442.7 | 32.2 | 19.8 | 183.6 | 7.2 | 1026.8 | 114.1 | 17.0 | — | 257.3 | 259.4 |
| 254 | 11.8 | 4.5 | 3725.9 | 444.1 | 32.3 | 19.9 | 184.6 | 7.2 | 1030.3 | 114.4 | 17.1 | — | 258.1 | 260.3 |
| 255 | 11.9 | 4.5 | 3738.0 | 445.5 | 32.5 | 19.9 | 185.5 | 7.2 | 1033.7 | 114.8 | 17.3 | — | 259.0 | 261.1 |
| 256 | 11.9 | 4.5 | 3750.0 | 447.0 | 32.6 | 20.0 | 186.4 | 7.3 | 1037.1 | 115.2 | 17.4 | — | 259.9 | 262.0 |
| 257 | 12.0 | 4.5 | 3762.0 | 448.4 | 32.7 | 20.1 | 187.3 | 7.3 | 1040.6 | 115.6 | 17.5 | — | 260.7 | 262.9 |
| 258 | 12.0 | 4.6 | 3773.9 | 449.8 | 32.8 | 20.1 | 188.3 | 7.3 | 1044.0 | 116.0 | 17.6 | — | 261.6 | 263.7 |
| 259 | 12.1 | 4.6 | 3785.9 | 451.3 | 32.9 | 20.2 | 189.2 | 7.4 | 1047.4 | 116.3 | 17.7 | — | 262.4 | 264.6 |
| 260 | 12.1 | 4.6 | 3797.9 | 452.7 | 33.1 | 20.3 | 190.1 | 7.4 | 1050.8 | 116.7 | 17.8 | — | 263.3 | 265.5 |
| 261 | 12.2 | 4.6 | 3809.8 | 454.1 | 33.2 | 20.3 | 191.1 | 7.4 | 1054.2 | 117.1 | 18.0 | — | 264.2 | 266.3 |
| 262 | 12.2 | 4.6 | 3821.8 | 455.5 | 33.3 | 20.4 | 192.0 | 7.5 | 1057.7 | 117.5 | 18.1 | — | 265.0 | 267.2 |
| 263 | 12.3 | 4.6 | 3833.7 | 457.0 | 33.4 | 20.5 | 192.9 | 7.5 | 1061.1 | 117.9 | 18.2 | — | 265.9 | 268.1 |
| 264 | 12.4 | 4.6 | 3845.7 | 458.4 | 33.5 | 20.5 | 193.9 | 7.6 | 1064.5 | 118.2 | 18.3 | — | 266.7 | 268.9 |
| 265 | 12.4 | 4.7 | 3857.6 | 459.8 | 33.7 | 20.6 | 194.8 | 7.6 | 1067.9 | 118.6 | 18.4 | — | 267.6 | 269.8 |
| 266 | 12.5 | 4.7 | 3869.5 | 461.2 | 33.8 | 20.7 | 195.7 | 7.6 | 1071.3 | 119.0 | 18.6 | — | 268.4 | 270.6 |
| 267 | 12.5 | 4.7 | 3881.4 | 462.6 | 33.9 | 20.7 | 196.7 | 7.7 | 1074.7 | 119.4 | 18.7 | — | 269.3 | 271.5 |
| 268 | 12.6 | 4.7 | 3893.3 | 464.1 | 34.0 | 20.8 | 197.6 | 7.7 | 1078.1 | 119.7 | 18.8 | — | 270.2 | 272.4 |
| 269 | 12.6 | 4.7 | 3905.2 | 465.5 | 34.1 | 20.9 | 198.5 | 7.7 | 1081.5 | 120.1 | 18.9 | — | 271.0 | 273.2 |
| 270 | 12.7 | 4.7 | 3917.1 | 466.9 | 34.3 | 20.9 | 199.5 | 7.8 | 1084.9 | 120.5 | 19.0 | — | 271.9 | 274.1 |
| 271 | 12.7 | 4.7 | 3929.0 | 468.3 | 34.4 | 21.0 | 200.4 | 7.8 | 1088.3 | 120.9 | 19.2 | — | 272.7 | 274.9 |
| 272 | 12.8 | 4.8 | 3940.9 | 469.7 | 34.5 | 21.1 | 201.4 | 7.8 | 1091.7 | 121.3 | 19.3 | — | 273.6 | 275.8 |
| 273 | 12.8 | 4.8 | 3952.7 | 471.1 | 34.6 | 21.1 | 202.3 | 7.9 | 1095.1 | 121.6 | 19.4 | — | 274.4 | 276.7 |
| 274 | 12.9 | 4.8 | 3964.6 | 472.6 | 34.7 | 21.2 | 203.3 | 7.9 | 1098.5 | 122.0 | 19.5 | — | 275.3 | 277.5 |
| 275 | 12.9 | 4.8 | 3976.4 | 474.0 | 34.9 | 21.3 | 204.2 | 8.0 | 1101.9 | 122.4 | 19.7 | — | 276.1 | 278.4 |
| 276 | 13.0 | 4.8 | 3988.3 | 475.4 | 35.0 | 21.3 | 205.1 | 8.0 | 1105.3 | 122.8 | 19.8 | — | 277.0 | 279.2 |
| 277 | 13.0 | 4.8 | 4000.1 | 476.8 | 35.1 | 21.4 | 206.1 | 8.0 | 1108.7 | 123.1 | 19.9 | — | 277.8 | 280.1 |
| 278 | 13.1 | 4.8 | 4011.9 | 478.2 | 35.2 | 21.5 | 207.0 | 8.1 | 1112.1 | 123.5 | 20.0 | — | 278.7 | 281.0 |
| 279 | 13.1 | 4.8 | 4023.7 | 479.6 | 35.3 | 21.5 | 208.0 | 8.1 | 1115.4 | 123.9 | 20.1 | — | 279.5 | 281.8 |
| 280 | 13.2 | 4.9 | 4035.5 | 481.0 | 35.5 | 21.6 | 208.9 | 8.1 | 1118.8 | 124.3 | 20.3 | — | 280.4 | 282.7 |
| 281 | 13.3 | 4.9 | 4047.3 | 482.4 | 35.6 | 21.7 | 209.9 | 8.2 | 1122.2 | 124.6 | 20.4 | — | 281.2 | 283.5 |
| 282 | 13.3 | 4.9 | 4059.1 | 483.8 | 35.7 | 21.7 | 210.8 | 8.2 | 1125.6 | 125.0 | 20.5 | — | 282.1 | 284.4 |

**CALCULATED TOTAL RECOVERABLE METALS EFFLUENT LIMITATIONS FOR FRESHWATER DISCHARGES**

| Hardness value | Cadmium | | Chromium (III) | | Copper | | Lead | | Nickel | | Silver | | Zinc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly |
| 283 | 13.4 | 4.9 | 4070.9 | 485.2 | 35.8 | 21.8 | 211.8 | 8.3 | 1129.0 | 125.4 | 20.6 | — | 282.9 | 285.2 |
| 284 | 13.4 | 4.9 | 4082.7 | 486.6 | 35.9 | 21.9 | 212.7 | 8.3 | 1132.3 | 125.8 | 20.8 | — | 283.8 | 286.1 |
| 285 | 13.5 | 4.9 | 4094.5 | 488.0 | 36.1 | 21.9 | 213.7 | 8.3 | 1135.7 | 126.1 | 20.9 | — | 284.6 | 286.9 |
| 286 | 13.5 | 4.9 | 4106.2 | 489.4 | 36.2 | 22.0 | 214.7 | 8.4 | 1139.1 | 126.5 | 21.0 | — | 285.5 | 287.8 |
| 287 | 13.6 | 5.0 | 4118.0 | 490.8 | 36.3 | 22.0 | 215.6 | 8.4 | 1142.4 | 126.9 | 21.2 | — | 286.3 | 288.6 |
| 288 | 13.6 | 5.0 | 4129.7 | 492.2 | 36.4 | 22.1 | 216.6 | 8.4 | 1145.8 | 127.3 | 21.3 | — | 287.1 | 289.5 |
| 289 | 13.7 | 5.0 | 4141.5 | 493.6 | 36.5 | 22.2 | 217.5 | 8.5 | 1149.2 | 127.6 | 21.4 | — | 288.0 | 290.3 |
| 290 | 13.7 | 5.0 | 4153.2 | 495.0 | 36.6 | 22.2 | 218.5 | 8.5 | 1152.5 | 128.0 | 21.5 | — | 288.8 | 291.2 |
| 291 | 13.8 | 5.0 | 4164.9 | 496.4 | 36.8 | 22.3 | 219.4 | 8.6 | 1155.9 | 128.4 | 21.7 | — | 289.7 | 292.0 |
| 292 | 13.8 | 5.0 | 4176.6 | 497.8 | 36.9 | 22.4 | 220.4 | 8.6 | 1159.3 | 128.8 | 21.8 | — | 290.5 | 292.9 |
| 293 | 13.9 | 5.0 | 4188.3 | 499.2 | 37.0 | 22.4 | 221.4 | 8.6 | 1162.6 | 129.1 | 21.9 | — | 291.4 | 293.7 |
| 294 | 13.9 | 5.1 | 4200.1 | 500.6 | 37.1 | 22.5 | 222.3 | 8.7 | 1166.0 | 129.5 | 22.0 | — | 292.2 | 294.6 |
| 295 | 14.0 | 5.1 | 4211.7 | 502.0 | 37.2 | 22.6 | 223.3 | 8.7 | 1169.3 | 129.9 | 22.2 | — | 293.0 | 295.4 |
| 296 | 14.1 | 5.1 | 4223.4 | 503.4 | 37.4 | 22.6 | 224.3 | 8.7 | 1172.7 | 130.2 | 22.3 | — | 293.9 | 296.3 |
| 297 | 14.1 | 5.1 | 4235.1 | 504.8 | 37.5 | 22.7 | 225.2 | 8.8 | 1176.0 | 130.6 | 22.4 | — | 294.7 | 297.1 |
| 298 | 14.2 | 5.1 | 4246.8 | 506.2 | 37.6 | 22.8 | 226.2 | 8.8 | 1179.4 | 131.0 | 22.6 | — | 295.6 | 298.0 |
| 299 | 14.2 | 5.1 | 4258.5 | 507.6 | 37.7 | 22.8 | 227.1 | 8.9 | 1182.7 | 131.4 | 22.7 | — | 296.4 | 298.8 |
| 300 | 14.3 | 5.1 | 4270.1 | 509.0 | 37.8 | 22.9 | 228.1 | 8.9 | 1186.1 | 131.7 | 22.8 | — | 297.2 | 299.7 |
| 301 | 14.3 | 5.1 | 4281.8 | 510.4 | 38.0 | 23.0 | 229.1 | 8.9 | 1189.4 | 132.1 | 23.0 | — | 298.1 | 300.5 |
| 302 | 14.4 | 5.2 | 4293.4 | 511.8 | 38.1 | 23.0 | 230.1 | 9.0 | 1192.8 | 132.5 | 23.1 | — | 298.9 | 301.4 |
| 303 | 14.4 | 5.2 | 4305.1 | 513.1 | 38.2 | 23.1 | 231.0 | 9.0 | 1196.1 | 132.8 | 23.2 | — | 299.8 | 302.2 |
| 304 | 14.5 | 5.2 | 4316.7 | 514.5 | 38.3 | 23.2 | 232.0 | 9.0 | 1199.4 | 133.2 | 23.4 | — | 300.6 | 303.1 |
| 305 | 14.5 | 5.2 | 4328.3 | 515.9 | 38.4 | 23.2 | 233.0 | 9.1 | 1202.8 | 133.6 | 23.5 | — | 301.4 | 303.9 |
| 306 | 14.6 | 5.2 | 4339.9 | 517.3 | 38.5 | 23.3 | 233.9 | 9.1 | 1206.1 | 134.0 | 23.6 | — | 302.3 | 304.8 |
| 307 | 14.6 | 5.2 | 4351.6 | 518.7 | 38.7 | 23.4 | 234.9 | 9.2 | 1209.4 | 134.3 | 23.8 | — | 303.1 | 305.6 |
| 308 | 14.7 | 5.2 | 4363.2 | 520.1 | 38.8 | 23.4 | 235.9 | 9.2 | 1212.8 | 134.7 | 23.9 | — | 304.0 | 306.4 |
| 309 | 14.7 | 5.3 | 4374.8 | 521.4 | 38.9 | 23.5 | 236.9 | 9.2 | 1216.1 | 135.1 | 24.0 | — | 304.8 | 307.3 |
| 310 | 14.8 | 5.3 | 4386.3 | 522.8 | 39.0 | 23.5 | 237.8 | 9.3 | 1219.4 | 135.4 | 24.2 | — | 305.6 | 308.1 |
| 311 | 14.9 | 5.3 | 4397.9 | 524.2 | 39.1 | 23.6 | 238.8 | 9.3 | 1222.8 | 135.8 | 24.3 | — | 306.5 | 309.0 |
| 312 | 14.9 | 5.3 | 4409.5 | 525.6 | 39.3 | 23.7 | 239.8 | 9.3 | 1226.1 | 136.2 | 24.4 | — | 307.3 | 309.8 |
| 313 | 15.0 | 5.3 | 4421.1 | 527.0 | 39.4 | 23.7 | 240.8 | 9.4 | 1229.4 | 136.5 | 24.6 | — | 308.1 | 310.6 |
| 314 | 15.0 | 5.3 | 4432.6 | 528.3 | 39.5 | 23.8 | 241.8 | 9.4 | 1232.7 | 136.9 | 24.7 | — | 309.0 | 311.5 |
| 315 | 15.1 | 5.3 | 4444.2 | 529.7 | 39.6 | 23.9 | 242.7 | 9.5 | 1236.0 | 137.3 | 24.8 | — | 309.8 | 312.3 |
| 316 | 15.1 | 5.3 | 4455.8 | 531.1 | 39.7 | 23.9 | 243.7 | 9.5 | 1239.4 | 137.7 | 25.0 | — | 310.6 | 313.2 |
| 317 | 15.2 | 5.4 | 4467.3 | 532.5 | 39.9 | 24.0 | 244.7 | 9.5 | 1242.7 | 138.0 | 25.1 | — | 311.5 | 314.0 |
| 318 | 15.2 | 5.4 | 4478.8 | 533.9 | 40.0 | 24.1 | 245.7 | 9.6 | 1246.0 | 138.4 | 25.2 | — | 312.3 | 314.8 |
| 319 | 15.3 | 5.4 | 4490.4 | 535.2 | 40.1 | 24.1 | 246.7 | 9.6 | 1249.3 | 138.8 | 25.4 | — | 313.1 | 315.7 |
| 320 | 15.3 | 5.4 | 4501.9 | 536.6 | 40.2 | 24.2 | 247.6 | 9.7 | 1252.6 | 139.1 | 25.5 | — | 314.0 | 316.5 |
| 321 | 15.4 | 5.4 | 4513.4 | 538.0 | 40.3 | 24.3 | 248.6 | 9.7 | 1255.9 | 139.5 | 25.6 | — | 314.8 | 317.4 |
| 322 | 15.5 | 5.4 | 4524.9 | 539.3 | 40.4 | 24.3 | 249.6 | 9.7 | 1259.2 | 139.9 | 25.8 | — | 315.6 | 318.2 |
| 323 | 15.5 | 5.4 | 4536.4 | 540.7 | 40.6 | 24.4 | 250.6 | 9.8 | 1262.6 | 140.2 | 25.9 | — | 316.4 | 319.0 |
| 324 | 15.6 | 5.5 | 4547.9 | 542.1 | 40.7 | 24.5 | 251.6 | 9.8 | 1265.9 | 140.6 | 26.1 | — | 317.3 | 319.9 |
| 325 | 15.6 | 5.5 | 4559.4 | 543.5 | 40.8 | 24.5 | 252.6 | 9.8 | 1269.2 | 141.0 | 26.2 | — | 318.1 | 320.7 |
| 326 | 15.7 | 5.5 | 4570.9 | 544.8 | 40.9 | 24.6 | 253.6 | 9.9 | 1272.5 | 141.3 | 26.3 | — | 318.9 | 321.5 |
| 327 | 15.7 | 5.5 | 4582.4 | 546.2 | 41.0 | 24.6 | 254.6 | 9.9 | 1275.8 | 141.7 | 26.5 | — | 319.8 | 322.4 |
| 328 | 15.8 | 5.5 | 4593.9 | 547.6 | 41.2 | 24.7 | 255.6 | 10.0 | 1279.1 | 142.1 | 26.6 | — | 320.6 | 323.2 |
| 329 | 15.8 | 5.5 | 4605.3 | 548.9 | 41.3 | 24.8 | 256.5 | 10.0 | 1282.4 | 142.4 | 26.8 | — | 321.4 | 324.1 |

