California Regional Water Quality Control Board
North Coast Region

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Arnold Schwarzenegger
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ORDER NO. R1-2010-0034
NPDES NO. CA0025135
WDID NO. 1B82046OSON

WASTE DISCHARGE REQUIREMENTS AND MASTER RECLAMATION PERMIT

FOR THE

CITY OF HEALDSBURG
WASTEWATER TREATMENT, RECLAMATION AND DISPOSAL FACILITY
SONOMA COUNTY

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The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	City of Healdsburg
Name of Facility	City of Healdsburg Wastewater Treatment, Reclamation and Disposal Facility
Facility Address	401 Grove Street
	Healdsburg, CA 95448
	Sonoma County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

The discharge by the City of Healdsburg to the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Disinfected tertiary treated municipal wastewater	38º 34’ 48” N	122° 51’ 48” W	Basalt Pond, part of the Russian River
002	Disinfected tertiary treated municipal wastewater	--	--	25 million gallon recycled water storage pond
003	Disinfected tertiary treated municipal wastewater	--	--	Authorized reclamation sites

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	October 28, 2010
This Order shall become effective on:	December 1, 2010
This Order shall expire on:	November 30, 2015
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	February 1, 2015

IT IS HEREBY ORDERED, that this Order supersedes Order No. R1-2005-0085 (January 17, 2008 revision) and Monitoring and Reporting Program (MRP) No. R1-2004-0111 upon the effective date specified in Table 3. This action in no way prevents the Regional Water Quality Control Board from taking any enforcement action for past violations of the previous permit. If any part of this Order is subject to a temporary stay of enforcement, unless otherwise specified, the Discharger shall comply with the analogous portions of Order No. R1-2005-0084 (January 17, 2008 revision) and MRP No. R1-2004-0111, which shall remain in effect for all purposes during the pendency of the stay.

I, Catherine Kuhlman, 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, North Coast Region, on **October 28, 2010**.

_____

Catherine Kuhlman, Executive Officer

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I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 4. Facility Information

Discharger	City of Healdsburg
Name of Facility	City of Healdsburg Wastewater Treatment, Reclamation and Disposal Facility
Facility Address	340 Foreman Lane
	Healdsburg, CA 95448
	Sonoma County
Facility Contact, Title, and Phone	Mike Kirn, Director of Public Works, (707) 431-3346
Mailing Address	401 Grove Street, Healdsburg, CA 95448
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	1.4 million gallons per day (mgd) (average dry weather treatment capacity) 4.0 mgd (peak wet weather treatment capacity)

II. FINDINGS

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board), finds:

A. Background. The City of Healdsburg (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2005-0084 (January 17, 2008 revision), Monitoring and Reporting Program (MRP) No. R1-2004-0111, and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0025135. The Discharger submitted a Report of Waste Discharge, dated July 25, 2008, and applied for a NPDES permit renewal to discharge up to 1.4 mgd average dry weather flow and 4.0 mgd peak wet weather flow of disinfected advanced treated wastewater from the City of Healdsburg Water Reclamation Facility, hereinafter Facility. Supplemental information was requested on April 9, 2009 and received on May 15, 2009. A site visit was conducted on May 5, 2009, to observe operations and collect additional data to develop permit limitations and conditions. The application was deemed complete on May 18, 2009.

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. Facility Description. The Discharger owns and operates a wastewater collection, treatment, and disposal facility and provides sewerage service to a

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population of approximately 12,200, including commercial, industrial, and residential customers.

The Discharger's wastewater collection system includes approximately 36 miles of sewer mains, 800 manholes, nine sewer lift stations, and several miles of pressurized force main. The oldest portions of the system are approximately 100 years old. Mains range in size from 4 inches to 33 inches. Nine sewer lift stations located throughout the City of Healdsburg convey sewage from isolated low-lying areas into the gravity main system. All sewage discharged to the sewer collection system is ultimately collected and conveyed through a 33-inch gravity main to the Magnolia Lift Station, which is the largest lift station.