**CALCULATED TOTAL RECOVERABLE METALS EFFLUENT LIMITATIONS FOR FRESHWATER DISCHARGES**

| Hardness value | Cadmium | | Chromium (III) | | Copper | | Lead | | Nickel | | Silver | | Zinc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly |
| 330 | 15.9 | 5.5 | 4616.8 | 550.3 | 41.4 | 24.8 | 257.5 | 10.0 | 1285.7 | 142.8 | 26.9 | — | 322.2 | 324.9 |
| 331 | 15.9 | 5.5 | 4628.3 | 551.7 | 41.5 | 24.9 | 258.5 | 10.1 | 1289.0 | 143.2 | 27.0 | — | 323.1 | 325.7 |
| 332 | 16.0 | 5.6 | 4639.7 | 553.0 | 41.6 | 25.0 | 259.5 | 10.1 | 1292.3 | 143.5 | 27.2 | — | 323.9 | 326.6 |
| 333 | 16.0 | 5.6 | 4651.1 | 554.4 | 41.7 | 25.0 | 260.5 | 10.2 | 1295.5 | 143.9 | 27.3 | — | 324.7 | 327.4 |
| 334 | 16.1 | 5.6 | 4662.6 | 555.8 | 41.9 | 25.1 | 261.5 | 10.2 | 1298.8 | 144.3 | 27.5 | — | 325.6 | 328.2 |
| 335 | 16.2 | 5.6 | 4674.0 | 557.1 | 42.0 | 25.2 | 262.5 | 10.2 | 1302.1 | 144.6 | 27.6 | — | 326.4 | 329.1 |
| 336 | 16.2 | 5.6 | 4685.4 | 558.5 | 42.1 | 25.2 | 263.5 | 10.3 | 1305.4 | 145.0 | 27.7 | — | 327.2 | 329.9 |
| 337 | 16.3 | 5.6 | 4696.9 | 559.8 | 42.2 | 25.3 | 264.5 | 10.3 | 1308.7 | 145.4 | 27.9 | — | 328.0 | 330.7 |
| 338 | 16.3 | 5.6 | 4708.3 | 561.2 | 42.3 | 25.4 | 265.5 | 10.3 | 1312.0 | 145.7 | 28.0 | — | 328.9 | 331.5 |
| 339 | 16.4 | 5.6 | 4719.7 | 562.6 | 42.5 | 25.4 | 266.5 | 10.4 | 1315.3 | 146.1 | 28.2 | — | 329.7 | 332.4 |
| 340 | 16.4 | 5.7 | 4731.1 | 563.9 | 42.6 | 25.5 | 267.5 | 10.4 | 1318.5 | 146.4 | 28.3 | — | 330.5 | 333.2 |
| 341 | 16.5 | 5.7 | 4742.5 | 565.3 | 42.7 | 25.5 | 268.5 | 10.5 | 1321.8 | 146.8 | 28.5 | — | 331.3 | 334.0 |
| 342 | 16.5 | 5.7 | 4753.8 | 566.6 | 42.8 | 25.6 | 269.5 | 10.5 | 1325.1 | 147.2 | 28.6 | — | 332.2 | 334.9 |
| 343 | 16.6 | 5.7 | 4765.2 | 568.0 | 42.9 | 25.7 | 270.5 | 10.5 | 1328.4 | 147.5 | 28.7 | — | 333.0 | 335.7 |
| 344 | 16.6 | 5.7 | 4776.6 | 569.3 | 43.0 | 25.7 | 271.5 | 10.6 | 1331.7 | 147.9 | 28.9 | — | 333.8 | 336.5 |
| 345 | 16.7 | 5.7 | 4788.0 | 570.7 | 43.2 | 25.8 | 272.5 | 10.6 | 1334.9 | 148.3 | 29.0 | — | 334.6 | 337.4 |
| 346 | 16.8 | 5.7 | 4799.3 | 572.1 | 43.3 | 25.9 | 273.5 | 10.7 | 1338.2 | 148.6 | 29.2 | — | 335.4 | 338.2 |
| 347 | 16.8 | 5.8 | 4810.7 | 573.4 | 43.4 | 25.9 | 274.5 | 10.7 | 1341.5 | 149.0 | 29.3 | — | 336.3 | 339.0 |
| 348 | 16.9 | 5.8 | 4822.0 | 574.8 | 43.5 | 26.0 | 275.6 | 10.7 | 1344.7 | 149.4 | 29.5 | — | 337.1 | 339.8 |
| 349 | 16.9 | 5.8 | 4833.4 | 576.1 | 43.6 | 26.1 | 276.6 | 10.8 | 1348.0 | 149.7 | 29.6 | — | 337.9 | 340.7 |
| 350 | 17.0 | 5.8 | 4844.7 | 577.5 | 43.8 | 26.1 | 277.6 | 10.8 | 1351.3 | 150.1 | 29.8 | — | 338.7 | 341.5 |
| 351 | 17.0 | 5.8 | 4856.1 | 578.8 | 43.9 | 26.2 | 278.6 | 10.9 | 1354.5 | 150.4 | 29.9 | — | 339.5 | 342.3 |
| 352 | 17.1 | 5.8 | 4867.4 | 580.2 | 44.0 | 26.2 | 279.6 | 10.9 | 1357.8 | 150.8 | 30.1 | — | 340.4 | 343.1 |
| 353 | 17.1 | 5.8 | 4878.7 | 581.5 | 44.1 | 26.3 | 280.6 | 10.9 | 1361.1 | 151.2 | 30.2 | — | 341.2 | 344.0 |
| 354 | 17.2 | 5.8 | 4890.0 | 582.9 | 44.2 | 26.4 | 281.6 | 11.0 | 1364.3 | 151.5 | 30.3 | — | 342.0 | 344.8 |
| 355 | 17.2 | 5.9 | 4901.3 | 584.2 | 44.3 | 26.4 | 282.6 | 11.0 | 1367.6 | 151.9 | 30.5 | — | 342.8 | 345.6 |
| 356 | 17.3 | 5.9 | 4912.6 | 585.6 | 44.5 | 26.5 | 283.6 | 11.1 | 1370.9 | 152.3 | 30.6 | — | 343.6 | 346.4 |
| 357 | 17.4 | 5.9 | 4923.9 | 586.9 | 44.6 | 26.6 | 284.7 | 11.1 | 1374.1 | 152.6 | 30.8 | — | 344.5 | 347.3 |
| 358 | 17.4 | 5.9 | 4935.2 | 588.3 | 44.7 | 26.6 | 285.7 | 11.1 | 1377.4 | 153.0 | 30.9 | — | 345.3 | 348.1 |
| 359 | 17.5 | 5.9 | 4946.5 | 589.6 | 44.8 | 26.7 | 286.7 | 11.2 | 1380.6 | 153.3 | 31.1 | — | 346.1 | 348.9 |
| 360 | 17.5 | 5.9 | 4957.8 | 590.9 | 44.9 | 26.8 | 287.7 | 11.2 | 1383.9 | 153.7 | 31.2 | — | 346.9 | 349.7 |
| 361 | 17.6 | 5.9 | 4969.1 | 592.3 | 45.0 | 26.8 | 288.7 | 11.3 | 1387.1 | 154.1 | 31.4 | — | 347.7 | 350.6 |
| 362 | 17.6 | 5.9 | 4980.4 | 593.6 | 45.2 | 26.9 | 289.7 | 11.3 | 1390.4 | 154.4 | 31.5 | — | 348.5 | 351.4 |
| 363 | 17.7 | 6.0 | 4991.6 | 595.0 | 45.3 | 26.9 | 290.8 | 11.3 | 1393.6 | 154.8 | 31.7 | — | 349.4 | 352.2 |
| 364 | 17.7 | 6.0 | 5002.9 | 596.3 | 45.4 | 27.0 | 291.8 | 11.4 | 1396.9 | 155.1 | 31.8 | — | 350.2 | 353.0 |
| 365 | 17.8 | 6.0 | 5014.1 | 597.7 | 45.5 | 27.1 | 292.8 | 11.4 | 1400.1 | 155.5 | 32.0 | — | 351.0 | 353.9 |
| 366 | 17.9 | 6.0 | 5025.4 | 599.0 | 45.6 | 27.1 | 293.8 | 11.5 | 1403.4 | 155.9 | 32.1 | — | 351.8 | 354.7 |
| 367 | 17.9 | 6.0 | 5036.6 | 600.3 | 45.8 | 27.2 | 294.8 | 11.5 | 1406.6 | 156.2 | 32.3 | — | 352.6 | 355.5 |
| 368 | 18.0 | 6.0 | 5047.9 | 601.7 | 45.9 | 27.3 | 295.9 | 11.5 | 1409.8 | 156.6 | 32.4 | — | 353.4 | 356.3 |
| 369 | 18.0 | 6.0 | 5059.1 | 603.0 | 46.0 | 27.3 | 296.9 | 11.6 | 1413.1 | 157.0 | 32.6 | — | 354.2 | 357.1 |
| 370 | 18.1 | 6.0 | 5070.3 | 604.4 | 46.1 | 27.4 | 297.9 | 11.6 | 1416.3 | 157.3 | 32.7 | — | 355.1 | 358.0 |
| 371 | 18.1 | 6.1 | 5081.5 | 605.7 | 46.2 | 27.5 | 298.9 | 11.6 | 1419.6 | 157.7 | 32.9 | — | 355.9 | 358.8 |
| 372 | 18.2 | 6.1 | 5092.8 | 607.0 | 46.3 | 27.5 | 300.0 | 11.7 | 1422.8 | 158.0 | 33.0 | — | 356.7 | 359.6 |
| 373 | 18.2 | 6.1 | 5104.0 | 608.4 | 46.5 | 27.6 | 301.0 | 11.7 | 1426.0 | 158.4 | 33.2 | — | 357.5 | 360.4 |
| 374 | 18.3 | 6.1 | 5115.2 | 609.7 | 46.6 | 27.6 | 302.0 | 11.8 | 1429.3 | 158.7 | 33.4 | — | 358.3 | 361.2 |
| 375 | 18.3 | 6.1 | 5126.4 | 611.0 | 46.7 | 27.7 | 303.1 | 11.8 | 1432.5 | 159.1 | 33.5 | — | 359.1 | 362.1 |
| 376 | 18.4 | 6.1 | 5137.6 | 612.4 | 46.8 | 27.8 | 304.1 | 11.8 | 1435.7 | 159.5 | 33.7 | — | 359.9 | 362.9 |

**CALCULATED TOTAL RECOVERABLE METALS EFFLUENT LIMITATIONS FOR FRESHWATER DISCHARGES**

| Hardness value | Cadmium | | Chromium (III) | | Copper | | Lead | | Nickel | | Silver | | Zinc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly | Max Daily | Ave. Monthly |
| 377 | 18.5 | 6.1 | 5148.7 | 613.7 | 46.9 | 27.8 | 305.1 | 11.9 | 1439.0 | 159.8 | 33.8 | — | 360.7 | 363.7 |
| 378 | 18.5 | 6.2 | 5159.9 | 615.0 | 47.0 | 27.9 | 306.1 | 11.9 | 1442.2 | 160.2 | 34.0 | — | 361.5 | 364.5 |
| 379 | 18.6 | 6.2 | 5171.1 | 616.4 | 47.2 | 28.0 | 307.2 | 12.0 | 1445.4 | 160.5 | 34.1 | — | 362.4 | 365.3 |
| 380 | 18.6 | 6.2 | 5182.3 | 617.7 | 47.3 | 28.0 | 308.2 | 12.0 | 1448.6 | 160.9 | 34.3 | — | 363.2 | 366.1 |
| 381 | 18.7 | 6.2 | 5193.4 | 619.0 | 47.4 | 28.1 | 309.2 | 12.1 | 1451.9 | 161.3 | 34.4 | — | 364.0 | 367.0 |
| 382 | 18.7 | 6.2 | 5204.6 | 620.4 | 47.5 | 28.1 | 310.3 | 12.1 | 1455.1 | 161.6 | 34.6 | — | 364.8 | 367.8 |
| 383 | 18.8 | 6.2 | 5215.8 | 621.7 | 47.6 | 28.2 | 311.3 | 12.1 | 1458.3 | 162.0 | 34.7 | — | 365.6 | 368.6 |
| 384 | 18.8 | 6.2 | 5226.9 | 623.0 | 47.7 | 28.3 | 312.3 | 12.2 | 1461.5 | 162.3 | 34.9 | — | 366.4 | 369.4 |
| 385 | 18.9 | 6.2 | 5238.1 | 624.3 | 47.9 | 28.3 | 313.4 | 12.2 | 1464.8 | 162.7 | 35.1 | — | 367.2 | 370.2 |
| 386 | 19.0 | 6.3 | 5249.2 | 625.7 | 48.0 | 28.4 | 314.4 | 12.3 | 1468.0 | 163.0 | 35.2 | — | 368.0 | 371.0 |
| 387 | 19.0 | 6.3 | 5260.3 | 627.0 | 48.1 | 28.5 | 315.5 | 12.3 | 1471.2 | 163.4 | 35.4 | — | 368.8 | 371.8 |
| 388 | 19.1 | 6.3 | 5271.5 | 628.3 | 48.2 | 28.5 | 316.5 | 12.3 | 1474.4 | 163.8 | 35.5 | — | 369.6 | 372.7 |
| 389 | 19.1 | 6.3 | 5282.6 | 629.7 | 48.3 | 28.6 | 317.5 | 12.4 | 1477.6 | 164.1 | 35.7 | — | 370.4 | 373.5 |
| 390 | 19.2 | 6.3 | 5293.7 | 631.0 | 48.4 | 28.7 | 318.6 | 12.4 | 1480.8 | 164.5 | 35.8 | — | 371.2 | 374.3 |
| 391 | 19.2 | 6.3 | 5304.8 | 632.3 | 48.6 | 28.7 | 319.6 | 12.5 | 1484.0 | 164.8 | 36.0 | — | 372.1 | 375.1 |
| 392 | 19.3 | 6.3 | 5315.9 | 633.6 | 48.7 | 28.8 | 320.7 | 12.5 | 1487.3 | 165.2 | 36.2 | — | 372.9 | 375.9 |
| 393 | 19.3 | 6.3 | 5327.0 | 635.0 | 48.8 | 28.8 | 321.7 | 12.5 | 1490.5 | 165.5 | 36.3 | — | 373.7 | 376.7 |
| 394 | 19.4 | 6.4 | 5338.1 | 636.3 | 48.9 | 28.9 | 322.7 | 12.6 | 1493.7 | 165.9 | 36.5 | — | 374.5 | 377.5 |
| 395 | 19.5 | 6.4 | 5349.2 | 637.6 | 49.0 | 29.0 | 323.8 | 12.6 | 1496.9 | 166.3 | 36.6 | — | 375.3 | 378.3 |
| 396 | 19.5 | 6.4 | 5360.3 | 638.9 | 49.1 | 29.0 | 324.8 | 12.7 | 1500.1 | 166.6 | 36.8 | — | 376.1 | 379.2 |
| 397 | 19.6 | 6.4 | 5371.4 | 640.2 | 49.3 | 29.1 | 325.9 | 12.7 | 1503.3 | 167.0 | 37.0 | — | 376.9 | 380.0 |
| 398 | 19.6 | 6.4 | 5382.5 | 641.6 | 49.4 | 29.2 | 326.9 | 12.7 | 1506.5 | 167.3 | 37.1 | — | 377.7 | 380.8 |
| 399 | 19.7 | 6.4 | 5393.6 | 642.9 | 49.5 | 29.2 | 328.0 | 12.8 | 1509.7 | 167.7 | 37.3 | — | 378.5 | 381.6 |
| 400 | 19.7 | 6.4 | 5404.6 | 644.2 | 49.6 | 29.3 | 329.0 | 12.8 | 1512.9 | 168.0 | 37.4 | — | 379.3 | 382.4 |

# 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 Regional Water Quality Control Board (RWQCB), State Water Resources Control Board (SWRCB), 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 13383(c)*]:

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)*];

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 Regional 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)(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)(B)*]; and

   c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below [*40 CFR §122.41(m)(4)(C)*].

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional 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 Section 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 permittee. 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 Section 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)(i)*];

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) [*40 CFR Section 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 Regional Water Board. The Regional 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)*] [*40 CFR §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)*] [*40 CFR §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 five 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 Regional 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 Regional Water Board, SWRCB, or USEPA within a reasonable time, any information which the Regional Water Board, SWRCB, 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 Regional Water Board, SWRCB, or USEPA copies of records required to be kept by this Order [*40 CFR §122.41(h)*] [*CWC 13267*].

### B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional 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, and V.B.5 below [*40 CFR Section 122.41(k)*].

2. 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 Section 122.22(a)(3)].

3. All reports required by this Order and other information requested by the Regional 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 Section 122.22(b)(1)*];

   b. The authorization specified 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 Section 122.22(b)(2)*]; and

   c. The written authorization is submitted to the Regional Water Board and State Water Board [*40 CFR Section 122.22(b)(3)*].

4. 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 Regional Water Board, State Water Board or USEPA prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR Section 122.22(c)].

5. 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 Section 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 §122.41(l)(4)*].

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or SWRCB 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 Regional 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 Regional 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 Regional 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. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1) [*40 CFR §122.41(l)(1)(ii)*].

3. 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 Regional Water Board or SWRCB 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 Section 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 Regional Water Board, SWRCB, or USEPA, the Discharger shall promptly submit such facts or information [*40 CFR §122.41(l)(8)*].

## VI. STANDARD PROVISIONS – ENFORCEMENT

**A.** The Regional 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. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following [*40 CFR Section 122.42(b)*]:

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [*40 CFR Section 122.42(b)(1)*]; and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order [*40 CFR Section 122.42(b)(2)*].

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW [*40 CFR Section 122.42(b)(3)*].

## Attachment E – Monitoring and Reporting Program

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## Attachment E – Monitoring and Reporting Program (MRP)

The Code of Federal Regulations (CFR) at 40 CFR §122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the federal and California regulations.

## I. GENERAL MONITORING PROVISIONS

### A. General Monitoring Provision

1. All sampling and sample preservation shall be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association).

2. All laboratory analyses shall be performed in accordance with test procedures under 40 CFR 136 (revised as of April 11, 2007) "Guidelines Establishing Test Procedures for the Analysis of Pollutants," promulgated by the United States Environmental Protection Agency (EPA), unless otherwise specified in this MRP. In addition, the Regional Water Board and/or EPA, at their discretion, may specify test methods that are more sensitive than those specified in 40 CFR 136.

3. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health in accordance with the provision of Water Code Section 13176, and must include quality assurance/quality control data with their reports, or EPA or at laboratories approved by the Regional Water Board's Executive Officer.

4. Whenever the Discharger monitors any pollutant more frequently than is required by this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharge monitoring report specified by the Executive Officer.

5. In conformance with federal regulations 40 CFR 122.45(c), analyses to determine compliance with the effluent limitations for metals shall be conducted using the total recoverable method. For Chromium (VI), the dissolved method in conformance with 40 CFR 136 may be used to measure compliance with the Chromium (VI) limitation.

6. For effluent wastewater monitoring:

   a. The Discharger shall require its testing laboratory to calibrate the analytical system down to the minimum level (ML)[1] specified in Attachment "H" for priority pollutants with effluent limitations in this Order, unless an alternative reporting level is approved by the Regional Water Board's Executive Officer. When there is more than one ML value for a given substance, the Discharger shall use the ML values, and their associated analytical methods, listed in Attachment "H" that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the lowest ML value and its associated analytical method, listed in Attachment "H" shall be used. Any internal quality control data associated with the sample must be reported when requested by the Executive Officer. The Regional Water Board will reject the quantified laboratory data if quality control data is unavailable or unacceptable.

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

      (1) Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
      (2) Sample results less than the reported ML, but greater than or equal to the laboratory's current Method Detection Limit (MDL)[2], shall be reported as "Detected, but Not Quantified," or "DNQ." The estimated chemical concentration of the sample shall also be reported.
      (3) Sample results not detected above the laboratory's MDL shall be reported as "not detected" or "ND."

   c. The Discharger shall submit to the Regional Water Board reports necessary to determine compliance with effluent limitations in this Order and shall follow the chemical nomenclature and sequential order of priority pollutant constituents shown in Attachment "G" – Priority Pollutant Lists. The Discharger shall report with each sample result:

      (1) The reporting level achieved by the testing laboratory; and

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1 *Minimum level is the concentration at which the entire analytical system must give a recognizable signal and acceptable 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.*

2 *MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analytical concentration is greater than zero, as defined in 40 CFR 136, Appendix B, revised as of April 11, 2007.*

(2) The laboratory's current MDL, as determined by the procedure found in 40 CFR 136 (revised as of April 11, 2007).

d. For receiving water monitoring and for those priority pollutants without effluent limitations, the Discharger shall require its testing laboratory to quantify constituent concentrations to the lowest achievable MDL as determined by the procedure found in 40 CFR 136 (revised as of April 11, 2007). In situations where the most stringent applicable receiving water objective (freshwater or human health (consumption of organisms only), as specified for that pollutant in 40 CFR 131.38[3] is below the minimum level value specified in Attachment "H" and the Discharger cannot achieve an MDL value for that pollutant below the ML value, the Discharger shall submit justification why a lower MDL value cannot be achieved. Justification shall be submitted together with monthly monitoring reports.

7. For non-priority pollutants monitoring, all analytical data shall be reported with method detection limits, as determined by the procedure found in 40 CFR 136 (revised as of April 11, 2007).

8. The Discharger shall have, and implement an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of ten percent (10%) of the samples, or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by the Regional Water Board or EPA, the Discharger will participate in the NPDES discharge monitoring report QA performance study.

9. For every item of monitoring data where the requirements are not met, the monitoring report shall include a statement discussing the reasons for noncompliance, the actions undertaken or proposed that will bring the discharge into full compliance with requirements at the earliest time, and an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when compliance with the time schedule has been achieved.

10. The Discharger shall assure that records of all monitoring information are maintained and accessible for a period of at least five years (this retention period supercedes the retention period specified in Section IV.A. of Attachment D) from the date of the sample, report, or application. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or by the request of the Regional Water Board at any time. Records of monitoring information shall include:

    a. The information listed in Attachment D- IV Standard Provisions – Records, subparagraph B. of this Order;
    b. The laboratory which performed the analyses;
    c. The date(s) analyses were performed;

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3 *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*

d. The individual(s) who performed the analyses;
e. The modification(s) to analytical techniques or methods used;
f. All sampling and analytical results, including
   (1) Units of measurement used;
   (2) Minimum reporting level for the analysis (minimum level);
   (3) Results less than the reporting level but above the method detection limit (MDL);
   (4) Data qualifiers and a description of the qualifiers;
   (5) Quality control test results (and a written copy of the laboratory quality assurance plan);
   (6) Dilution factors, if used; and
   (7) Sample matrix type.
g. All monitoring equipment calibration and maintenance records;
h. All original strip charts from continuous monitoring devices;
i. All data used to complete the application for this Order; and,
j. Copies of all reports required by this Order.
k. Electronic data and information generated by the Supervisory Control And Data Acquisition (SCADA) System.

11. The flow measurement system shall be calibrated at least once per year or more frequently, to ensure continued accuracy.

12. 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. In the event that continuous monitoring equipment is out of service for greater than a 24-hour period, the Discharger shall obtain a representative grab sample each day the equipment is out of service. The Discharger shall correct the cause(s) of failure of the continuous monitoring equipment as soon as practicable. In its monitoring report, the Discharger shall specify the period(s) during which the equipment was out of service and if the problem has not been corrected, shall identify the steps which the Discharger is taking or proposes to take to bring the equipment back into service and the schedule for these actions.

13. Monitoring and reporting shall be in accordance with the following:

    a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

    b. The monitoring and reporting of influent, effluent, and sludge shall be done more frequently as necessary to maintain compliance with this Order and or as specified in this order.

    c. Whenever the Discharger monitors any pollutant more frequently than is required by this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharge monitoring report specified by the Executive Officer.

    d. A "grab" sample is defined as any individual sample collected in less than 15 minutes.

e. A composite sample is defined as a combination of no fewer than eight individual grab samples obtained over the specified sampling period. The volume of each individual grab sample shall be proportional to the discharge flow rate at the time of sampling. The compositing period shall equal the specific sampling period, or 24 hours, if no period is specified.

f. Daily samples shall be collected on each day of the week.

g. Monthly samples shall be collected on any representative day of each month.

h. Quarterly samples: A representative sample shall be taken on any representative day of January, April, July, and October and test results shall be reported in either micrograms/liter (ug/L) or milligrams/liter (mg/L), as appropriate, by the last day of the month following the month that the sample was taken.

i. Semi-annual samples shall be collected in January and July.

j. Annual samples shall be collected in accordance with the following schedule:

**Table 1. Annual Sampling Schedule**

| Year | Annual Samples |
|---|---|
| 2007 | October |
| 2008 | January |
| 2009 | April |
| 2010 | July |
| 2011 | October |
| 2012 | January |

14. The discharger shall multiply each measured or estimated congener concentration by its respective toxic equivalency factor (TEF) as shown below and report the sum of these values. The discharger shall use the U.S. EPA approved test method 1613 for dioxins and furans. Dioxin testing is required for new dischargers only.

**Table 2. Toxic Equivalency Factors for 2,3,7, 8-TCDD Equivalents**

| Congener | TEF |
|---|---|
| 2,3,7,8-TetraCDD | 1 |
| 1,2,3,7,8-PentaCDD | 1.0 |
| 1,2,3,4,7,8-HexaCDD | 0.1 |
| 1,2,3,6,7,8-HexaCDD | 0.1 |
| 1,2,3,7,8,9-HexaCDD | 0.1 |
| 1,2,3,4,6,7,8-HeptaCDD | 0.01 |
| OctaCDD | 0.0001 |
| 2,3,7,8-TetraCDF | 0.1 |
| 1,2,3,7,8-PentaCDF | 0.05 |
| 2,3,4,7,8-PentaCDF | 0.5 |
| 1,2,3,4,7,8-HexaCDF | 0.1 |
| 1,2,3,6,7,8-HexaCDF | 0.1 |
| 1,2,3,7,8,9-HexaCDF | 0.1 |
| 2,3,4,6,7,8-HexaCDF | 0.1 |
| 1,2,3,4,6,7,8-HeptaCDF | 0.01 |
| 1,2,3,4,7,8,9-HeptaCDF | 0.01 |
| OctaCDF | 0.0001 |

### B. Laboratory Certification

Laboratories analyzing monitoring samples shall be certified by the Department of Public Health, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

## II. MONITORING LOCATIONS

The Discharger shall establish monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order: The sample station shall be located where representative samples can be obtained before the extracted groundwater is treated and discharged. The volume of daily extracted groundwater shall be recorded daily on a permanent log.

## III. INFLUENT MONITORING REQUIREMENTS

A grab[4] sample of the influent to the treatment system shall be monitored on a monthly basis for compounds using EPA method 8260B and for total petroleum hydrocarbons.

## IV. EFFLUENT MONITORING REQUIREMENTS

**A.** The following shall constitute the effluent monitoring program:

**Table 3. Effluent Monitoring Program**

| Parameter[5] | Unit | Sample Type | Minimum Sapling Frequency | Required Analytical Test Method and Minimum Level, units, respectively |
|---|---|---|---|---|
| Flow | mgd | ------ | Daily for one week and weekly thereafter | See Section I.A.3. above, of this MRP |
| Total Petroleum Hydrocarbons[6] | µg/L | Grab | Weekly | EPA METHOD 8015 Modified |
| Benzene | µg/L | Grab | Weekly | EPA Method 8260 |
| Toluene | µg/L | Grab | Weekly | " |

4 *A "grab" sample is defined as any individual sample collected in less than 15 minutes.*

5 *For testing organic volatile compounds use EPA Method 8260B and report entire suite of detected constituents.*

6 *Total Petroleum Hydrocarbons by method 8015 modified for gasoline and/or diesel, if present.*

## Table 3. Effluent Monitoring Program

| Parameter[5] | Unit | Sample Type | Minimum Sapling Frequency | Required Analytical Test Method and Minimum Level, units, respectively |
|---|---|---|---|---|
| Xylene (total) | µg/L | Grab | Weekly | EPA Method 8260" |
| 1,2,3-Trichloropropane[7] | µg/L | Grab | Weekly | " |
| Ethylbenzene | µg/L | Grab | Weekly | EPA Method 8260 |
| Carbon Tetrachloride | µg/L | Grab | Weekly | " |
| Chloroform | µg/L | Grab | Weekly | " |
| Dichlorobromomethane | µg/L | Grab | Weekly | " |
| Methyl Ethyl Ketone | µg/L | Grab | Weekly | " |
| Methyl Isobutyl Ketone | µg/L | Grab | Weekly | " |
| Methyl Tertiary Butyl Ether (MTBE) | µg/L | Grab | Weekly | " |
| Naphthalene | µg/L | Grab | Weekly | " |
| Tetratchloroethylene (PCE) | µg/L | Grab | Weekly | " |
| Trichloroethylene (TCE) | µg/L | Grab | Weekly | " |
| 1,1-Dichloroethane (1,1-DCA) | µg/L | Grab | Weekly | " |
| 1,2- Dichloroethane (1,2-DCA) | µg/L | Grab | Weekly | " |
| 1,1-Dichloroethylene (1,1-DCE) | µg/L | Grab | Weekly | " |
| 1,2-Dichloroethylene (cis) | µg/L | Grab | Weekly | " |
| 1,2-Dichloroethylene (trans) | µg/L | Grab | Weekly | " |
| 1,1,1-Trichloroethane (1,1,1-TCA) | µg/L | Grab | Weekly | " |
| 1,4-Dioxane | µg/L | Grab | Weekly | " |
| Tert Butyl Alcohol (TBA) | µg/L | Grab | Weekly | " |
| Vinyl Chloride | µg/L | Grab | Weekly | " |
| Acrolein | µg/L | Grab | Weekly | " |
| Acrylonitrile | µg/L | Grab | Weekly | " |
| Ethylene Dibromide (EDB) | µg/L | Grab | Weekly | " |
| Perchlorate | µg/L | Grab | Weekly | See Section I.A. 2, 3. above, of this MRP |
| Total Phenols | mg/L | Grab | Weekly | See Section I.A. 2, 3. above, of this MRP |

7 *Sampling is not required if not present in the groundwater.*

## Table 3. Effluent Monitoring Program

| Parameter[5] | Unit | Sample Type | Minimum Sapling Frequency | Required Analytical Test Method and Minimum Level, units, respectively |
|---|---|---|---|---|
| Total Residual Chlorine[8] | mg/L | Grab | Weekly for the first month, monthly thereafter | See Section I.A.2. & I.A.3. above, of this MRP |
| Total Suspended Solids | mg/L | " | " | " |
| Oil and Grease | mg/L | " | " | " |
| Total Inorganic Nitrogen (TIN) | mg/L | " | " | " |
| Total Phosphorous | mg/L | " | " | " |
| Sulfide | mg/L | " | " | " |
| Coliform Organisms[9] | MPN | " | " | " |
| Methylene Blue Activated Substances (MBAS) | mg/L | " | " | " |
| Total DDT | µg/L | " | See paragraph IV.B., below | Reporting Level shall have prior approval by Regional Board Executive Officer or designee |
| Chlordane | µg/L | " | " | |
| Total PCBs | µg/L | " | " | |
| Toxaphene | µg/L | " | " | |
| Total Arsenic | µg/L | Grab | See paragraph IV.B., below | See Section I.A.2. & I.A.3. above, of this MRP |
| Total Recoverable Selenium | " | " | " | " |
| Total Recoverable Cadmium[10] | " | " | " | " |
| Total Recoverable & Dissolved Copper[9] | " | " | " | " |
| Total Recoverable & Dissolved Lead[9] | " | " | " | " |
| Total Recoverable Nickel[9] | " | " | " | " |
| Total Recoverable & Dissolved Zinc[9] | µg/L | " | " | " |
| pH | Std. Units | " | " | " |
| Temperature | °F | " | " | " |

8 *If chlorine is used for treatment or disinfection of wastes.*

9 *Only for groundwater dewatering projects in the vicinity of active sewer lines.*

10 *This constituent shall be monitored for four sampling events. If all four sample test results pursuant to IV.B., whichever is applicable, result in non-detection, no further monitoring for this constituent is required.*

## Table 3. Effluent Monitoring Program

| Parameter[5] | Unit | Sample Type | Minimum Sapling Frequency | Required Analytical Test Method and Minimum Level, units, respectively |
|---|---|---|---|---|
| Dissolved Oxygen | mg/L | " | " | " |
| Hardness | mg/L | " | " | " |
| Total Alkalinity | mg $CaCO_3$/L | " | " | " |
| Electrical Conductance | µmhos/cm | Grab | See paragraph IV.B., below | See Section I.A.2. & I.A.3. above, of this MRP |
| 2,3,7,8-TetraCDD | µg/L | Grab | Semi-annual (See I.A.13.i. & I.A.14.) | See Section I.A.2. & I.A.3. above, of this MRP |
| 1,2,3,7,8-PentaCDD | " | " | " | " |
| 1,2,3,4,7,8-HexaCDD | " | " | " | " |
| 1,2,3,6,7,8-HexaCDD | " | " | " | " |
| 1,2,3,7,8,9-HexaCDD | " | " | " | " |
| 1,2,3,4,6,7,8-HeptaCDD | " | " | " | " |
| OctaCDD | " | " | " | " |
| 2,3,7,8-TetraCDF | " | " | " | " |
| 1,2,3,7,8-PentaCDF | " | " | " | " |
| 2,3,4,7,8-PentaCDF | " | " | " | " |
| 1,2,3,4,7,8-HexaCDF | " | " | " | " |
| 1,2,3,6,7,8-HexaCDF | " | " | " | " |
| 1,2,3,7,8,9-HexaCDF | " | " | " | " |
| 2,3,4,6,7,8-HexaCDF | " | " | " | " |
| 1,2,3,4,6,7,8-HeptaCDF | " | " | " | " |
| 1,2,3,4,7,8,9-HeptaCDF | " | " | " | " |
| OctaCDF | µg/L | " | Semi-annual (See I.A.9.i. & I.A.10.) | " |
| Total Dissolved Solids | mg/L | Grab | Annually | " |
| Priority Pollutant (see Paragraph IV.3., below and Attachment "G" ) | µg/L | Grab | Once during the first year of remediation and upon renewal | See Section I.A.2. & I.A.3. above, of this MRP |
| Toxicity Testing (see Section V., below) | Pass/ Fail | Grab | At the initiation of the project and annually thereafter | See Section I.A.2. & I.A.3. above, of this MRP |

**B.** Minimum Frequency of Sampling & Analysis:

a. For projects that result in discharges of wastewater of 1 million gallons per day (mgd) or more, daily grab samples for four consecutive days shall be taken and analyzed individually for the constituent required to be monitored. Subsequent samples shall be taken and analyzed once quarterly, unless directed otherwise by the Regional Board Executive Officer. If the discharge does not last for more than a day, one composite sample taken for the duration of the discharge shall be analyzed;

b. For all other projects that result in discharges of wastewater of less than 1 mgd, weekly sampling and analyses shall be conducted for the first month. Subsequent sampling and analyses shall be conducted once quarterly, unless directed otherwise by the Regional Board Executive Officer.

**C.** Total nitrogen and total recoverable selenium offset monitoring and reporting:

a. Dischargers responsible for providing a nitrogen and/or selenium offset shall assure that sufficient monitoring of influent and effluent flow, total nitrogen including particulate organic nitrogen (specifically for San Joaquin Marsh wetlands ponds treatment system effluent discharges), and/or total selenium concentrations, as appropriate, from the facility(ies) providing the offset is conducted to demonstrate that the requisite offset(s) of the discharger's nitrogen and/or selenium load is achieved.

b. Provide documentation necessary to demonstrate that implementation of the offset(s) results in requisite reduction of total nitrogen and selenium as applicable.

c. If no offset occurs during the monitoring period, a letter to that effect shall be submitted in lieu of a monitoring report. The letter shall include a justification for the failure to provide the offset.

## V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

### A. Toxicity Monitoring Requirements

1. The discharger shall conduct acute toxicity testing as specified in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA/821-R-02-012, October 2002). Using a control and 100% effluent, static renewal survival (pass/fail) tests for 96 hours shall be conducted using the two test species specified in the table below corresponding to the onsite groundwater salinity, for the first required annual test under this permit. Based on the results, the Discharger shall determine the most sensitive test species. For the required succeeding toxicity monitoring, the Discharger shall use the most sensitive species with prior approval from the Regional Board Executive Officer. The Discharger shall submit documentation supporting the Discharger's determination of the most sensitive test species. The effluent tests must be conducted concurrent with reference toxicant tests. The effluent and reference toxicant tests must meet all test

acceptability criteria as specified in the acute manual[11]. If the test acceptability criteria are not achieved, then the discharger must re-sample and re-test within 14 days. The test results must be reported according to the acute manual chapter on Report Preparation, and shall be attached to the monitoring reports. The use of alternative methods for measuring acute toxicity may be considered by the Executive Officer on a case-by-case basis.

**Table 4. Test Species**

| If the Effluent or Receiving Water Salinity is: | Test Species | Test |
|---|---|---|
| Less than 1,000 mg/l salinity | Fathead minnow, *Pimphales promelas* | Larval survival test |
| | Water flea, *Ceriodaphnia dubia* | Survival test |
| Equal to or greater than 1,000 mg/l salinity | Silverside, *Menedia beryllina* | Survival Test |
| | Pacific mysid, *Holmesimysis costata* | Survival Test |

2. In the event that the required annual toxicity test fails, the Discharger shall stop any discharge of wastewater to waters of the U.S. and shall retest within 14 days of receiving the notice of failure and shall determine the cause of the failure. The Discharger shall stop any discharge of wastewater to waters of the U.S. until such time that the cause of toxicity is determined and appropriately addressed. Commencement of any discharge shall be with prior approval by the Executive Officer.

## VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE.

## VII. RECEIVING WATER MONITORING REQUIREMENTS – NOT APPLICABLE

## VIII. REPORTING REQUIREMENTS

### A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. All analytical data shall be reported with method detection limit[12] (MDLs) and with identification of either reporting level or limits of quantitation (LOQs).

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11 *"Acute manual" refers to protocols described in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA/821-R-02-012, October 2002).*

12 *The standardized test procedure to be used to determine the method detection limit (MDL) is given at Appendix B, 'Definition and Procedure for the Determination of the Method Detection Limit' of 40 CFR 136.*

3. Laboratory data for effluent samples must quantify each constituent down to the down to ML specified in Attachment "H" for priority pollutants. Any internal quality control data associated with the sample must be reported when requested by the Executive Officer. The Regional Water Board will reject the quantified laboratory data if quality control data is unavailable or unacceptable.

4. Discharge monitoring data shall be submitted in a format acceptable by the Regional Water Board. Specific reporting format may include preprinted forms and/or electronic media. The results of all monitoring required by this Order shall be reported to the Regional Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order.

5. The Discharger shall submit to the Regional Water Board reports necessary to determine compliance with effluent limitations in this Order and shall follow the chemical nomenclature and sequential order of priority pollutant constituents shown in Attachment "G" – Priority Pollutant Lists. The Discharger shall report with each sample result:

   a. The reporting level achieved by the testing laboratory; and
   b. The laboratory's current MDL, as determined by the procedure found in 40 CFR 136 (revised as of April 11, 2007).

6. For those priority pollutants without effluent limitations, the Discharger shall require its testing laboratory to quantify constituent concentrations to the lowest achievable MDL as determined by the procedure found in 40 CFR 136 (revised as of April 11, 2007). In situations where the most stringent applicable receiving water objective (freshwater or human health (consumption of organisms only), as specified for that pollutant in 40 CFR 131.38[13] is below the minimum level value specified in Attachment "H" and the Discharger cannot achieve an MDL value for that pollutant below the ML value, the Discharger shall submit justification why a lower MDL value cannot be achieved. Justification shall be submitted together with monthly monitoring reports.

7. For non-priority pollutants monitoring, all analytical data shall be reported with identification of method detection limits, as determined by the procedure found in 40 CFR 136 (revised as of April 11, 2007).

8. The State or Regional Water Board may notify the Discharger to discontinue submittal of hard copies of reports. When such notification is given, the Discharger shall stop submitting hard copies of required monitoring reports.

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13 *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*

## B. Reporting Requirements:

1. All monitoring reports, or information submitted to the Regional Board shall be signed and certified in accordance with 40 CFR 122.22 and shall be submitted under penalty of perjury.

2. All reports shall be arranged in a tabular format to clearly show compliance or noncompliance with each discharge limitation.

3. One week before groundwater extraction, treatment, and discharge is commenced, the Discharger shall notify the Regional Board or its designated compliance officer by email and/or orally by telephone.

4. If no discharge occurs during the previous monitoring period, a letter to that effect shall be submitted in lieu of a monitoring report.

5. The Discharger shall notify the Regional Board in writing when groundwater treatment and discharge is stopped for more than a week. The report shall include a discussion as to why groundwater remediation is stopped and when treatment will commence.

6. Noncompliance Reporting

   a. The discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided to the Executive Officer (951-782-4130) and the Office of Emergency Services (1-800-852-7550) orally within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within 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.

   b. Any violation of a maximum daily discharge limitation for any of the pollutants listed in this Order shall be included as information that must be reported within 24 hours.

   c. The Regional Board may waive the above required written report on a case-by-case basis.

7. Except for data determined to be confidential under Section 308 of the Clean Water Act (CWA), all reports prepared in accordance with the terms of this Order shall be available for public inspection at the offices of the Regional Water Quality Control Board and the Regional Administrator of EPA. As required by the CWA, effluent data shall not be considered confidential.