The treatment facility has design treatment capacities of 1.4 mgd (average dry weather flow) and 4.0 mgd (maximum sustained peak wet-weather flow). The Discharger's upgraded advanced wastewater treatment Facility began operating in April 2008. Wastewater treatment is accomplished by influent screening, grit removal, extended aeration with biological nutrient removal (BNR), microfiltration through hollow membrane fibers (membrane bioreactor), and ultraviolet (UV) light disinfection. The treatment plant includes a 5.0 million gallon aerated influent equalization basin, two digestion tanks, centrifuge equipment for biosolids dewatering, and effluent disposal to the adjacent Basalt Pond. The Discharger also has an approximately 25 million gallon membrane-lined pond that will be used for the storage of tertiary treated recycled water prior to distribution to the City's future reclamation system.

Tertiary treated, disinfected wastewater is currently discharged year-round to Basalt Pond, within the Geyserville hydrologic subarea of the Middle Russian River hydrologic area. In an appeal of a lawsuit brought under the citizen-suit provision of the Clean Water Act to the federal district court for the Northern District of California, the Ninth Circuit Court of Appeals held that discharges to Basalt Pond are subject to the Clean Water Act because the Basalt Pond (1) contains wetlands that are adjacent to the Russian River, a navigable water of the United States, and (2) possesses a significant nexus to the Russian River because there is a hydrologic connection between Basalt Pond and the Russian River in that the waters from the Basalt Pond seep into the Russian River and significantly affect the physical, biological and chemical integrity of the Russian River. (Northern Calif. River Watch v. Healdsburg, 497 F.3d 993 (2007))

Basalt Pond is one of several existing gravel pits that were excavated adjacent to the Russian River in alluvial deposits of sand and gravel. These deposits are part of an important groundwater aquifer that supplies domestic and agricultural well water. Basalt Pond has a surface area of 52 acres, and a maximum depth of 55 feet. Basalt Pond was excavated in the historic floodplain of the Russian River. A levee, composed primarily of soil and alluvial material, was constructed

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to separate Basalt Pond from surface flows in the Russian River. The levee is not an engineered impermeable barrier, thus it does not prevent discharges of effluent from reaching the Russian River. Syar Industries, Inc. (Syar) owns the land where Basalt Pond is located. The Discharger and Syar have an agreement allowing effluent from the WWTF to be discharged to the Basalt Pond. As the owner and operator of the WWTF, the Discharger is responsible for ensuring that it operates the WWTF in compliance with this Order.

The *Water Quality Control Plan for the North Coast Region* (hereinafter Basin Plan) prohibits discharges to the Russian River and its tributaries from May 15 through September 30. In order to comply with the seasonal discharge prohibition, the Discharger is planning to construct a reclamation system. The Discharger is planning to discharge tertiary treated, disinfected wastewater to the 25 million gallon recycled water storage pond at Discharge Point 002. Recycled water will be delivered from the recycled water storage pond to the recycled water distribution system by an effluent pump station. The recycled water distribution system will deliver recycled water to authorized reclamation sites at Discharge Point 003.

The City uses a proprietary solids removal and digestion process that combines aerobic and anaerobic processes. Solids are periodically removed from the biological process and transferred to two digester tanks, referred to as interchange reactors. Transfer to the interchange reactors occurs in a daily decant/fill process, where decanted clear liquid from the interchange reactors is returned to the biological process, and the volume decanted is replaced with solids from the biological process. All solids transferred from the biological process to the interchange tanks are first passed through a 250 micron rotary drum screen to remove inert non-biodegradable material, which is compacted and conveyed to a separate dumpster. In the final solids removal step, digested solids are pumped from the interchange reactor tanks, dosed with polymer for thickening, and then dewatered in a centrifuge and conveyed to a dumpster. All solids are currently being disposed at the Redwood Landfill in Marin County.

Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. Legal Authorities. This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters.

This Order also serves as Waste Discharge Requirements (WDRs) for discharges to land and a Master Reclamation Permit pursuant to article 4,

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chapter 4, division 7 of the Water Code (commencing with section 13260 and 13520, respectively).

D. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, 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 constitutes part of the Findings for this Order. Attachments A through E and G are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.

This action also involves the adoption of a Master Reclamation Permit for irrigation using treated effluent. The Discharger certified a final environmental impact report (FEIR) for its wastewater treatment plant upgrade and reclamation project on June 13, 2005 in accordance with CEQA (Public Resources Code section 210000, et seq). The Discharger also intends to certify an Initial Study/Mitigated Negative Declaration for the Syar Property Recycled Wastewater Agricultural Irrigation Project in the near future in accordance with CEQA.