8. Monitoring reports shall be submitted by the 30th day of each month following the monitoring period and shall include:

   a. The results of all chemical analyses for the previous month, and annual samples whenever applicable,

   b. The daily flow data,

   c. A summary of the month's activities including a report detailing compliance or noncompliance with the task for the specific schedule date, and

   d. For every item of monitoring data where the requirements are not met, the monitoring report shall include a statement discussing the reasons for noncompliance, and of the actions undertaken or proposed which will bring the discharger into full compliance with requirements at the earliest time, and an estimate of the date when the discharger will be in compliance. The discharger shall notify the Regional Board by letter when compliance with the time schedule has been achieved.

9. For Dischargers discharging at a volume equal to or greater than 150,000 gallons per day, the Discharger shall submit semi-annual reports that tabulate all measured flows and measured parameters within the most recent six month period. Where discharges associated with these projects last less than 6 months, a report covering the period of discharges shall be submitted. Copies of these monitoring reports shall be submitted to the Regional Board and to the Water Quality Director of the Orange County Water District at P.O. Box 8300, Fountain Valley, CA 92728-8300.

## C. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger 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/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRsin accordance with the requirements described in subsection B.5 below. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. Additionally, the Discharger shall report in the SMR the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C. of this Order. The Discharger shall submit monthly, quarterly, and annual SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the 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 5. Monitoring Periods and Reporting Schedule**

| Sampling Frequency | Monitoring Period Begins On... | Monitoring Period | SMR Due Date |
|---|---|---|---|
| Continuous | Day after permit effective date | All | 30th day of the month following the sampling month. |
| Hourly | Day after permit effective date | Hourly | 30th day of the month following the sampling month. |
| Daily | Day after permit effective date | Midnight through 11:59 PM or any 24-hour period that reasonably represents a calendar day for purposes of sampling. | 30th day of the month following the sampling month. |
| Weekly | Sunday following permit effective date or on permit effective date if on a Sunday | Sunday through Saturday | 30th day of the month following the sampling month. |
| Monthly | First day of calendar month following permit effective date or on permit effective date if that date is first day of the month | 1st day of calendar month through last day of calendar month | 30th day of the month following the sampling month. |
| Quarterly | Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date | January 1 through March 31<br>April 1 through June 30<br>July 1 through September 30<br>October 1 through December 31 | April 30<br>July 30<br>October 30<br>January 30 |
| Semiannually | Closest of January 1 or July 1 following (or on) permit effective date | January 1 through June 30<br>July 1 through December 31 | July 30<br>January 30 |
| Annually | See Table 1 | See Table 1 | 30th day of the month following the sampling month. |
| Per Discharge Event | Anytime during the discharge event or as soon as possible after aware of the event | At a time when sampling can characterize the discharge event | 30th day of the month following the sampling month. |

## D. Other Reports – Not Applicable

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# ATTACHMENT F – FACT SHEET

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this General Permit.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Some sections or subsections of this Order have therefore been identified as "not applicable" to this group of Dischargers. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to the Dischargers authorized by the General Permit.

## I. PERMIT INFORMATION

Order No. R8-2007-0008, NPDES No. CAG918001 is a general NPDES permit adopted by the Regional Water Board on February 2, 2007, for discharges to surface waters of extracted and treated groundwater resulting from the cleanup of groundwater polluted by petroleum hydrocarbons and/or solvents at service stations and similar sites throughout the Santa Ana Region. This Order facilitated the processing of permit applications and the early implementation of groundwater cleanup projects within the Santa Ana Region. A number of authorizations to discharge under this Order have been issued to Dischargers within the San Diego Creek/Newport Bay Watershed.

Order No. R8-2004-0021, NPDES No. CAG998001 is a general NPDES permit adopted by the Regional Water Board on December 20, 2004, prescribing general waste discharge requirements for discharges to surface waters within the San Diego Creek/Newport Bay watershed. The discharges regulated under this Order include those resulting from hydrostatic testing of vessels, pipelines, and tanks, from the maintenance of potable water supply pipelines, tanks, and reservoirs, from fire hydrant testing or flushing, non-contact cooling water, air conditioning condensate, including those associated with well installation, development, test pumping and purging, aquifer testing wastes, construction dewatering and wastes from subterranean seepage and the like. Order No. R8-2004-0021 also specifies waste discharge requirements for short-term (i.e., one year or less) groundwater-related discharges within the San Diego Creek/Newport Bay watershed to address the presence in the groundwater of nitrates and selenium, and potentially other pollutants of TMDL concern.

Order No. R8-2007-0041 consolidates the requirements of Order No. R8-2007-0008, NPDES No. CAG918001, and Order No. R8-2004-0021, NPDES No. CAG998001, pertaining to groundwater-related discharges in Newport Bay and its watershed. Specifically, the proposed Order includes requirements to regulate groundwater-related discharges that may contain selenium, nutrients, volatile organic compounds, solvents or metals. The intent is to expedite the processing of applications for waste discharge requirements for projects where authorization under both Orders is currently necessary to regulate proposed groundwater-related discharges from a specific site within the San Diego Creek/Newport Bay watershed. The general NPDES permit approach has allowed the Regional Water Board to better utilize limited staff resources. Currently, some Dischargers are authorized under both Order No. R8-2004-0021 and Order No. R8-2007-0008. These

Dischargers are required to obtain authorization under the consolidated Order No. R8-2007-0041.

One Discharger (Nexus Construction Services) received temporary authorization to discharge dewatering wastes under Order No. R8-2004-0021, even though the discharges were not expected to be short-term, i.e., the discharges were expected to last more than one year. This temporary authorization was granted pending adoption of a new Order to regulate long-term groundwater-related discharges. Order No. R8-2007-0041 regulates all new groundwater-related discharges, including long-term dewatering discharges. Nexus Construction Services, which received temporary authorization to discharge under Order No. R8-2004-0021 pending adoption of an appropriate Order, is required to obtain authorization under Order No. R8-2007-0041.

Other short-term groundwater related Dischargers now regulated under Order No. R8-2004-0021 are not required to obtain coverage under Order No. R8-2007-0041. These discharges are expected to be complete prior to the expiration of Order No. R8-2004-0021 in December 2009. Order No. R8-2004-0021 is not expected to be renewed.

In some cases, discharges resulting from groundwater dewatering and/or cleanup operations may be proposed to surface waters that are impaired due to one or more pollutants not regulated by this Order. Where such pollutants are present in proposed discharges but no appropriate permit has yet been issued, temporary authorization to conduct the discharge under the terms and conditions of this Order may be granted by the Executive Officer, provided that (1) the Discharger demonstrates that temporary authorization for wastewater discharges is necessary to allow ongoing cleanup in order to prevent the migration and spread of the pollutants of concern; (2) the Discharger demonstrates that all reasonable efforts to avoid, reduce or eliminate the discharge of impairing constituents to surface waters have been implemented; (3) the Discharger demonstrates that the discharge will not contribute to the impairment of the receiving waters; and, (4) the discharge will be authorized under an appropriate individual or general permit when developed and approved by the Regional Water Board.

## II. NOTIFICATION REQUIREMENTS – GENERAL PERMIT APPLICATION

This Order requires each existing Dischargers regulated under Order No. R8-2007-0008 and/or Order No. R8-2004-0021 who requires ongoing regulatory coverage[1] to submit an updated Notice of Intent form to be covered under this permit.

This Order requires each new Discharger[2] to submit to the Executive Officer an application for the proposed discharge. Submission of the application will constitute a "Notice of Intent" to be covered under this Order. The application for the proposed discharge will require, at the minimum, the following information:

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1 *For Dischargers covered under only Order No. R8-2004-0021, the NOI must be filed only if the expected duration of the discharge is more than one year from the initiation of the discharge.*

2 *"New Discharger" refers to those proposing to discharge wastewater under Order No. R8-2007-0041 and not currently covered under Order No. R8- 2007-0008 and/or Order No. R8-2004-0021.*

1. Notice of Intent to be covered under this general permit (see Attachment A of this Order).

2. A report that shall include the following:

   a. Chemical analysis of the untreated groundwater. A representative groundwater sample shall be analyzed for organic pollutants using EPA method 8260B or equivalent. The characterization of the groundwater shall include total arsenic, total recoverable cadmium, total recoverable chromium VI, total recoverable copper, total recoverable lead, total recoverable mercury, total recoverable nickel, total recoverable selenium, total recoverable zinc, organochlorine compounds (Total Chlordane, Total DDT, Toxaphene, and PCBs), dissolved oxygen (DO), sulfate, chloride, electrical conductivity, total dissolved solids, total suspended solids, total nitrogen, total inorganic nitrogen, hardness, and priority pollutants including 1,4-dioxane and perchlorate. The selenium analysis used shall assure analytical detection levels sufficient to assess compliance with the effluent limitations of this Order. Test results shall be reported with Minimum levels (ML) and method detection limit (MDL); laboratory analytical limits shall be sufficient to detect these constituents at the concentrations listed in Tables 1, 2, 3, 4, and Attachment H.

   b. The name of the proposed receiving water body, including the location (Latitude and Longitude) of the discharge point (s);

   c. The estimated average and maximum daily flow rates, the start date of discharge (if a new discharge), and the duration of the discharge, and the estimated total volume of the discharge;

   d. A map showing the path from the point of initial discharge to the ultimate location of discharge;

   e. A list of known or suspected leaking underground tanks and other facilities or operations which have, or may have impacted the quality of the underlying groundwater within the expected radius of influence of the project;

   f. A discussion of the proposed dewatering and/or cleanup project (if appropriate), including a review of the extraction system design and the status of definition of free product and dissolved product plumes for sites contaminated with petroleum hydrocarbon or solvents only (as appropriate);

   g. A description of the proposed treatment system and a certification report on the adequacy of each component of the proposed treatment system along with the associated operation. This certification report shall contain a requirement-by-requirement analysis, based on accepted engineering practice, of how the process(es) and physical design(s) of the treatment system will ensure compliance with this Order. The design engineer shall affix his/her signature and engineering license number to this certification report. The report(s) shall also certify the following:

      (1) All treatment facility startup and operation instruction manuals are adequate and available to operating personnel;

(2) All treatment facility maintenance and testing schedules are included in the treatment facility operation and maintenance manual (O&M Manual), which shall be kept readily accessible to onsite operating personnel; and

(3) Influent and effluent sampling locations and ports are located in areas where samples representative of the waste stream to be monitored can be easily obtained.

h. A discussion of a plan for the prevention of run-on, interception and diversion of runoff, and prevention of infiltration and runoff from contaminated soils stored on-site, if the discharge is associated with a groundwater remediation project and soils containing petroleum projects or other pollutants will be maintained on-site; and

i. Any other information deemed necessary by the Executive Officer.

3. A site characterization study that defines the onsite contaminants (petroleum hydrocarbons, solvents, metals and/or salts) and their properties and the three-dimensional extent and concentration of contaminants in the subsurface, and includes a description of the geologic and hydrologic factors that control the migration of the contaminants.

4. An evaluation of the selenium concentrations in proposed discharges and a determination of whether immediate compliance with the numeric effluent limitations specified in this Order for individual constituents is feasible. If immediate compliance is feasible, then the Discharger can, upon authorization under this Order, discharge in accordance with the numeric effluent limitations and with the remaining terms and conditions of this Order. If immediate compliance with the numeric selenium limitations is infeasible, then the Discharger must demonstrate that it is not reasonably feasible to reduce or eliminate the discharge to surface waters. If it is demonstrated that it is not reasonably feasible to reduce or eliminate the discharge, then the Discharger must either (a) submit for approval by the Executive Officer a proposed plan and schedule that assures that selenium discharges in excess of those allowed pursuant to the effluent limitations will be offset on at least a one-to-one basis, or as determined by the Regional Water Board's Executive Officer; or, (b) demonstrate that the Discharger is a participating member of the Nitrogen and Selenium Management Program (NSMP) Working Group (see IV. Applicable Plans, Policies and Regulations, E. and F., below).

   Any proposed selenium offset must assure that there is no net loading of selenium to surface waters within the San Diego Creek/Newport Bay watershed. Dischargers who pursue a selenium offset are required to identify a plan and schedule for implementation of the offset prior to commencing any new discharge, and are required to implement that plan and schedule upon approval by the Executive Officer. This plan/schedule is to reflect the shortest practicable time necessary to provide the offset. In no case shall this schedule extend beyond December 20, 2009. It is recognized that the offset may not be completed within the time frame of the actual discharge; therefore, in filing a Notice of Intent to obtain authorization to discharge under this Order, these Dischargers are required to acknowledge explicitly that no notice of termination will be issued and

that compliance with this Order will continue to be required and enforced until such time as the offset is satisfactorily completed.

5. An evaluation of the nitrogen concentrations in proposed discharges and a determination of whether immediate compliance with the numeric effluent limitations specified in this Order for surface water discharges of nitrogen is feasible. A description of how a 50% reduction in nutrient discharges will be achieved if nitrogen is present in the discharges. If it is demonstrated that it is not reasonably feasible to achieve immediate compliance with the 50% reduction, then the Discharger is required to (1) identify a proposed plan and schedule whereby the 50% reduction will be achieved within the shortest practicable time, or (2) identify a proposed plan and schedule for implementation of a nitrogen offset. The nitrogen offset program must (a) assure the reduction of nitrogen loading to surface waters equivalent to the requisite 50% reduction, (b) assure the completion of the offset in the shortest practicable time, and (c) be implemented upon approval by the Executive Officer. It is recognized that the offset may not be completed within the time frame of the actual discharge; therefore, in filing a Notice of Intent to obtain authorization to discharge under this Order, these Dischargers are required to acknowledge explicitly that no notice of termination will be issued and that compliance with this Order will continue to be required and enforced until such time as the offset is satisfactorily completed.

6. The Discharger shall submit for approval by the Executive Officer of the Regional Water Board a fixed hardness value based on the 5th percentile of effluent hardness measurements or the average ambient receiving water hardness measurements for those sites polluted with metals (lead, cadmium, copper, chromium (III), nickel, silver, and zinc).

## III. GROUNDWATER MANAGEMENT ZONE AND WASTEWATER DESCRIPTION

The groundwater management zone in the San Diego Creek/Newport Bay Watershed consists of a deep regional aquifer overlain by a shallow perched aquifer. The deep aquifer, an important component of the water supply for Orange County, is recharged naturally through infiltration along the flanks of the Santa Ana Mountains, and artificially through actively managed spreading basins along the Santa Ana River. The shallow aquifer is poorly transmissive, restricted in extent, and found largely in the central portion of the watershed in the Tustin Plain. Historically, this aquifer recharged through local vertical infiltration. Surface runoff in the watershed ponded seasonally in the area known as the Swamp of the Frogs, where shallow groundwater seeped to the surface.

The quality and hydrology of the shallow groundwater has been altered by anthropogenic activities, beginning in the early part of the 20th century. Irrigated agriculture resulted in leaching of nitrates and other salts to the shallow groundwater. The Swamp of the Frogs was drained and a network of channels was created to convey wastewater to Upper Newport Bay. A large portion of this wastewater consists of "baseflow" (seepage from shallow groundwater). Although seleniferous bedrock and soils occur naturally in parts of the watershed, the drainage modifications in the watershed have resulted in increased selenium mobility. The concentration of selenium in the groundwater of the watershed is

not homogeneous and can vary widely depending on specific location within the watershed. Accordingly, the concentration of selenium in groundwater-related discharges in the watershed also varies widely.

Recent investigations into the sources of selenium and nutrients in the watershed have found that approximately 62-87 percent (%) of the base flows in San Diego Creek result from groundwater inflows to the creek, either naturally through subsurface flow, springs, and weepholes, or through groundwater dewatering and remediation operations. Approximately 96% of the selenium and 85% of the nitrate concentrations found in San Diego Creek and its tributaries result from these groundwater inputs[3].

Chlordane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane (DDT), toxaphene and PCBs are legacy organochlorine compounds that are no longer being actively used in the watershed. However, these compounds are highly persistent in the environment and while they have been banned for a number of years, they continue to be found in sediments and to accumulate in biota in the watershed. Historic uses of the organochlorine pesticides (chlordane, DDT and toxaphene) were predominantly agricultural and urban. PCBs were used extensively for many years as insulating fluids in electrical transformers and in other products such as cutting oils. PCBs were released into the environment through discharges from point sources and through spills and accidental releases.

Organochlorine compounds bioaccumulate in the fatty tissues of biological organisms and have been associated with reproductive impacts (most notably, eggshell thinning in birds due to DDE, a degradation product of DDT). Though the organochlorine compounds have low water solubility (i.e., are hydrophobic) and are therefore most often associated with fine sediments and organic particulates, DDT has been detected in groundwater in the watershed at concentrations exceeding the CTR criteria[4]. TMDLs for these compounds have been promulgated by USEPA and revised organochlorine compounds TMDLs were recently adopted by the Regional Board[5]. The Regional Board-approved TMDLs will not become effective until approved by the State Water Board and the Office of Administrative Law. USEPA approval of the TMDLs is also required. USEPA has indicated its intent to approve the TMDLs once the state approval process is complete. To implement the organochlorine compounds TMDLs promulgated by the USEPA, this Order requires Dischargers to conduct monitoring of discharges and will include a reopener provision that will enable the Regional Board to reopen the permit to include effluent limitations and other relevant requirements, if monitoring data indicate that discharges have the reasonable potential to cause or contribute to violations of organochlorine compound standards and TMDLs. These limitations and requirements will implement the organochlorine compounds TMDLs adopted by the Regional Board.

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3 *Meixner et al., 2004. Sources of Selenium, Arsenic and Nutrients in the Newport Bay Watershed. (Contract Report to the Santa Ana Regional Water Board)*

4 *SARWQCB, 2006. Total Maximum Daily Loads for Organochlorine Compounds, San Diego Creek, Upper and Lower Newport Bay, Orange County, California. November 17, 2006 technical staff report.*

5 *Resolution No. R8-2007-0024*

Groundwater pollutant plumes often contain complex mixtures of hundreds of petroleum-related compounds (e.g., gasoline contains over 200 chemicals) or chlorinated hydrocarbons, which makes complete chemical analyses very expensive and sometimes impractical or impossible due to sample matrix interferences, constituent masking, or the lack of standard analytical techniques. Further, neither the State nor the USEPA[6] has proposed/established quality objectives for many of the petroleum hydrocarbon compounds. Therefore, indicator constituents for the detection and evaluation of complex mixtures of petroleum related compounds such as gasoline and diesel will be used in setting effluent limitations and monitoring groundwater discharged to surface waters in the Santa Ana Region[7]. The indicator constituents used for evaluating compliance for discharges of gasoline and diesel related products are benzene, toluene, ethylbenzene, xylene (BTEX) and total petroleum hydrocarbons. For chlorinated hydrocarbon solvents such as trichloroethylene (TCE) and tetrachloroethylene (PCE), the specific chemical constituents and/or their degradation products can be used to evaluate compliance with the permit limitations for these constituents specified in this Order.

Diesel fuel consists primarily of straight-chained hydrocarbons (alkenes and alkanes) ranging in length from C10 to C23, with C16 and C17 predominating. The C10-C23 straight-chain hydrocarbons in groundwater can be quantified using standard analytical techniques. Since the predominant components of diesel fuel are the straight-chain hydrocarbons, the California Department of Public Health's recommended analytical procedure for total petroleum hydrocarbons-diesel[8] is used to indicate groundwater polluted by diesel fuel.

To reduce the amount of carbon monoxide in the atmosphere and abate air pollution, oxygenated fuels were required by the USEPA in select metropolitan areas such as Southern California. Fuel oxygenates are also used to enhance the octane of conventional gasoline. Methyl tertiary-butyl ether (MTBE) has been the most commonly used fuel oxygenate. Oxygenates in limited commercial use also include ethyl tert-butyl ether (ETBE) and tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), methanol (MeOH), and diisopropyl ether (DIPE). Accidental releases of gasoline to the subsurface from underground storage tanks, pipelines, refueling facilities, and landfills provide point sources for entry of oxygenates into the hydrologic cycle, together with the gasoline hydrocarbons. MTBE, as well as other alkyl ether oxygenates, ETBE and TAME are much less biodegradable than BTEX hydrocarbons in ground water. Tert butyl alcohol (TBA) is also being detected in effluent streams and, like MTBE, poses a threat to water quality. Furthermore, the fuel oxygenates sorb only weakly to soil and aquifer material, thereby increasing the risk of groundwater contamination.

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6 *United States Environmental Protection Agency*

7 *It is believed that fuels have been adequately studied to justify limiting the analysis to these compounds (see "Leaking Underground Storage Tank Manual: guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure," State of California, Leaking Underground Fuel Tank Task Force, May 1988).*

8 *Leaking Underground Fuel Tank (LUFT) Manual: Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure, October 1989.*

Recent findings indicate the presence of MTBE in over 60% of surface water supply reservoirs and groundwater water supply wells in California. Data from a Lawrence Livermore National Laboratory study show that MTBE has been detected at over 4,600 leaking underground tank sites. Consequently, on March 26, 1999, the Governor concluded that the use of MTBE in California gasoline poses a significant risk to California's environment, and directed that MTBE be phased out of California gasoline as soon as possible. The risks to California's environment prompted the California Department of Public Health (CDPH) to establish a maximum contaminant level for MTBE in drinking water of 13 micrograms per liter.

1,2-Dichloroethane was used as an anti-knock additive in leaded fuels. 1,2-Dichloroethane (1,2-DCA) is a colorless, oily, organic liquid with a sweet, chloroform-like odor. The greatest use of 1,2-dichloroethane is in making chemicals involved in plastics, rubber and synthetic textile fibers. Other uses include: as a solvent for resins and fats, photography, photocopying, cosmetics, drugs; and as a fumigant for grains and orchards (EPA fact sheet).

In the past, 1,2,3-Trichloropropane (TCP) has been used primarily as a solvent and extractive agent. As a solvent, it has commonly been used as a paint and varnish remover, a cleaning and degreasing agent and a cleaning and maintenance solvent. It can be removed through granular activated carbon.

Vinyl Chloride (chlorethene or chloroethylene) is also being detected at low concentrations at sites with chlorinated solvents release. Vinyl Chloride is normally the result of the breakdown of chlorinated solvents. Due to its significant toxicity and regular presence in the soils and groundwater at chlorinated solvents release sites, effluent limitations for vinyl chloride are specified in this Order.

1,4-dioxane is a man-made compound primarily used as an industrial solvent or solvent stabilizer. 1,4-dioxane is generally not biodegradable and is effectively treated through an advance oxidation process in the form of ultraviolet light combined with hydrogen peroxide. This treatment breaks down the compound largely into carbon dioxide and water.

Perchlorate is both a naturally occurring and man-made chemical. Perchlorate is the primary ingredient of solid rocket propellant. Perchlorate affects human health by interfering with the uptake of iodide into the thyroid gland and disrupts the function of the thyroid. Biological treatment and ion (anion) exchange systems are among the technologies that are being used to remove perchlorate from water.

This Order regulates discharges to Newport Bay and surface waters within the San Diego Creek/Newport Bay watershed from groundwater dewatering operations where contaminated groundwater may be extracted and discharged, and from temporary or permanent remediation systems, operated to clean up groundwater contamination from petroleum based products, solvents and metals. This Order combines the applicable requirements specified in Order No. R8-2004-0021 and Order No. R8-2007-0008.

## A. Description of Wastewater Treatment

A number of treatment methods are available for the treatment of groundwater contaminated by petroleum hydrocarbons or chlorinated solvents. The more commonly used methods include air stripping, air sparging, granular activated carbon adsorption, UV-peroxidation, nutrient enhanced biodegradation, and a combination of two or more of the above technologies. To remediate subsurface soil contamination, vapor extraction systems and in-situ bio-remediation are commonly used. Most of these systems, if designed and operated properly, can lower the concentrations of the pollutants to below accepted detection limits.

Technologies that are currently being used to remove perchlorate from water include biological treatment and ion (anion) exchange. Nitrate can be removed by a variety of treatment options and best management practices (BMPs) using de-nitrification techniques (e.g., nutrient-enhanced biological degradation, treatment wetlands). At this time, there are no reasonably feasible treatment technologies for removal of selenium, although certain technologies have been pilot tested by the Nitrogen and Selenium Management Program (NSMP) Working Group (see IV. Applicable Plans, Policies and Regulations, E., below) and the Irvine Ranch Water District and appear promising. Discharges of selenium to surface waters may be reduced through the implementation of BMPs designed to reduce or even eliminate the volume of water discharged to surface waters. Organochlorine compounds (DDT and its isomers) have been removed from groundwater using a groundwater extraction system with carbon adsorption treatment vessels.

## B. Discharge Points and Receiving Waters

This Order authorizes discharges to Newport Bay and surface waters within the San Diego Creek/Newport Bay watershed. The beneficial uses of these receiving waters are described in Section IV.C.1., below.

## C. Summary of Requirements Specified in Order No. R8-2007-0008 and Order No. R8-2004-0021.

Order No. R8-2007-0008 includes effluent limitations for MUN designated and MUN-excepted surface waters for Total Petroleum Hydrocarbons, Benzene, Toluene, Xylene, Ethylbenzene, Carbon Tetrachloride, Chloroform, Dichlorobromomethane, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Methyl Tertiary Butyl Ether (MTBE), Naphthalene, Tetrachloroethylene (PCE), Trichloroethylene (TCE), 1,1-Dichloroethane, 1,1-Dichloroethylene, 1,2-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, 1,1,1-Trichloroethane (TCA), Tert Butyl Alcohol (TBA), 1,4-Dioxane, Perchlorate and lead. This Order includes effluent limitations and requirements of Order No. R8-2007-0008 that are applicable to surface waters that are excepted from MUN beneficial use.

Order No. R8-2004-0021 includes effluent limitations for selenium and nutrients for discharges of wastewater into the San Diego Creek/Newport Bay Watershed. This Order includes effluent limitations and requirements of Order No. R8-2004-0021 that are applicable to surface waters that are excepted from MUN beneficial use.

Newport Bay and all surface waters within the San Diego Creek/ Newport Bay watershed are excepted from the MUN beneficial use. Accordingly, this Order includes effluent limitations applicable to discharges to surface waters that are excepted from MUN beneficial use.

### D. Compliance Summary - Not Applicable

### E. Planned Changes - Not Applicable

## IV. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

### A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and its implementing regulations adopted by the USEPA, and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as an NPDES permit for the point source discharges described herein to Newport Bay and surface waters within the San Diego Creek/Newport Bay Watershed. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).

Pursuant to NPDES regulations at 40 CFR 122.28, States may request authority to issue general NPDES permits. On June 8, 1989, the State Water Board applied to the USEPA requesting revisions to its NPDES Program in accordance with 40 CFR 122.28, 123.62, and 403.10, including a request to add general permit authority to its approved NPDES Program. On September 22, 1989, the USEPA, Region 9, approved the State Water Board's request, granting authorization for the State to issue general NPDES permits.

Pursuant to NPDES regulations at 40 CFR 122.28 (a) (2) general permits may be regulate point source discharges that:

1. Involve the same or substantially similar types of operations,
2. Discharge the same types of wastes,
3. Require the same effluent limitations,
4. Require the same or similar monitoring, and
5. In the opinion of the Executive Officer, are more appropriately controlled under a general permit than under individual permits.

## B. 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 section 21000 et seq. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, mod. (Nov. 6, 2006, B184034) 50 Cal.Rptr.3d 619, 632-636.).

## C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Board adopted a Water Quality Control Plan for the Santa Ana Basin (hereinafter Basin Plan) that became effective on January 24, 1995. The Basin Plan 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, State Water Resources Control Board (State Water Board) Resolution No. 88-63 (Sources of Drinking Water Policy) requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic water supply use to water bodies.

   On January 22, 2004, the Regional Water Board adopted Resolution No. R8-2004-0001, amending the Basin Plan to incorporate revised boundaries for groundwater subbasins, now termed "management zones", new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground waters. The State Water Resources Control Board and Office of Administrative Law (OAL) approved the N/TDS Amendment on September 30, 2004 and December 23, 2004, respectively. EPA approved the surface water standards components of the N/TDS Amendment on June 20, 2007.

   The existing and potential beneficial uses of Newport Bay and San Diego Creek include:

   a. Navigation,
   b. Water Contact Recreation,
   c. Non-contact Water Recreation,
   d. Commercial and Sportfishing,
   e. Preservation of Biological Habitats of Special Significance,
   f. Wildlife Habitat,
   g. Rare, Threatened or Endangered Species,
   h. Spawning, Reproduction, and Development,
   i. Marine Habitat,
   j. Shellfish Harvesting,
   k. Estuarine Habitat,
   l. Warm Freshwater Habitat, and
   m. Groundwater Recharge (intermittent beneficial use).

Many surface waters within the region recharge underlying groundwater basins. The existing and potential beneficial uses of groundwater within the Newport Bay/San Diego Creek Watershed include:

a. Municipal and Domestic Supply,
b. Agricultural Supply,
c. Industrial Service Supply, and
d. Industrial Process Supply.

The State Water Board adopted a Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California (the Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for surface waters of the State.

This Order implements applicable provisions of the Basin Plan and the Thermal Plan, as well as the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP)(see 3., below).

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995, and November 9, 1999. Approximately forty water quality criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR, which established new criteria for toxics in the State and incorporated the previously adopted criteria of the NTR. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority toxic pollutants applicable to inland surface waters, enclosed bays, and estuaries of the State.

3. **State Implementation Policy.** On March 2, 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 April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for toxicity control. Requirements of this Order implement the SIP.

4. **Alaska Rule.** On March 30, 2000, at 40 CFR 131.32, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. [65 Fed. Reg. 24641 (April 27, 2000)] Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 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 before May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.

5. **Antidegradation Policy.** NPDES regulations require that State water quality standards include an antidegradation policy consistent with the federal policy established at 40 CFR 131.12. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16, which 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 Basin Plan implements and incorporates by reference both the state and federal antidegradation policies. The discharges authorized under this Order are consistent with applicable antidegradation provisions of NPDES regulations at 40 CFR 131.12 and with State Water Board Resolution No. 68-16.

6. **Anti-Backsliding Requirements.** CWA Sections 402 (o) (2) and 303 (d) (4) and NPDES regulations at 40 CFR 122.44 (l) prohibit backsliding in NPDES permits; i.e., effluent limitations in a reissued permit must be at least as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. This Order/General Permit is consistent with applicable anti-backsliding requirements. The limitations in this Order are not less stringent than those in the prior Orders/General Permits.

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

Section 303(d) of the CWA requires states to identify water bodies where water quality standards are not expected to be met after technology-based effluent limitations have been implemented for point sources. For all 303(d)-listed water bodies and pollutants, the Regional Water Board has developed and/or plans to develop total maximum daily loads (TMDLs) that specify waste load allocations (WLA) for point sources and load allocations (LA) for non-point sources. These allocations form the basis, in part, for limitations in waste discharge requirements.

In June 2007, the USEPA approved the State's 2004-2006-303(d) list of impaired water bodies. This list included Reaches 1 and 2 of San Diego Creek and Upper and Lower Newport Bay. One or more of these water bodies were determined to be impaired by one or more of the following: fecal coliform, nutrients, metals, pesticides (including organochlorine pesticides), PCBs and selenium. TMDLs have been developed to address these impairments. Section D describes the requirements of the nutrient TMDL, section E describes the requirements of the selenium TMDL, and section F describes the requirements of the organochlorine compounds TMDLs, which are relevant to this Order.

## E. Nutrient TMDL.

On April 17, 1998, the Regional Water Board adopted Resolution No. 98-9, amending the Basin Plan to incorporate a Nutrient Total Maximum Daily Load (TMDL) for the Newport Bay/San Diego Creek Watershed. The TMDL was amended by Resolution No. 98-100 on October 9, 1998 and thereafter approved by the State Water Resources Control Board, Office of Administrative Law and the USEPA. The nutrient TMDL was developed to address aesthetic and recreational nuisances created by algal blooms in Newport Bay, as well as the concern that these blooms may adversely affect wildlife. The TMDL establishes final targets that are based on a 50% reduction in nitrogen loading. The TMDL requires that the 50% reduction be achieved no later than December 31, 2007 for summer loading (between April 1 and September 30); the 50% reduction in winter inputs (between October 1 and March 31) is to be achieved no later than December 31, 2012. While the TMDL requires reductions in nutrient loadings, it is recognized that too few nutrients in a waterbody can potentially adversely affect wildlife.

Consistent with the TMDL targets, the nutrient TMDL specifies wasteload and load allocations for total nitrogen mass inputs to the San Diego Creek/Newport Bay watershed from identified sources[9]. Nitrogen load allocations are specified for "undefined sources", which include rising groundwater, discharges associated with groundwater cleanup and dewatering, atmospheric deposition, open space inputs and in-bay sediment nitrogen. Again consistent with the TMDL targets, the load allocations for undefined sources require a 50% reduction in summer inputs by 2007, and a 50% reduction in winter inputs by 2012.

For the 2006 summer season, the measured total nitrogen (TN) load into Newport Bay was about 141,000 lbs. This is slightly below the summer 2007 TMDL target of 153,861 lbs, but does not include in-bay nutrient supply from sediment. Research conducted by the Southern California Coastal Research Project (SCCWRP) has shown that the flux of nutrients from sediments in Newport Bay is significant, and of the same order-of-magnitude as the loading from the watershed.

TN loads contributed by groundwater dewatering and cleanup discharges amounted to 26,309 lbs (24,438 and 1,871 lbs, respectively). The 50% reduction for the dewatering loads regulated under Order No. R8-2004-0021[10] is provided by an offset from the Irvine Ranch Water District (IRWD) constructed wetlands in the San Joaquin Freshwater Marsh. Denitrification in the IRWD wetlands removed 33,447 lbs of nitrogen from San Diego Creek during summer 2006. Discharges not covered by the wetlands offset must either implement a 50% reduction or cease discharging to surface water.

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9 *The TMDL assigns phosphorus load allocations to open space and agricultural areas. No phosphorus load allocations are specified for groundwater-related discharges since these discharges are not expected to include phosphorus.*

10 *Order No. R8-2004-0021 regulates short-term groundwater-related discharges, including dewatering discharges. Short-term discharges are defined as those lasting one year or less.*

An estimate of the nitrogen loads that would be regulated by this Order is approximately 25,000 lbs. (Discharges from MCAS[11] Tustin – about 1,800 lbs/season – are proposed to be routed out of the watershed via a sewer link to the Orange County Sanitation District (OCSD)). This estimate would fluctuate depending on the number of temporary dewatering operations that are active.

The nutrient TMDL is currently being reviewed and new water quality objectives for San Diego Creek will be proposed in 2008. The revised TMDL and new water quality objectives would likely require further reductions in nitrogen loads from groundwater dewatering and cleanup operations. This Order will be re-opened as necessary to address relevant requirements of the revised TMDL.

The Nutrient TMDL implementation plan supports the trading of pollutant allocations, where appropriate, as a potentially cost-effective method to achieve pollutant reduction. There is an ongoing effort by watershed stakeholders to design and implement a regional program to achieve the nitrogen reductions required by the TMDL (natural treatment systems). Implementation of this program, with participation by the groundwater Dischargers, will likely enable the Dischargers to achieve the requisite nitrogen mass reductions to Newport Bay, particularly when coupled with nitrogen removal accomplished by IRWD's constructed wetlands.

On December 20, 2004, the Regional Water Board adopted Order No. R8-2004-0021, NPDES No. CAG998002, to regulate short-term groundwater-related discharges and de minimus wastewater discharges to surface waters within the San Diego Creek/Newport Bay Watershed. This Order was adopted, in part, to assure that discharges of nitrogen (and selenium) were regulated appropriately to implement the nutrient (and selenium) TMDLs. Certain of the short-term and long-term Dischargers of groundwater-related wastewaters within the watershed have agreed to form a Nitrogen and Selenium Management Program Working Group (NSMP Working Group, or Working Group) to address the requirements of this Order. The Working Group has committed to fund and participate in a Work Plan. The tasks include the development of a nutrient offset, trading or mitigation program that is to be based on a comprehensive understanding of the groundwater-related nutrient inputs to surface waters in the Newport Bay watershed.

Completion of the approved Work Plan is expected to result in the development of a comprehensive management plan for nitrogen (selenium see discussion below) in groundwater-related inflows to surface waters in the Newport Bay watershed and as such, goes beyond issues specific to the discharges regulated under this Order. The management plans are expected to provide recommendations for specific load and wasteload allocations for the groundwater-related components of the "undefined source" category identified in the TMDL, in addition to offset, trading or mitigation program recommendations. Revisions to the TMDL and/or to the nutrient-related requirements in this Order may be necessary based on the results of the Work Plan assessments and resultant management plans.

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[11] *MCAS = Marine Corps Air Station*

This Order implements relevant requirements of the Nutrient TMDL. To implement the nutrient TMDL, this Order includes a total nitrogen effluent limit of 1 mg/L for groundwater dewatering discharges to San Diego Creek, which is tributary to Newport Bay. Dischargers may comply with this requirement by implementing a nitrogen offset program, such as participation in the diversion and treatment of San Diego Creek flows in the IRWD constructed wetlands in the San Joaquin Freshwater Marsh or in the implementation of the Natural Treatment System (NTS), and/or by implementing other nitrogen management strategies identified through the NSMP.

## F. Selenium TMDLs

On June 14, 2002, the USEPA Region 9 established TMDLs for 14 toxic pollutants, including selenium, for San Diego Creek and Newport Bay. The selenium TMDLs are based on the selenium criteria specified in the CTR and in the NTR. The EPA TMDLs for selenium identified loading targets for specific groups of discharges but recognized that quantification of the baseline loading from Dischargers of groundwater was infeasible due to the lack of selenium data. The EPA TMDLs do not include specific implementation requirements, such as compliance timeframes, interim numeric targets, etc, since implementation plans are the responsibility of the Regional Water Board. However, pursuant to federal regulations, the Regional Water Board is required to ensure that NPDES permits for discharges in this watershed contain effluent limitations necessary to be consistent with the wasteload allocations specified in the selenium TMDLs (and other TMDLs). In the absence of an adopted implementation plan, the Regional Water Board can and must employ its legally authorized discretion in determining the appropriate permit provisions to implement these allocations. Regional Water Board staff is now working on an implementation plan for the selenium TMDLs, which will be considered for future adoption as a Basin Plan amendment. Staff may also recommend revisions to the selenium TMDLs established by EPA based on ongoing and forthcoming studies by EPA, Board staff and others. In its documents establishing the toxic TMDLs, EPA recognizes the substantial uncertainties that remain concerning selenium sources, biological effects, and the appropriate numeric objective that should apply to the protection of beneficial uses. EPA is now engaged in a review of the selenium objective in the CTR. Resolution of these uncertainties, and possible revision of the numeric selenium objective by EPA or through a site-specific objective process, is likely to require future refinement of the selenium TMDL. Any such refinement would necessitate review and revision, as appropriate, of this Order. The lack of a readily available, practicable selenium treatment technology that can assure compliance with selenium discharge limitations is also recognized. Absent identification of effective and reasonable treatment technologies, source controls or pollution reduction measures for selenium, development of a site-specific objective for selenium in the Newport Bay watershed will be appropriate.