As a responsible agency under CEQA, the Regional Water Board is required to consider the final certified CEQA document(s) and reach its own conclusions on whether and how to approve a permit for the Discharger's reclamation plan. Prior to approving the Master Reclamation Permit, the Regional Water Board considered the effects of the Discharger's reclamation plan as identified in the certified FEIR. In considering alternatives and mitigation measures, the Regional Water Board only has the responsibility for mitigating or avoiding those direct or indirect environmental effects of those parts of the reclamation plan that are within its jurisdiction to approve (Public Resources Code, section 21002.1(d); California Code of Regulations, title 14, section 15096(g) and (h)). The Regional Water Board has required, as a condition of this Order, mitigation measures for those potentially significant impacts over which the Regional Water Board has authority. The Regional Water Board finds that all potentially significant environmental effects to water quality from the construction and use of the Discharger's proposed reclamation system, as approved by this Order will be reduced to less-than-significant levels with the incorporation of mitigation measures as described in section III.B of the Fact Sheet and technical reports submitted pursuant to water reclamation technical report requirements in section C of Attachment G, demonstrating that recycled water will be applied at hydraulic and nutrient agronomic rates. The Regional Water

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Board will file a Notice of Determination with the Office of Planning and Research.

For any future proposed expansions of the reclamation system, beyond that identified in the existing certified CEQA document, the Discharger will be the lead agency for CEQA.

The Discharger must ensure that all reclamation activities,comply with the Water Reclamation Requirements and Provisions contained in Attachment G to this Order.

F. Technology-based Effluent Limitations. Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations[1], require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at Part 133 and 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 (Attachment F).

G. Water Quality-Based Effluent Limitations. 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).

[1] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

H. Water Quality Control Plans. The Regional Water Board adopted a *Water Quality Control Plan for the North Coast Region* (hereinafter the Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Russian River are described in Table 5, below.

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Basalt Pond, part of the Russian River within the Geyserville Hydrologic Subarea of the Russian River Hydrologic Unit Note: The beneficial uses listed here are for the Russian River due to the hydrologic connection between Basalt Pond and the Russian River	Existing: • Municipal and Domestic Supply (MUN) • Agricultural Supply (AGR) • Industrial Service Supply (IND) • Ground Water Recharge (GWR) • Freshwater Replenishment (FRSH) • Navigation (NAV) • Water Contact Recreation (REC-1) • Non-Contact Water Recreation (REC-2) • Commercial and Sport Fishing (COMM) • Warm Freshwater Habitat (WARM) • Cold Freshwater Habitat (COLD) • Wildlife Habitat (WILD) • Preservation of Rare, Threatened, or Endangered Species (RARE) • Migration of Aquatic Organisms (MIGR) • Spawning, Reproduction, and/or Early Development (SPWN) Potential: •Industrial Process Supply (PRO) •Hydropower Generation (POW) •Shellfish Harvesting (SHELL) •Aquaculture (AQUA)
001, 002, and 003	Groundwater	Existing •Municipal and Domestic Supply (MUN) •Industrial Service Supply (IND) •Industrial Process Supply (PRO) •Agricultural Supply (AGR)

In addition to the beneficial uses set out in the Basin Plan, there are several implementation plans that include actions intended to meet water quality objectives and protect beneficial uses of the North Coastal Basin. For the Russian River and its tributaries, no point source waste discharges are allowed

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from May 15 through September 30 and during all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow. For municipal waste discharged from October 1 through May 14, the discharge must be of advanced treated wastewater, and must meet a median coliform level of 2.2 MPN/100 mL.

Requirements of this Order implement the Basin Plan.

I. **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 40 criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

J. **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 chronic toxicity control. Requirements of this Order implement the SIP. As of May 18, 2010, NPDES permits must contain final effluent limitations for CTR constituents that demonstrate reasonable potential.

K. **Compliance Schedules and Interim Requirements.** The provision in section 2.1 of the SIP that allowed for the use of compliance schedules and interim limitations in an NPDES permit for CTR constituents ended on May 18, 2010. Based on a discharger's request and demonstration that it is infeasible to comply with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in a cease and desist order or time schedule order adopted by the Regional Water Board.

The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, which includes compliance schedule policies for pollutants

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that are not addressed by the SIP. This Policy became effective on August 27, 2008.

This Order does not include compliance schedules or interim effluent limitations.