In response to the selenium-related requirements of Order No. R8-2004-0021 and to the acknowledged difficulty of achieving compliance with selenium effluent limitations because of the lack of a practicable selenium treatment technology, the Work Plan developed by the NSMP Working Group (see discussion in E. Nutrient TMDL, above) includes s the development of a selenium site-specific objective, evaluation of potential selenium treatment technologies and BMPs, and an offset, trading or mitigation program that is to be based on a comprehensive understanding of the groundwater-related selenium inputs to surface waters in the Newport Bay watershed.

Completion of the approved Work Plan is expected to result in the development of a comprehensive management plan for selenium in groundwater and surface waters in the Newport Bay watershed and as such, goes beyond issues specific to the discharges regulated under this Order. Revisions to the TMDLs and/or to the selenium-related requirements in this Order may be necessary based on the results of the Work Plan assessments, resultant management plans, and the adoption of site-specific selenium objectives.

Both the CTR and the State Policy include provisions for compliance schedules for effluent limitations for selenium and other priority pollutants. Pursuant to the State Policy, up to five years from the date of adoption of waste discharge requirements that implement the CTR criteria may be allowed to complete actions necessary to comply with CTR-criterion–based effluent limitations. These actions include the development and adoption of a site-specific objective, if appropriate, as provided in the Policy (Section 5.2). If the compliance schedule exceeds one year, interim limitations must be specified in NPDES permits and interim requirements to control the pollutant for which the compliance schedule is included may be imposed. These interim requirements may include pollutant minimization and source control measures. This Order requires that the Dischargers meet the selenium final limit by December 20, 2009. This is the same compliance date specified for Dischargers regulated under the General Permit Order No. R8-2004-0021 and the City of Irvine's long-term groundwater-related discharges regulated under Order No. R8-2005-0079, NPDES No.CA8000406.

This Order implements relevant provisions of the CTR, the EPA selenium TMDLs for San Diego Creek and Newport Bay, and the SIP by specifying interim performance-based and final numeric effluent limitations for selenium for the treated groundwater discharges. The Dischargers must implement selenium reduction through reasonable treatment, source control, or pollution prevention measures when such measures become available during the five-year permit term. This Order requires that if a practicable selenium treatment technology becomes available, the Discharger shall implement that technology and comply with the final selenium limits in this Order within one year of notification of the need to do so by the Regional Board. In addition, the Dischargers may be able to reduce or eliminate selenium concentrations and mass discharges by the implementation of low technology best management practices (BMPs). Such volume-reduction and other BMPs will be investigated in an aggressive manner, including an evaluation of other potential positive and negative impacts that may result from the BMPs.

## G. Organochlorine Compounds TMDLs

On June 14, 2002, USEPA Region 9 established TMDLs for 14 toxic pollutants, including five organochlorine compounds, for San Diego Creek, Upper and Lower Newport Bay, and Rhine Channel. The organochlorine (OC) compounds included four legacy pesticides (1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane [DDT], chlordane, dieldrin and toxaphene) and polychlorinated biphenyls (PCBs). TMDLs were established for chlordane, total DDT, and total PCBs in all these waterbodies; dieldrin TMDLs were established for San Diego Creek, Lower Newport Bay, and Rhine Channel; and a TMDL for toxaphene was established only for San Diego Creek (USEPA, 2002).

In September 2004, the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (2004) (the State Listing Policy) was adopted. Impairment due to the organochlorine compounds in Newport Bay and San Diego Creek was reevaluated in accordance with this new Policy. The results of this impairment assessment differed from that previously performed by USEPA in that the water body-pollutant combinations requiring TMDLs were revised, consistent with the new findings of impairment. The loading capacities and existing loads were also revised to reflect corrections and modifications to the USEPA technical TMDLs.

On September 7, 2007, the Regional Board adopted a Basin Plan amendment to incorporate TMDLs for total DDT and toxaphene in San Diego Creek and total DDT, chlordane and total PCBs for Upper and Lower Newport Bay. Informational TMDLs were also adopted for chlordane and total PCBs in San Diego Creek. EPA has indicated support for these revised TMDLs; therefore, the stakeholders and Regional Board staff are moving forward with implementation of the revised organochlorine compounds TMDLs in accordance with the September 7, 2007 Basin Plan Amendment.

The organochlorine compounds TMDLs include numeric targets based on the CTR ambient water quality criteria. The CTR states that it is inappropriate to adjust to percent dissolved for bioaccumulative compounds such as organochlorine pesticides and PCBs even though these compounds have low water solubility. Organochlorine pollutants tend to tightly sorb to soil organic matter; however, they have been detected in both soil and groundwater[12]—DDT has been detected in groundwater in at least one location in the watershed. As these compounds are highly persistent in the environment, over very long periods of time they may eventually leach into groundwater, especially in soils that contain little organic matter.

Given the absence of relevant data with which to determine reasonable potential pursuant to the SIP, this Order requires monitoring for organochlorine compounds but does not include effluent limitations. The results of the monitoring will be used to determine whether it is appropriate to reopen the Order to specify effluent limitations consistent with the organochlorine compounds TMDLs.

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12 *Equitox Fact Sheet*

### H. Other Plans, Polices and Regulations

In most areas of the watershed, there is no significant amount of receiving water at the point of discharge. Therefore, no mixing zone allowance is included in the calculation of effluent limits. Consequently, compliance with the effluent limits is required to be determined at the end of the discharge pipe or at a location prior to where the discharge enters the receiving water.

## V. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs may be established: (1) using USEPA criteria guidance under CWA section 304 (a), supplemented where necessary by other relevant information; (2) on an indicator parameter for the pollutant of concern; or (3) using 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).

### A. Discharge Prohibitions

The discharge prohibitions are based on the Federal Clean Water Act, Basin Plan, State Water Resources Control Board's plans and policies, U.S. Environmental Protection Agency guidance and regulations, and previous permits Orders No. R8-2004-0021 and R8-2007-0008 provisions, and are consistent with the requirements set for other discharges regulated by NPDES permits adopted by the Regional Water Board.

### B. Technology-Based Effluent Limitations

#### 1. Scope and Authority

CWA Section 301 (b) and NPDES regulations at 40 CFR 122.44 require permits to, at a minimum, meet applicable technology-based requirements and any more stringent effluent limitations necessary to meet applicable water quality standards. The CWA requires the USEPA to develop effluent limitations, guidelines and standards (Effluent Limitations Guidelines - ELGs) representing application of best practicable treatment control technology (BPT), best available technology economically achievable (BAT), best conventional pollutant control technology (BCT), and best available demonstrated control technology for new sources (NSPS),

for specific industrial categories. Where USEPA has not yet developed ELGs for a particular industry or a particular pollutant, Section 402 (a) (1) of the CWA and USEPA regulations at 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis. When BPJ is used, the permit writer must consider specific factors outlined at 40 CFR 125.3.

### 2. Applicable Technology-Based Effluent Limitations

a. Petroleum and Chlorinated Hydrocarbons

Effluent limitations guidelines for petroleum and chlorinated hydrocarbons have not been developed for the category of Dischargers authorized to discharge by this Order. However, since authorized Dischargers are discharging treated wastewaters, it is appropriate to establish technology-based effluent limitations using Best Professional Judgment (BPJ). This Order establishes technology-based effluent limitations.

b. 1,2,3-trichloropropane (TCP) is a chemical of concern. The current technology that is used to remove TCP from discharges has successfully reduced concentration of TCP below the detection limit of 0.5 µg/L. This is the basis for the effluent limitation for TCP in this Order.

## C. Water Quality-Based Effluent Limitations (WQBELs)

### 1. Scope and Authority

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

Section 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, water quality-based effluent limitations (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 section 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 Plan, 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**

This Order authorizes certain discharges to surface waters within the San Diego Creek/Newport Bay Watershed. Beneficial uses of these receiving waters, as designated by the Basin Plan are described in Section IV.C.1., above. The water quality criteria applicable to these receiving waters are established by the NTR, CTR, and Basin Plan.

a. The Basin Plan includes the following narrative and numeric water quality objectives applicable to surface waters.

TDS: TDS limitations are specified in this Order for discharges to surface waters. The proposed TDS limits for direct discharges into surface waters within the San Diego Creek/Newport Bay watershed are based on the objectives specified in Table 4-1 of the amended Basin Plan and are shown in Table below:

**Table 1. TDS Water Quality Objectives of Surface Water**

| Inland Surface Waters | TDS, mg/L |
|---|---|
| Reach 1, San Diego Creek | 1500 |
| Reach 2, San Diego Creek | 720 |

TIN. As discussed in Section III.D., above, the nutrient TMDL specifies wasteload and load allocations for total nitrogen mass inputs to the San Diego Creek/Newport Bay watershed from identified sources[13]. Nitrogen load allocations are specified for "undefined sources", which include rising groundwater, discharges associated with groundwater cleanup and dewatering, atmospheric deposition, open space inputs and in-bay sediment nitrogen. The load allocations for undefined sources require a 50% reduction in summer nitrogen inputs by 2007, and a 50% reduction in winter nitrogen inputs by 2012.

13 *The TMDL assigns phosphorus load allocations to open space and agricultural areas. No phosphorus load allocations are specified for groundwater-related discharges since these discharges are not expected to include phosphorus.*

b. Unless specified in sections V.A.3. and V.A.4. of the Order, for discharges to surface waters where discharges percolate into the ground and there is no surface water quality objective, the effluent TDS/TIN concentration limit in the Order is based on the groundwater water quality objective for Irvine Groundwater Management Zone, as shown in Table 2, below:

**Table 2. TDS/TIN Water Quality Objectives of GMZ**

| Groundwater Management Zone | TDS, mg/L | TIN, mg/L |
|---|---|---|
| Irvine | 910 | 7.9 |

However, treated effluent exceeding the groundwater management zone water quality objectives may be returned to the same management zone from which it was extracted without reduction of the TDS or TIN concentrations so long as the concentrations of those constituents are no greater than when the groundwater was first extracted. Incidental increases in the TDS and TIN concentrations (such as may occur during air stripping) of treated effluent will not be considered increases for the purposes of determining compliance with this discharge specification.

c. CTR and SIP

The California Toxics Rule (CTR) and State Implementation Policy specify numeric objectives for toxic substances and the procedures whereby these objectives are to be implemented. The procedures include those used to conduct reasonable potential analysis to determine the need for effluent limitations for priority and non-priority pollutants.

The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries within the Santa Ana Region.

Selenium. As discussed in Section IV.F. above, USEPA Region 9 established total maximum daily loads (TMDLs) for selenium for San Diego Creek and Newport Bay on July 14, 2002. The selenium TMDLs are based on the selenium criteria specified in the CTR and in the NTR.

Effluent Limits for Carbon Tetrachloride, Dichlorobromomethane, Tetrachloroethylene, Trichloroethylene and 1,1-Dichloroethylene are based on the CTR Human Health values.

b. Maximum Contaminant Levels

The limits for benzene, methyl tertiary butyl ether (MTBE), cis-1,2-dichloroethylene, 1,2 dichloroethane, vinyl chloride and trans-1,2-dichloroethylene, are based on CDPH Maximum Contaminant Levels (MCLs).

**3. Determining the Need for WQBELs**

NPDES regulations at 40 CFR 122.44(d)(1)(i) require permits to include WQBELs for all pollutants (non-priority or priority) "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any narrative or numeric criteria within a State water quality standard" (have Reasonable Potential). Thus, assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required.

**4. WQBEL Calculations**

Discharge limitations for metals are also included in this Order. For discharges to fresh water and enclosed bays and estuaries, the limits are based on the California Toxics Rule metals objectives. For freshwater, certain metal objectives are equations in which hardness is the variable. The actual numeric value of the objectives is calculated using hardness measurements. To determine the effluent limitation for a specific metal constituent for each freshwater discharge, and to facilitate the determination of compliance, a fixed effluent hardness value will be used in the objective equations. Federal regulations require that the effluent limits for metals be expressed as the total recoverable form. To comply with this requirement, the dissolved criteria are translated into total recoverable effluent limits using ratios of the total recoverable metals to dissolved metals (t/d) concentrations. The State Implementation Policy stipulates that in the absence of site-specific information, the conversion factors cited in the CTR should be used as the t/d translators. This Order includes a tabulation of calculated effluent limits for metals corresponding to fixed hardness values (20 through 400 milligrams per liter) (see Attachment "B"). The calculations for arriving at the effluent limits for metals are in the Regional Water Board's file for this general permit. At sites polluted with metal constituents, the Discharger is required to submit hardness values for the discharge that will be used in determining the appropriate numeric limit for that specific metal constituent(s) in the discharge. The fixed hardness value, which shall be based on the 5th percentile of effluent hardness measurements or the arnbient receiving water hardness measurements (whichever is more restrictive), shall be determined and subrnitted for approval by the Executive Officer of the Regional Water Board. Upon approval of the hardness value for the discharge, the effluent limit for metals discharges to freshwater bodies is determined from the table. For direct discharge to the Newport Bay, salt water criteria apply and are used as the basis for calculating effluent limitations.

Step 6 of the permit limit calculation procedure specified in the SIP stipulates that the average monthly effluent limitation is set equal to the effluent concentration allowance[14]. Where there is no mixing zone allowance and a California Toxics Rule human health objective applies, the effluent concentration allowance is equal to the applicable human health objective. Therefore, in these circumstances, the average monthly limit (AML) is equal to the human health objective. The SIP stipulates that where receiving waters are designated with the municipal water supply beneficial use (MUN), the human health objective for the consumption of water and organisms applies in calculating the effluent limitation; where the water is excepted from MUN, the human health objective for the consumption of organisms only applies. This Order includes effluent limits for discharges to receiving waters that are not designated MUN since all identified surface waters in the San Diego Creek/Newport Bay Watershed are excepted from the MUN beneficial use. For discharges to receiving waters, the AMLs were taken either from the California Toxics Rule human health objectives for the consumption of organisms only or from the CDPH's MCL. Each AML effluent limitation was multiplied by a 2.01 factor to determine the maximum daily concentration effluent limit. This factor is the average monthly effluent limit multiplier taken from Table 2 of the Policy. The multiplier corresponds to a coefficient of variation of 0.6 and number of samples equal to 4. This Order includes average monthly limit and maximum daily limits as required by federal regulations and the State Implementation Policy.

No mixing zone allowance is included in the calculation of effluent limits in this Order and, consequently, compliance with the effluent limits is required to be determined at the end of the discharge pipe for freshwater discharge. If a Discharger requests that a mixing zone allowance be included in the determination of appropriate effluent limits, a dilution model must be provided for approval.

Table 3 below shows the calculations for deriving effluent limitations for metals that are not hardness dependent, including other constituents for freshwater discharges. Effluent limitations for hardness dependent metals for freshwater discharges are tabulated in Attachment B of the Order. Table 4 below, shows the calculations for deriving effluent limitations for metals for saltwater discharges discharges. Table 5 below shows the basis and calculations for effluent limitations for volatile organic compounds and other constituents.

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14 *The EFFLUENT CONCENTRATION ALLOWANCE (ECA) is a value derived from the water quality 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).*

## Table 3. Effluent Limitation Calculation
## Freshwater Discharges
***NOT-HARDNESS DEPENDENT METALS AND OTHER CONSTITUENTS***

| | unit in ug/l | | | CV = 0.6 | | | Aquatic | | Human | | Permit Limit | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Caltoxics | | | Acute M | Chronic M | LTA | Objective/limits | | Health Limits | | Concentration Limit | |
| | Freshwater | | Human Health | 0.321 | 0.527 | | 3.11 | 1.55 | 2.01 | | | |
| **Constituent** | **CMC** | **CCC** | **Organic Only** | **Acute LTA** | **Chronic LTA** | | **MDEL** | **AMEL** | **MDEL** | **AMEL** | **MDEL** | **AMEL** |
| Arsenic | 340 | 150 | | 109.14 | 79.05 | ***79.05*** | 246 | 122.53 | | | **246** | **123** |
| Chromium, VI | 16 | 11 | | 5.14 | 5.80 | ***5.14*** | 15.97 | 7.96 | | | **16** | **8.0** |
| Mercury | | | 0.051 | | | | | | 0.102 | 0.051 | **0.102** | **0.051** |
| Selenium | | 5.0 | | 0.00 | 2.64 | ***2.64*** | 8.19 | 4.08 | | | **8.2** | **4.1** |

## Table 4. Effluent Limitation Calculation
## Newport Bay/Saltwater Discharges

| | unit in ug/l | | | CV = 0.6 | | | Aquatic | | Human | | Permit Limit | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Caltoxics | | | Acute M | Chronic M | LTA | Objective/limits | | Health Limits | | Concentration Limit | |
| | Saltwater | | Human Health | 0.321 | 0.527 | | 3.11 | 1.55 | 2.01 | | | |
| **Constituent** | **CMC** | **CCC** | **Organic Only** | **Acute LTA** | **Chronic LTA** | | **MDEL** | **AMEL** | **MDEL** | **AMEL** | **MDEL** | **AMEL** |
| Arsenic | 69 | 36 | | 22.15 | 18.97 | ***18.97*** | 59 | 29.41 | | | **59** | **29** |
| Cadmium | 42 | 9.3 | | 13.48 | 4.90 | ***4.90*** | 15.24 | 7.60 | | | **15** | **7.6** |
| Chromium VI | 1100 | 50 | | 353.10 | 26.35 | ***26.35*** | 81.95 | 40.84 | | | **82** | **41** |
| Copper | 5 | 3 | | 1.54 | 1.63 | ***1.54*** | 4.79 | 2.39 | | | **4.8** | **2.4** |
| Lead | 210 | 8.1 | | 67.41 | 4.27 | ***4.27*** | 13.28 | 6.62 | | | **13** | **6.6** |
| Mercury | | | 0.051 | | | | | | 0.102 | 0.051 | **0.102** | **0.051** |
| Nickel | 74 | 8 | | 23.75 | 4.32 | ***4.32*** | 13.44 | 6.70 | | | **13** | **6.7** |
| Selenium | 290 | 71 | | 93.09 | 37.42 | ***37.42*** | 116.37 | 58.00 | | | **116** | **58** |
| Silver | 1.9 | | | 0.61 | 0.00 | ***0.61*** | 1.90 | 0.95 | | | **1.9** | **0.95** |
| Zinc | 90 | 81 | | 28.89 | 42.69 | ***28.89*** | 89.85 | 44.78 | 90 | 45 | **90** | **45** |

### 5. Whole Effluent Toxicity (WET)

This Order does not specify numeric WET limits. However, this Order requires that the discharge shall not result in acute toxicity in ambient receiving waters. The effluent is deemed to cause acute toxicity when the toxicity test of 100% effluent as required in monitoring and reporting program, results in failure of the test as determined using the pass or fail test protocol specified in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA/821-R-02-012, October 2002).

## D. Best Professional Judgment-Based Effluent Limitations

The applicable limits for total petroleum hydrocarbons, toluene, ethylbenzene, xylenes, chloroform, 1,2–Dichloroethylene and naphthalene are carried over from Order No. R8-2007-0008 and are based on Best Professional Judgment (BPJ).