L. 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 CFR § 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.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), pH, and total coliform bacteria. Restrictions on these pollutants are discussed in section IV.B.2 of the Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations for BOD_5, TSS, and pH that are more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. Restrictions on these pollutants are discussed in section IV.C.3.

WQBELs 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 WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. Most 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). The remaining water quality objectives and beneficial uses implemented by this Order (specifically the addition of the beneficial uses Water Quality Enhancement (WQE), Flood Peak Attenuation/Flood Water Storage (FLD), Wetland Habitat (WET), Native American Culture (CUL), and Subsistence Fishing (FISH), and the General Objective regarding antidegradation in the Basin Plan) were approved by USEPA

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on March 4, 2005 and are applicable water quality standards pursuant to section 131.21(c)(2). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

The Regional Water Board has considered all of the applicable information submitted by the Discharger in considering the factors in Water Code section 13263, including the provisions of Water Code section 13241, in establishing these requirements.

N. Antidegradation Policy. Section 131.12 requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The 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 the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

O. 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. Although effluent limitations for total chlorine residual and settleable solids have been removed from this Order, and thus are less stringent than those in the previous Order, the rationale for their removal is consistent with the exceptions to the anit-backsliding provisions provided in section 402(o)(2)(B) of the CWA.

During the term of Order No. R1-2005-0084, the Discharger discontinued the use of chlorine for disinfection of the effluent. Although the Discharger uses chlorine for maintenance of the filter membranes and for clean-in-place cycles in the membrane tanks, as discussed in the Fact Sheet, the Discharger has developed standard operating procedures (SOPs) to ensure that chlorine is not discharged in the effluent to Basalt Pond. The Facility modifications and lack of reasonable potential for chlorine residual constitute new information, which permits the removal of effluent limitations consistent with Clean Water Act section 402(o)(2)(B). Therefore, effluent limitations for total residual chlorine are not included in this Order and anti-backsliding requirements are satisfied.

During the term of Order No. R1-2005-0084, the Discharger upgraded its wastewater treatment facility to include advanced wastewater treatment utilizing

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membrane bioreactors. This technology removes all settleable solids from the wastewater and this has been demonstrated with settleable solids monitoring for over a year. The Facility modifications and lack of reasonable potential for settleable solids constitutes new information, which permits the removal of settleable solids effluent limitations.

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

Q. Monitoring and Reporting. 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.

R. 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. Rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

S. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections III.E, III.F, IV.B, IV.C, and V.B of this Order; sections VI, VII, and X.D.2 of the MRP; and Attachment G to this Order are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

T. 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

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opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

U. 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 of this Order.

III. DISCHARGE PROHIBITIONS

A. The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.

B. Creation of pollution, contamination, or nuisance, as defined by section 13050 of the California Water Code is prohibited.

C. The discharge of sludge or digester supernatant is prohibited, except as authorized under VI.C.5.c of this Order (Sludge Disposal and Handling Requirements).

D. The discharge or reclamation use of untreated or partially treated waste (receiving a lower level of treatment than described in section II.A of the Fact Sheet) from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provision G (Bypass).

E. Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the State, (b) groundwater, or (c) land, that creates pollution, contamination, or nuisance, as defined in Water Code section 13050 (m) is prohibited.

F. The discharge of waste to land that is not owned by or under agreement to use by the Discharger is prohibited, except for use for fire suppression as provided in title 22, sections 60307 (a) and (b) of the California Code of Regulations.

G. The discharge of waste at any point not described in Finding II.B or authorized by a permit issued by the State Water Board or another Regional Water Board is prohibited.

H. The mean daily dry weather flow of waste in excess of 1.4 mgd measured over a period of 30 consecutive days is prohibited.

I. The peak daily wet-weather influent flow through the treatment system in excess of 4.0 mgd is prohibited.

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J. The discharge of wastewater effluent from the WWTF to the Russian River or its tributaries is prohibited during the period from May 15 through September 30 of each year.