Since 1991, the same effluent limits for 1,2–Dichloroethylene have been included in permits regulating these discharges. However in 2003, effluent limitations for the two isomers (Cis and Trans) that make up 1,2–Dichloroethylene were added. To avoid triggering the antibacksliding provisions of the federal regulations, the effluent limitations for 1,2–Dichloroethylene are retained, with the specific condition that the sum of the isomers Cis 1,2–Dichloroethylene and trans 1,2–Dichloroethylene shall not exceed the effluent limitations for 1,2–Dichloroethylene.

This Order specifies limits for methyl isobutyl ketone(MIBK), Tert Butyl Alcohol (TBA), 1,4-dioxane, perchlorate and methyl ethyl ketone (MEK) that are the same as those specified in Order No. R8-2007-0008 and were based on notification levels identified by the California Department of Public Health/Office of Environmental Health Hazard Assessment (OEHHA). (In the case of MEK, the notification level is for methyl isobutyl ketone (MIBK), which is in the same class of liquid organic compounds as MEK).

## D. Discharge Specifications

Discharge limitations are included in this Order for those other chemicals of concern that typically pollute groundwater at service stations and similar sites within the San Diego Creek/Newport Bay watershed. In addition, the monitoring program includes analyses for additional constituents to determine the overall impact of individual discharges and to screen for unexpected chemicals.

Discharge Limitations established by this Order require authorized Dischargers to compare effluent data, generated through routine monitoring, to effluent limitations. Exceedance of any of the specified effluent limitations may trigger mandatory minimum penalties, accelerated monitoring for certain constituents and may lead to discontinuance of coverage under this General Permit. The Discharge Specifications impose specific effluent limitations, assuring that authorized discharges are not creating adverse impacts

on receiving water quality. When adverse impacts are highlighted following exceedance of an effluent limitation(s), Dischargers are directed to confirm the findings, to mitigate impacts, to sewer or stop the discharge and/or to seek coverage under an individual NPDES permit.

## E. Final Effluent Limitations

1. Satisfaction of Anti-Backsliding Requirements

   All effluent limitations in this Order are at least as stringent as the effluent limitations in Orders No. R8-2007-0008 and R8-2004-0021. See also D, above.

2. Satisfaction of Antidegradation Policy

   Discharges in conformance with the requirements of this Order will not result in a lowering of water quality and therefore conform to antidegradation requirements specified in Resolution No. 68-16, which incorporates the federal antidegradation policy at 40 CFR 131.12 where, as here, it is applicable.

3. Stringency of Requirements for Individual Pollutants

   Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. 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 water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR Section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. Apart from certain standards changes resulting from the N/TDS Basin Plan amendment, all beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

4. Basis and Summary of Final Effluent Limitations for VOC Compounds and other Organics. The following Table 5 shows the basis for effluent lirnitations. (See also Tables 1, 2, 3 and 4 above)

## Table 5. Limitations Applicable to Discharges into Receiving Waters - Not Designated as MUN

| Constituent | Current Limitations | | Basis of Limitations | | | | |
|---|---|---|---|---|---|---|---|
| | Maximum Daily Concentration Limit (µg/L) | Average Monthly Concentration Limit, (µg/L) | MCL (µg/L) | CTR, (µg/L) | | | |
| | | | | Fresh Water | Salt water | Human Health Water and Organisms | Human Health Organisms only |
| Benzene | 2 | 1 | **[1]** | | | 1.2 | 71 |
| Toluene | 20 | 10 | 150 | | | 6800 | 200000 |
| Xylenes | 20. | 10 | 1750 | | | | |
| Ethylbenzene | 20. | 10 | 300 | | | | |
| Carbon Tetrachloride | 0.5 | 0.25 | 0.5 | | | **[0.25]** | 4.4 |
| Chloroform | 12 | 5.7 | | | | | |
| Dichlorobromomethane | 1.13 | 0.56 | | | | **[0.56]** | 46 |
| Methyl Ethyl Ketone | 241 | 120 | | | | | |
| Methyl Isobutyl Ketone | 241. | 120 | 120* | | | | |
| Methyl Tertiary Butyl Ether (MTBE) | 26 | 13 | **[13]** | | | | |
| Naphthalene | 20. | 10 | 17* | | | | |
| Tetrachloroethylene (PCE) | 1.6 | 0.8 | 5 | | | **[0.8]** | 8.85 |
| Trichloroethylene (TCE) | 5.4 | 2.7 | 5 | | | **[2.7]** | 81 |
| 1,1-Dichloroethane | 10. | 5 | 5 | | | | |
| 1,1-Dichloroethylene | 0.115 | 0.057 | 6 | | | **[0.057]** | 3.2 |
| 1,2-Dichloroethylene (sum of Cis & Trans) | 20. | 10 | | | | | |
| 1,2-Dichloroethylene (cis) | 12. | 6 | **[6]** | | | | |

## Table 5. Limitations Applicable to Discharges into Receiving Waters - Not Designated as MUN

| Constituent | Current Limitations | | Basis of Limitations | | | | |
|---|---|---|---|---|---|---|---|
| | Maximum Daily Concentration Limit (µg/L) | Average Monthly Concentration Limit, (µg/L) | MCL (µg/L) | CTR, (µg/L) | | | |
| | | | | Fresh Water | Salt water | Human Health Water and Organisms | Human Health Organisms only |
| 1,2-Dichloroethylene (trans) | 20. | 10 | **[10]** | | | | |
| 1,1,1-Trichloroethane (TCA) | 10. | 5 | 200 | | | | |
| Tert Butyl Alcohol (TBA) | 24 | 12 | **[12]*** | | | | |
| 1,4-Dioxane | 6 | 3 | **3*** | | | | |
| Perchlorate | 8 | 4 | 6* | | | | |
| 1,2,3-Trichloropropane (TCP) | 1.01 | 0.5 | | | | | |

*: Notification Level

Numbers in brackets and [BOLD] type in the Table are the basis of effluent limitations.

### F. Interim Effluent Limitations

Participation in the Working Group and timely and effective implementation of the Regional Board-approved Work Plans will constitute interim, performance-based effluent limitations to implement the wasteload allocations in the selenium TMDL. Adhering to these interim effluent limitations satisfies the requirement, during the implementation period of each Work Plan, to achieve compliance with the TMDLs and wasteload allocations "as soon as possible." Compliance with the final effluent limitations is required "as soon as possible" but no later than December 20, 2009 for selenium. Dischargers who elect not to participate in the Work Plan approach will be required to comply immediately with the final selenium effluent limitations or to implement a suitable offset program approved by the Executive Officer.

### G. Land Discharge Specifications – Not Applicable

### H. Reclamation Specifications – Not Applicable

## VI. RATIONALE FOR RECEIVING WATER LIMITATIONS

### A. Surface Water

The surface water receiving water limitations in the proposed Order are based upon the water quality objectives contained in the Basin Plan and are a required part of this Order.

### B. Groundwater

The receiving groundwater limitations in the proposed Order are based upon the water quality objectives contained in the Basin Plan.

## VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the CWC authorize the Water Boards to require technical and monitoring reports. The MRP, 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 MRP for this facility.

The principal purposes of a monitoring program by a Discharger are to:

1. Document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,
2. Facilitate self-policing by the Discharger in the prevention and abatement of pollution arising from waste discharge,

3. Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and to
4. Prepare water and wastewater quality inventories.

The MRP is a standard requirement in almost all NPDES permits issued by the Regional Water Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations and the California Water Code.

Monitoring is the primary means of ensuring that waste discharge requirements are met. It is also the basis for enforcement actions against Dischargers who are in violation of the waste discharge requirements issued by the Regional Water Board. All Dischargers enrolled under this general permit will be required to conduct monitoring in accordance with a monitoring program issued by the Executive Officer. Each monitoring and reporting program will be customized for each enrollee based on the characteristics of the groundwater being treated and discharged. The typical required constituents and frequency of analyses are tabulated in the self-monitoring program attached to this general permit as "Attachment E." This monitoring and reporting program will be revised as appropriate. An increase of the parameters or frequency of monitoring will be required when monitoring data show the presence of petroleum hydrocarbons that are not limited in this Order, or toxicity test failures. A reduction of the parameters or frequency of monitoring may be implemented with prior approval of the Executive Officer when monitoring data demonstrate that such reduction is warranted. In accordance with the State Policy, for new Dischargers, this Order requires Dischargers applying for coverage under this general permit to monitor for the 17 congeners specified in the Policy, once during dry weather and once during wet weather for a one-year period. Existing Dischargers will not be required to monitor for the 17 congeners if monitoring for these substances have been conducted and nothing have been detected.

### A. Influent Monitoring

Influent monitoring is required to determine the effectiveness of the treatment program and assess treatment plant performance.

### B. Effluent Monitoring

The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions and to allow ongoing characterization of discharges to determine potential adverse impacts and to determine continued suitability for coverage under the General Permit. Monitoring requirements are given in the proposed monitoring and reporting program (Attachment E). This provision requires compliance with the monitoring and reporting program, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The self monitoring program (SMP) is a standard requirement in almost all NPDES permits (including the proposed Order) issued by the Regional Water Board. In addition to containing definitions of terms, it specifies general

sampling/analytical protocols and the requirements of reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Water Board's policies. Pollutants to be monitored include all pollutants for which effluent limitations are specified.

In addition to discharge rate, effluent is monitored for hardness, pH, total suspended and total dissolved solids, salinity, and turbidity. Monitoring is also required for certain metals and other priority, toxic pollutants which have water quality criteria established by the NTR and CTR, are determined to be present in the groundwater at a specific site location.

## C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a shorter time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth.

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

This Order requires the Discharger to conduct acute toxicity testing of the effluent annually. This Order also requires the Discharger to conduct an Initial Investigation Toxicity Reduction Evaluation (IITRE) program when the acute toxicity test fails. Based on a review of monitoring data, there have been instances in which acute test failures can be attributed to salinity additions required to conduct the test. When this situation occurs, the Discharger normally performs additional acute testing of the effluent coupled with testing for all the priority pollutants. If the additional acute testing still fails and the priority pollutant scan shows no pollutants at levels of concern, acute testing is stopped and the acute test failure is presumed to be caused by ionic imbalance in the waste effluent (as described in relevant literature).

## D. Receiving Water Monitoring - Not Applicable

The MRP does not require characterization of receiving waters because most oftentimes treated discharges are to storm drains which are distant to receiving waters.

## E. Other Monitoring Requirements - Not Applicable

# VIII. RATIONALE FOR PROVISIONS

## A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 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 this Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

## B. Special Provisions

### 1. Reopener Provisions

This provision is based on 40 CFR Part 123. The Regional Water Board may reopen the permit to modify permit conditions and requirements. Causes for modifications include the promulgation of new regulations, or adoption of new regulations by the State Board or Regional Water Board, including revisions to the Basin Plan.

### 2. Special Studies and Additional Monitoring Requirements – Non NSMP Working Group

a. This Order requires the Discharger to provide a specific plan and schedule for the investigation and implementation of volume-reduction and other selenium, nitrogen and TDS Best Management Practices (BMPs), and to implement that plan upon approval by the Executive Officer.

### 3. Best Management Practices and Pollution Prevention

The provisions in the Order are based on requirements already specified in general Order No. R8-2004-0021.

## 4. Construction, Operation, and Maintenance Specifications

The provisions are based on requirements already specified in general Order No. R8-2007-0008, as a result of installing/constructing the necessary treatment systems required to comply with the general permit waste discharge requirements.

## 5. Special Provisions for Municipal Facilities - Not Applicable

## 6. Other Special Provisions

The other special provisions in the Order require the Discharger(s) to implement the nitrogen or selenium offset programs upon approval by the Executive Officer.

The other special provisions in the Order are based on requirements already specified in general Order No. R8-2004-0021. Some of the other special provisions are as follows:

Nitrogen and Selenium Management Program Working Group:

Certain of the Dischargers subject to Order No. R8-2004-0021 have formed a Nitrogen Selenium Management Program Working Group (NSMP WG) and have funded and are currently participating in a Work Plan. The major NSMP Work Plan tasks are listed below. As shown, these include the development of a nitrogen and/or selenium offset, trading or mitigation program that is to be based on a comprehensive understanding of the groundwater-related nutrient/selenium inputs to surface waters in the Newport Bay watershed. The Order includes the following:

a. Prepare a detailed Work Plan based upon the commitments and concepts presented in this Order and implement that Work Plan upon approval by the Executive Officer;
b. Manage the Work Plan with input from identified technical experts, relevant regulatory agencies and the public;
c. Perform complementary monitoring and assessment of nutrient and selenium sources in the watershed, utilizing, in part, ongoing studies performed by others;
d. Evaluate nutrient TMDL nutrient load reduction targets, focusing especially on groundwater-related sources, loadings and reductions; and
e. Develop a nutrient offset, trading or mitigation program based upon the outcome of other Work Plan elements.
f. Identify and assess selenium treatment technologies, including potential future technologies;
g. Identify and assess selenium Best Management Practices (BMPs) (including volume-reduction techniques)(task includes a "Quick Start" program for certain BMP assessments);
h. Facilitate demonstration testing of identified selenium treatment technologies and BMPs;

i. Develop and implement upon Executive Officer approval a selenium offset, trading or mitigation program based upon the outcome of complementary monitoring, treatment technology and BMP-related Work Plan elements; and

j. Develop a selenium site-specific objective for the Newport Bay/San Diego Creek watershed if appropriate based upon outcome of other Work Plan elements.

Completion of the approved Work Plan is expected to result in the development of a comprehensive understanding of and management plan for nitrogen and selenium in groundwater-related inflows to surface waters in the Newport Bay watershed and as such, goes beyond issues specific to the discharges regulated under this Order. The management plans are expected to provide recommendations for specific load and wasteload allocations for the groundwater-related components of the "undefined source" category identified in the TMDLs, in addition to offset, trading or mitigation program recommendations. Revisions to the TMDLs and/or to the requirements in this Order may be necessary based on the results of the Work Plan assessments and resultant management plans.

When and if the Working Group has identified the selenium treatment technology (-ies) appropriate for these types of discharge, this Order may be reopened to include applicable technology-based effluent limitations, as appropriate.

This Order also recognizes that the Nitrogen Selenium Management Program Working Group is investigating selenium treatment and control technologies. This Order requires that if a practicable selenium treatment technology becomes available, the Discharger shall implement that technology and comply with the final selenium limits in this Order within one year of notification of the need to do so by the Regional Water Board, but in no case later than December 20, 2009.

### 7. Compliance Schedules

The compliance schedule provisions in the Order are based on requirements already specified in general Order No. R8-2004-0021.

## IX. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Santa Ana Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) general permit for discharges to surface waters of extracted and treated groundwater resulting from groundwater dewatering operations and/or groundwater cleanup activities at sites within the San Diego Creek/Newport Bay watershed polluted by petroleum hydrocarbons, solvents, metals and/or salts. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

## A. Notification of Interested Parties

The Regional Water Board has notified the Dischargers and interested agencies and persons of its intent to prescribe waste discharge requirements in this General Permit and provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the posting of Notice of Public at the Regional Water Board website: http://www.waterboards.ca.gov/santaana , on October 31, 2007 and publication in the Orange County Register for one day.

## 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 Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on November 9, 2007 to:

Jane Qiu
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

## C. Public Hearing

The Regional 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: | November 30, 2007 |
| Time: | 9:00 A.M. |
| Location: | Irvine Ranch Water District<br>15600 Sand Canyon Avenue<br>Irvine, CA |

Interested persons are invited to attend. At the public hearing, the Regional 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 http://www.waterboards.ca.gov/santaana 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 Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional 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 Report of Waste Discharge (RWD), related documents, 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 9:00 a.m. and 3:00 p.m. Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (951) 782-41308.

## F. Register of Interested Persons

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

## G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Jane Qiu at (951) 320-2008.

## ATTACHMENT G - EPA PRIORITY POLLUTANT LIST

| EPA PRIORITY POLLUTANT LIST | | | | | |
|---|---|---|---|---|---|
| **Metals** | | **Acid Extractibles** | | **Base/Neutral Extractibles (continuation)** | |
| 1. | Antimony | 45. | 2-Chlorophenol | 91. | Hexachloroethane |
| 2. | Arsenic | 46. | 2,4-Dichlorophenol | 92. | Indeno (1,2,3-cd) Pyrene |
| 3. | Beryllium | 47. | 2,4-Dimethylphenol | 93. | Isophorone |
| 4. | Cadmium | 48. | 2-Methyl-4,6-Dinitrophenol | 94. | Naphthalene |
| 5a. | Chromium (III) | 49. | 2,4-Dinitrophenol | 95. | Nitrobenzene |
| 5b. | Chromium (VI) | 50. | 2-Nitrophenol | 96. | N-Nitrosodimethylamine |
| 6. | Copper | 51. | 4-Nitrophenol | 97. | N-Nitrosodi-N-Propylamine |
| 7. | Lead | 52. | 3-Methyl-4-Chlorophenol | 98. | N-Nitrosodiphenylamine |
| 8. | Mercury | 53. | Pentachlorophenol | 99. | Phenanthrene |
| 9. | Nickel | 54. | Phenol | 100. | Pyrene |
| 10. | Selenium | 55. | 2, 4, 6 – Trichlorophenol | 101. | 1,2,4-Trichlorobenzene |
| 11. | Silver | | **Base/Neutral Extractibles** | | **Pesticides** |
| 12. | Thallium | 56. | Acenaphthene | 102. | Aldrin |
| 13. | Zinc | 57. | Acenaphthylene | 103. | Alpha BHC |
| | **Miscellaneous** | 58. | Anthracene | 104. | Beta BHC |
| 14. | Cyanide | 59. | Benzidine | 105. | Delta BHC |
| 15. | Asbestos (not required unless requested) | 60. | Benzo (a) Anthracene | 106. | Gamma BHC |
| 16. | 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD) | 61. | Benzo (a) Pyrene | 107. | Chlordane |
| | **Volatile Organics** | 62. | Benzo (b) Fluoranthene | 108. | 4, 4' - DDT |
| 17. | Acrolein | 63. | Benzo (g,h,i) Perylene | 109. | 4, 4' - DDE |
| 18. | Acrylonitrile | 64. | Benzo (k) Fluoranthene | 110. | 4, 4' - DDD |
| 19. | Benzene | 65. | Bis (2-Chloroethoxy) Methane | 111. | Dieldrin |
| 20. | Bromoform | 66. | Bis (2-Chloroethyl) Ether | 112. | Alpha Endosulfan |
| 21. | Carbon Tetrachloride | 67. | Bis (2-Chloroisopropyl) Ether | 113. | Beta Endosulfan |
| 22. | Chlorobenzene | 68. | Bis (2-Ethylhexyl) Phthalate | 114. | Endosulfan Sulfate |
| 23. | Chlorodibromomethane | 69. | 4-Bromophenyl Phenyl Ether | 115. | Endrin |
| 24. | Chloroethane | 70. | Butylbenzyl Phthalate | 116. | Endrin Aldehyde |
| 25. | 2-Chloroethyl Vinyl Ether | 71. | 2-Chloronaphthalene | 117. | Heptachlor |
| 26. | Chloroform | 72. | 4-Chlorophenyl Phenyl Ether | 118. | Heptachlor Epoxide |
| 27. | Dichlorobromomethane | 73. | Chrysene | 119. | PCB 1016 |
| 28. | 1,1-Dichloroethane | 74. | Dibenzo (a,h) Anthracene | 120. | PCB 1221 |
| 29. | 1,2-Dichloroethane | 75. | 1,2-Dichlorobenzene | 121. | PCB 1232 |
| 30. | 1,1-Dichloroethylene | 76. | 1,3-Dichlorobenzene | 122. | PCB 1242 |
| 31. | 1,2-Dichloropropane | 77. | 1,4-Dichlorobenzene | 123. | PCB 1248 |
| 32. | 1,3-Dichloropropylene | 78. | 3,3'-Dichlorobenzidine | 124. | PCB 1254 |
| 33. | Ethylbenzene | 79. | Diethyl Phthalate | 125. | PCB 1260 |
| 34. | Methyl Bromide | 80. | Dimethyl Phthalate | 126. | Toxaphene |
| 35. | Methyl Chloride | 81. | Di-n-Butyl Phthalate | | |
| 36. | Methylene Chloride | 82. | 2,4-Dinitrotoluene | | |
| 37. | 1,1,2,2-Tetrachloroethane | 83. | 2-6-Dinitrotoluene | | |
| 38. | Tetrachloroethylene | 84. | Di-n-Octyl Phthalate | | |
| 39. | Toluene | 85. | 1,2-Dipenylhydrazine | | |
| 40. | 1,2-Trans-Dichloroethylene | 86. | Fluoranthene | | |
| 41. | 1,1,1-Trichloroethane | 87. | Fluorene | | |
| 42. | 1,1,2-Trichloroethane | 88. | Hexachlorobenzene | | |
| 43. | Trichloroethylene | 89. | Hexachlorobutadiene | | |
| 44. | Vinyl Chloride | 90. | Hexachlorocyclopentadiene | | |

## ATTACHMENT H – MINIMUM LEVELS

### MINIMUM LEVELS IN PPB (µg/l)

| Table 1- VOLATILE SUBSTANCES[1] | GC | GCMS |
|---|---|---|
| Acrolein | 2.0 | 5 |
| Acrylonitrile | 2.0 | 2 |
| Benzene | 0.5 | 2 |
| Bromoform | 0.5 | 2 |
| Carbon Tetrachloride | 0.5 | 2 |
| Chlorobenzene | 0.5 | 2 |
| Chlorodibromomethane | 0.5 | 2 |
| Chloroethane | 0.5 | 2 |
| Chloroform | 0.5 | 2 |
| Dichlorobromomethane | 0.5 | 2 |
| 1,1 Dichloroethane | 0.5 | 1 |
| 1,2 Dichloroethane | 0.5 | 2 |
| 1,1 Dichloroethylene | 0.5 | 2 |
| 1,2 Dichloropropane | 0.5 | 1 |
| 1,3 Dichloropropylene (volatile) | 0.5 | 2 |
| Ethylbenzene | 0.5 | 2 |
| Methyl Bromide (*Bromomethane* ) | 1.0 | 2 |
| Methyl Chloride (*Chloromethane* ) | 0.5 | 2 |
| Methylene Chloride (*Dichloromethane*) | 0.5 | 2 |
| 1,1,2,2 Tetrachloroethane | 0.5 | 1 |
| Tetrachloroethylene | 0.5 | 2 |
| Toluene | 0.5 | 2 |
| trans-1,2 Dichloroethylene | 0.5 | 1 |
| 1,1,1 Trichloroethane | 0.5 | 2 |
| 1,1,2 Trichloroethane | 0.5 | 2 |
| Trichloroethylene | 0.5 | 2 |
| Vinyl Chloride | 0.5 | 2 |
| 1,2 Dichlorobenzene (volatile) | 0.5 | 2 |
| 1,3 Dichlorobenzene (volatile) | 0.5 | 2 |
| 1,4 Dichlorobenzene (volatile) | 0.5 | 2 |

## Selection and Use of Appropriate ML Value:

ML Selection: When there is more than one ML value for a given substance, the discharger may select any one of those ML values, and their associated analytical methods, listed in this Attachment that are below the calculated effluent limitation for compliance determination. If no ML value is below the effluent limitation, then the discharger shall select the lowest ML value, and its associated analytical method, listed in the PQL Table.

ML Usage: The ML value in this Attachment represents the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences. Assuming that all method-specific analytical steps are followed, the ML value will also represent, after the appropriate application of method-specific factors, the lowest standard in the calibration curve for that specific analytical technique. Common analytical practices sometimes require different treatment of the sample relative to calibration standards.
Note: chemical names in parenthesis and italicized is another name for the constituent.

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1 *The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.*

## MINIMUM LEVELS IN PPB (µg/l)

| Table 2 – Semi-Volatile Substances[2] | GC | GCMS | LC |
|---|---|---|---|
| 2-Chloroethyl vinyl ether | 1 | 1 | |
| 2 Chlorophenol | 2 | 5 | |
| 2,4 Dichlorophenol | 1 | 5 | |
| 2,4 Dimethylphenol | 1 | 2 | |
| 4,6 Dinitro-2-methylphenol | 10 | 5 | |
| 2,4 Dinitrophenol | 5 | 5 | |
| 2- Nitrophenol | | 10 | |
| 4- Nitrophenol | 5 | 10 | |
| 4 Chloro-3-methylphenol | 5 | 1 | |
| 2,4,6 Trichlorophenol | 10 | 10 | |
| Acenaphthene | 1 | 1 | 0.5 |
| Acenaphthylene | | 10 | 0.2 |
| Anthracene | | 10 | 2 |
| Benzidine | | 5 | |
| Benzo (a) Anthracene (*1,2 Benzanthracene*) | 10 | 5 | |
| Benzo(a) pyrene (*3,4 Benzopyrene*) | | 10 | 2 |
| Benzo (b) Flouranthene (*3,4 Benzofluoranthene*) | | 10 | 10 |
| Benzo(g,h,i)perylene | | 5 | 0.1 |
| Benzo(k)fluoranthene | | 10 | 2 |
| bis 2-(1-Chloroethoxyl) methane | | 5 | |
| bis(2-chloroethyl) ether | 10 | 1 | |
| bis(2-Chloroisopropyl) ether | 10 | 2 | |
| bis(2-Ethylhexyl) phthalate | 10 | 5 | |
| 4-Bromophenyl phenyl ether | 10 | 5 | |
| Butyl benzyl phthalate | 10 | 10 | |
| 2-Chloronaphthalene | | 10 | |
| 4-Chlorophenyl phenyl ether | | 5 | |
| Chrysene | | 10 | 5 |
| Dibenzo(a,h)-anthracene | | 10 | 0.1 |
| 1,2 Dichlorobenzene (semivolatile) | 2 | 2 | |
| 1,3 Dichlorobenzene (semivolatile) | 2 | 1 | |
| 1,4 Dichlorobenzene (semivolatile) | 2 | 1 | |
| 3,3' Dichlorobenzidine | | 5 | |
| Diethyl phthalate | 10 | 2 | |
| Dimethyl phthalate | 10 | 2 | |
| di-n-Butyl phthalate | | 10 | |
| 2,4 Dinitrotoluene | 10 | 5 | |
| 2,6 Dinitrotoluene | | 5 | |
| di-n-Octyl phthalate | | 10 | |
| 1,2 Diphenylhydrazine | | 1 | |
| Fluoranthene | 10 | 1 | 0.05 |
| Fluorene | | 10 | 0.1 |
| Hexachloro-cyclopentadiene | 5 | 5 | |
| 1,2,4 Trichlorobenzene | 1 | 5 | |

## MINIMUM LEVELS IN PPB (µg/l)

| Table 2 - SEMI-VOLATILE SUBSTANCES[2] | GC | GCMS | LC | COLOR |
|---|---|---|---|---|
| Pentachlorophenol | 1 | 5 | | |
| Phenol [3] | 1 | 1 | | 50 |
| Hexachlorobenzene | 5 | 1 | | |
| Hexachlorobutadiene | 5 | 1 | | |
| Hexachloroethane | 5 | 1 | | |
| Indeno(1,2,3,cd)-pyrene | | 10 | 0.05 | |
| Isophorone | 10 | 1 | | |
| Naphthalene | 10 | 1 | 0.2 | |
| Nitrobenzene | 10 | 1 | | |
| N-Nitroso-dimethyl amine | 10 | 5 | | |
| N-Nitroso -di n-propyl amine | 10 | 5 | | |
| N-Nitroso diphenyl amine | 10 | 1 | | |
| Phenanthrene | | 5 | 0.05 | |
| Pyrene | | 10 | 0.05 | |

| Table 3– INORGANICS[4] | FAA | GFAA | ICP | ICPMS | SPGFAA | HYDRIDE | CVAA | COLOR | DCP |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 10 | 5 | 50 | 0.5 | 5 | 0.5 | | | 1000 |
| Arsenic | | 2 | 10 | 2 | 2 | 1 | | 20 | 1000 |
| Beryllium | 20 | 0.5 | 2 | 0.5 | 1 | | | | 1000 |
| Cadmium | 10 | 0.5 | 10 | 0.25 | 0.5 | | | | 1000 |
| Chromium (total) | 50 | 2 | 10 | 0.5 | 1 | | | | 1000 |
| Chromium VI | 5 | | | | | | | 10 | |
| Copper | 25 | 5 | 10 | 0.5 | 2 | | | | 1000 |
| Lead | 20 | 5 | 5 | 0.5 | 2 | | | | 10000 |
| Mercury | | | | 0.5 | | | 0.2 | | |
| Nickel | 50 | 5 | 20 | 1 | 5 | | | | 1000 |
| Selenium | | 5 | 10 | 2 | 5 | 1 | | | 1000 |
| Silver | 10 | 1 | 10 | 0.25 | 2 | | | | 1000 |
| Thallium | 10 | 2 | 10 | 1 | 5 | | | | 1000 |
| Zinc | 20 | | 20 | 1 | 10 | | | | 1000 |
| Cyanide | | | | | | | | 5 | |

2 *With the exception of phenol by colorimetric technique, the normal method-specific factor for these substances is 1000, therefore, the lowest standards concentration in the calibration curve is equal to the above ML value for each substance multiplied by 1000.*

3 *Phenol by colorimetric technique has a factor of 1.*

4 *The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.*

**MINIMUM LEVELS IN PPB (µg/l)**

| Table 4- PESTICIDES – PCBs[5] | GC |
|---|---|
| Aldrin | 0.005 |
| alpha–BHC (*a-Hexachloro-cyclohexane*) | 0.01 |
| beta–BHC (*b-Hexachloro-cyclohexane*) | 0.005 |
| Gamma–BHC (*Lindane; g-Hexachloro-cyclohexane*) | 0.02 |
| Delta-BHC (*d-Hexachloro-cyclohexane*) | 0.005 |
| Chlordane | 0.1 |
| 4,4'-DDT | 0.01 |
| 4,4'-DDE | 0.05 |
| 4,4'-DDD | 0.05 |
| Dieldrin | 0.01 |
| Alpha-Endosulfan | 0.02 |
| Beta-Endosulfan | 0.01 |
| Endosulfan Sulfate | 0.05 |
| Endrin | 0.01 |
| Endrin Aldehyde | 0.01 |
| Heptachlor | 0.01 |
| Heptachlor Epoxide | 0.01 |
| PCB 1016 | 0.5 |
| PCB 1221 | 0.5 |
| PCB 1232 | 0.5 |
| PCB 1242 | 0.5 |
| PCB 1248 | 0.5 |
| PCB 1254 | 0.5 |
| PCB 1260 | 0.5 |
| Toxaphene | 0.5 |

Techniques:
GC - Gas Chromatography
GCMS - Gas Chromatography/Mass Spectrometry
HRGCMS - High Resolution Gas Chromatography/Mass Spectrometry (i.e., EPA 1613, 1624, or 1625)
LC - High Pressure Liquid Chromatography
FAA - Flame Atomic Absorption
GFAA - Graphite Furnace Atomic Absorption
HYDRIDE - Gaseous Hydride Atomic Absorption
CVAA - Cold Vapor Atomic Absorption
ICP - Inductively Coupled Plasma
ICPMS - Inductively Coupled Plasma/Mass Spectrometry
SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
DCP - Direct Current Plasma
COLOR - Colorimetric

5 *The normal method-specific factor for these substances is 100, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 100.*

## ATTACHMENT I – TRIGGERS FOR MONITORING PRIORITY POLLUTANTS

| | Constituent | µg/L |
|---|---|---|
| 1 | Antimony | 7 |
| 2 | Arsenic | 75 |
| 3 | Beryllium | -- |
| 4 | Cadmium | 1.9 |
| 5a | Chromium III | 183 |
| 5b | Chromium VI | 5.7 |
| 6 | Copper | 8.1 |
| 7 | Lead | |
| 8 | Mercury | 0.026 |
| 9 | Nickel | 47 |
| 10 | Selenium | 2.5 |
| 11 | Silver | 6.7 |
| 12 | Thallium | 0.85 |
| 13 | Zinc | 108 |
| 14 | Cyanide | 2.6 |
| 15 | Asbestos | -- |
| 16 | 2,3,7,8-TCDD (Dioxin) | 0.000000007 |
| 17 | Acrolein | 160 |
| 18 | Acrylonitrile | 0.03 |
| 19 | Benzene | 0.6 |
| 20 | Bromoform | 2.2 |
| 21 | Carbon Tetrachloride | 0.13 |
| 22 | Chlorobenzene | 340 |
| 23 | Chlorodibromomethane | 0.22 |
| 24 | Chloroethane | -- |
| 25 | 2-Chloroethyl vinyl ether | -- |
| 26 | Chloroform | -- |
| 27 | Dichlorobromomethane | 0.28 |
| ***28*** | ***1,1-Dichloroethane*** | ***5*** |
| 29 | 1,2-Dichloroethane | 0.19 |
| 30 | 1,1-Dichloroethylene | 0.029 |
| 31 | 1,2-Dichloropropane | 0.26 |
| 32 | 1,3-Dichloropropylene | 5 |
| ***33*** | ***Ethylbenzene*** | ***0.3*** |
| 34 | Methyl Bromide | 24 |
| 35 | Methyl Chloride | -- |
| 36 | Methylene Chloride | 2.4 |
| 37 | 1,1,2,2-Tetratchloroethane | 0.085 |

| | Constituent | µg/L |
|---|---|---|
| 38 | Tetratchloroethylene | 0.4 |
| ***39*** | ***Toluene*** | ***0.15*** |
| ***40*** | ***1,2,-Trans-dichloroethylene*** | ***10*** |
| ***41*** | ***1,1,1-Trichloroethane*** | ***200*** |
| 42 | 1,1,2-Trichloroethane | 0.3 |
| 43 | Trichloroethylene | 1.35 |
| 44 | Vinyl Chloride | ***0.5*** |
| 45 | 2-Chlorophenol | 60 |
| 46 | 2,4-Dichlorophenol | 46.5 |
| 47 | 2,4-Dimethylphenol | 270 |
| 48 | 2-Methy-4,6-Dinitrophenol | 6.7 |
| 49 | 2,4-Dinitrophenol | 35 |
| 50 | 2-Nitrophenol | -- |
| 51 | 4-Nitrophenol | -- |
| 52 | 3-Methyl-4-Chlorophenol | -- |
| 53 | Pentachlorophenol | 0.14 |
| 54 | Phenol | 10500 |
| 55 | 2,4,6-Trichlorophenol | 1.05 |
| 56 | Acenapthene | 600 |
| 57 | Acenapthylene | -- |
| 58 | Anthracene | 4800 |
| 59 | Benzidine | 0.00006 |
| 60 | Benzo (a) anthracene | 0.0022 |
| 61 | Benzo (a) pyrene | 0.0022 |
| 62 | Benzo (b) fluoranthene | 0.0022 |
| 63 | Benzo (g,h,i) pyrylene | -- |
| 64 | Benzo (k) fluorantene | 0.0022 |
| 65 | Bis (2-Chloroethoxy) methane | -- |
| 66 | Bis (2-Chloroethyl) ether | 0.016 |
| 67 | Bis (2-Chloroisopropyl) ether | 700 |
| 68 | Bis (2-ethyhexyl) phthalate | 0.9 |
| 69 | 4-Bromophenyl phenyl ether | -- |
| 70 | Butyl benzyl phthalate | 1500 |
| 71 | 2- Chloronapthalene | 850 |
| 72 | 4-Chlrorphenyl phenyl ether | -- |
| 73 | Chrysene | 0.0022 |
| 74 | Dibenzo (a,h) anthracene | 0.0022 |
| ***75*** | ***1,2-Dichlorobenzene*** | ***0.6*** |

See notes below.

**ATTACHMENT I. -Continued**

| | CONSTITUENT | µg/L |
|---|---|---|
| 76 | 1,3-Dichlorobenzene | 200 |
| ***77*** | ***1,4-Dichlorobenzene*** | ***5*** |
| 78 | 3,3-Dichlorobenzidine | 0.02 |
| 79 | Diethyl phthalate | 11,500 |
| 80 | Dimethyl phthalate | 156,500 |
| 81 | Di-N-butyl phthalate | 1,350 |
| 82 | 2,4-Dinitrotoluene | 0.055 |
| 83 | 2,6-Dinitrotoluene | -- |
| 84 | Di-N-octyl phthalate | -- |
| 85 | 1,2-Diphenylhydrazine | 0.02 |
| 86 | Fluoranthene | 150 |
| 87 | Fluorene | 650 |
| 88 | Hexachlorobenzene | 0.00038 |
| 89 | Hexachlorobutadiene | 0.22 |
| ***90*** | ***Hexachlorocyclopentadiene*** | ***50*** |
| 91 | Hexachloroethane | 0.95 |
| 92 | Indeno (1,2,3-cd) pyrene | 0.0022 |
| 93 | Isophorone | 4.2 |
| ***94*** | ***Naphthalene*** | ***17*** |
| 95 | Nitrobenzene | 8.5 |
| 96 | N-Nitrosodimethylamine | 0.00035 |
| 97 | N-Nitrosodi-N-propylamine | 0.0025 |
| 98 | N-Nitrosodiphenylamine | 2.5 |
| 99 | Phenantrene | -- |

| | CONSTITUENT | µg/L |
|---|---|---|
| 100 | Pyrene | 480 |
| ***101*** | ***1,2,4 -Trichlorobenzene*** | ***5*** |
| 102 | Aldrin | 0.00007 |
| 103 | BHC Alpha | 0.0020 |
| 104 | BHC Beta | 0.007 |
| 105 | BHC Gamma | 0.010 |
| 106 | BHC Delta | -- |
| 107 | Chlordane | 0.00029 |
| 108 | 4,4-DDT | 0.0003 |
| 109 | 4,4-DDE | 0.0003 |
| 110 | 4,4-DDD | 0.00042 |
| 111 | Dieldrin | 0.00007 |
| 112 | Endosulfan Alpha | 0.028 |
| 113 | Endosulfan Beta | 0.028 |
| 114 | Endosulfan Sulfate | 55 |
| 115 | Endrin | 0.018 |
| 116 | Endrin Aldehyde | 0.38 |
| 117 | Heptachlor | 0.00011 |
| 118 | Heptachlor Epoxide | 0.00005 |
| 119 | PCB 1016 | 0.000085 |
| 120 | PCB 1221 | 0.000085 |
| 125 | PCB 1260 | 0.000085 |
| 126 | Toxaphene | 0.00038 |
| | | |

Notes:

1. For constituents not shown italicized, the values shown in the Table are fifty percent of the most stringent applicable receiving water objectives (freshwater or human health (consumption of water and organisms) as specified for that pollutant in 40 CFR 131.38[6]).
2. For constituents shown bold and italicized, the values shown in the Table are based on the California Department of Health Services maximum contaminant levels (MCLs) or Notification Level. Notification Level based trigger is underlined.
3. For hardness dependent metals, the hardness value used is 200 mg/L and for pentachlorophenol, the pH value used is 7.5 standard units.

[6] *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*