K. During the period from October 1 through May 14, discharges of treated wastewater to Basalt Pond, part of the Russian River, shall not exceed one percent of the flow of the Russian River, as measured by the sum of flows at United States Geological Survey (USGS) Gauge No. 11-4640.00 in the Russian River near Healdsburg and at USGS Gauge No. 11-4653.50 in Dry Creek near its mouth[2]. For purposes of this Order, compliance with this discharge prohibition shall be determined as follows:

1. The discharge of advanced treated wastewater shall be adjusted at least once daily to avoid exceeding, to the extent practicable, one percent of the most recent daily flow measurement of the Russian River[3]. Daily flow shall be based on flow meter comparisons reasonably read between the hours of 12:01 am to 12:00 midnight; and

2. In no case shall the total volume of advanced treated wastewater discharged in a calendar month exceed one percent of the total volume of the Russian River in the same calendar month. At the beginning of the discharge season, the monthly flow volume comparisons shall be based on the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the monthly flow volume shall be based on the first day of the calendar month to the date when the discharge ceased for the season.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001 (Discharge to Basalt Pond)

1. Final Effluent Limitations – Discharge Point 001

   a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP:

[2] When flows in Dry Creek exceed 200 cfs, a flow of 200 cfs in Dry Creek shall be used in the calculation of the sum of flows in the Russian River.

[3] An alternative flow gauging location may be established if it is determined that measurements at an alternative location are more representative of conditions at the point of discharge. In the event that a new gauge station is established, the Monitoring and Reporting Program will be modified to identify the new flow monitoring gauge.

Table 6. Effluent Limitations – Discharge Point 001 (Discharge to Basalt Pond)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10	15	--	--	--
	lbs/day[4] (dry-weather)	117	175	--	--	--
	lbs/day[5] (wet-weather)	334	500	--	--	--
Total Suspended Solids	mg/L	10	15	--	--	--
	lbs/day[4] (dry-weather)	117	175	--	--	--
	lbs/day[5] (wet-weather)	334	500	--	--	--
pH	standard units	--	--	--	6.5	8.5
Copper, Total Recoverable	µg/L	[6]	--	[6]	--	--

b. **Percent Removal.** The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent. Percent removal shall be determined from the 30-day average value of influent wastewater concentration in comparison to the 30-day average value of effluent concentration for the same constituent over the same time period as measured at Monitoring Locations INF-001 and EFF-001, respectively. [40 CFR 133.101(j)]

c. **Disinfection.** Disinfected effluent discharged from the Facility to Basalt Pond at Discharge Point 001 shall not contain coliform bacteria in excess of the following concentrations:

i. The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters (mL), using the bacteriological results of the last 7 days for which analysis have been completed[7];

[4] Mass-based limitations are based on the dry weather design flow of the Facility of 1.4 mgd.
[5] During wet weather periods, when the influent flow rate exceeds the dry weather design flow, mass emission limitations shall be calculated using the concentration-based effluent limitations and the actual daily average influent flow rate (not to exceed a maximum sustained peak flow rate of 4.0 mgd).
[6] Final effluent limitations for copper are hardness-dependent. See Attachment E-1 for the full table of hardness-dependent copper effluent limitations, which are to be determined based on the hardness of the receiving water at the time the discharge is sampled.
[7] Compliance with the 7-day median will be determined as a rolling median.

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ii. The number of coliform bacteria shall not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period; and

iii. No single sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

d. **Acute Toxicity.** There shall be no acute toxicity in treated wastewater discharged to Basalt Pond. The Discharger will be considered compliant with this limitation when the survival of aquatic organisms in a 96-hour bioassay of undiluted effluent complies with the following:

i. Minimum for any one bioassay: 70 percent survival; and

ii. Median for any three or more consecutive bioassays: at least 90 percent survival.

Compliance with this effluent limitation shall be determined in accordance with section V.A of the Monitoring and Reporting Program (Attachment E).

2. **Interim Effluent Limitations – Not Applicable**

This section is not applicable as the Discharger has not requested interim effluent limitations. In addition, interim limitations for CTR constituents may no longer be included in NPDES permits after May 18, 2010.

B. Land Discharge Specifications – Not Applicable

This section is not applicable to the Discharger as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Discharger plans to reclaim treated wastewater, thus the Discharger has Reclamation Specifications rather than Land Discharge Specifications.

C. Reclamation Specifications and Requirements – Discharge Point 002 (Recycled Water Storage Pond) and Discharge Point 003 (All Authorized Recycled Water Use Sites[8])

1. **Reclamation Requirements.**

a. The Discharger shall comply with applicable state and local requirements regarding the production and use of reclaimed wastewater, including

[8] Authorized recycled water use sites means sites which have been evaluated for CEQA compliance and addressed in the Discharger's Title 22 Recycled Water Engineering Report and approved by the State Department of Public Health and Regional Water Board. In addition, new recycled water use sites must meet requirements identified in section C of Attachment G to this Order.

requirements of California Water Code (Water Code) sections 13500 – 13577 (Water Reclamation) and Department of Health Services (DHS) regulations at title 22, sections 60301 – 60357 of the California Code of Regulations (Water Recycling Criteria).

b. The Discharger shall comply with the specific requirements contained in Reclamation Requirements and Provisions - Attachment G of this Order.

c. The Discharger shall implement all mitigation measures identified in its 2005 EIR and any subsequent environmental documents and appropriate best management practices for the protection of water quality during construction and operation of the reclamation system.

2. **Reclamation Specifications.**

a. The Discharger shall maintain compliance with the following limitations at Discharge Point 002, with compliance measured at Monitoring Location REC-001 as described in the attached MRP.

Table 7. Reclamation Specifications – Discharge Point 002 – Discharge to Recycled Water Storage Pond

Parameter	Units	Discharge Specifications			
		Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--
Total Suspended Solids	mg/L	10	15	--	--
pH	standard units	--	--	6.0	9.0

b. Discharge and Nutrient Application Rate. During the period from May 15 through September 30 and all other times seasonally appropriate, discharges of treated wastewater shall not exceed the hydraulic or nutrient agronomic requirements of the crops being irrigated.

3. **Disinfection.** Disinfected effluent discharged from the Facility to the 25 million gallon recycled water storage pond at Discharge Point 002 shall not contain coliform bacteria in excess of the following concentrations:

a. The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters (mL), using the bacteriological results of the last 7 days for which analysis have been completed[7];

b. The number of coliform bacteria shall not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period; and

c. No single sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

D. Other Requirements

1. **Filtration Process Requirements**

a. **Turbidity.** The effluent from the advanced wastewater treatment process filters shall at all times be filtered such that the filtered effluent does not exceed any of the following specifications at Monitoring Location INT-001, prior to discharge to the disinfection unit:

i. 0.2 NTU more than 5 percent of the time during any 24-hour period; and

ii. 0.5 NTU at any time.

b. Filtered effluent in excess of the turbidity specifications shall not enter the reclamation distribution system. Filtered effluent in excess of turbidity specifications shall be automatically diverted to an upstream treatment process unit or to emergency storage as soon as the Discharger is aware of the exceedance. The Discharger shall provide notification of non-compliance with the filtration process requirements as required in section VI.A.2.b of this Order.

2. **Disinfection Process Requirements for Ultraviolet (UV) Disinfection System.** The Discharger shall operate the UV disinfection system in accordance with the following operating protocol and technical and administrative requirements in order to demonstrate compliance with Effluent Limitations IV.A.1.c of this Order.

a. Disinfection of tertiary treated wastewater shall be accomplished using a disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration. The demonstration shall be performed on-site at the Facility at both maximum and minimum plant flows. At a minimum, the Discharger shall demonstrate a 99.99 percent removal and/or inactivation through the UV disinfection system only.

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b. The Discharger shall provide continuous, reliable monitoring of flow per channel, UV transmittance, UV intensity, UV dose, UV power, and turbidity. The Discharger must demonstrate compliance with the UV dose requirement.

c. The Discharger shall operate the UV disinfection system to provide a minimum UV dose of 80 millijoules per square centimeter (mJ/cm^2) at all times, unless otherwise approved by CDPH.

d. The UV transmittance (at least 254 nanometers) in the wastewater shall not fall below 65 percent of maximum at any time, unless otherwise approved by CDPH.

e. The quartz sleeves and cleaning system components shall be visually inspected per the manufacturer's operation manual for physical wear (scoring, solarization, seal leaks, etc.) and to check the efficacy of the cleaning system.

f. The quartz sleeves shall be cleaned at fixed intervals to ensure the minimum required UV dose delivery is consistently achieved. Cleaning intervals shall be established based on the presence of coliform organisms.

g. Lamps and sleeves shall be replaced per the manufacturer's recommendation, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained for a time period consistent with the record retention requirements in the Standard Provisions (Attachment D, Section IV).

h. Upon review and approval of the UV disinfection system by CDPH, the Discharger shall comply with all of the conditions set out by CDPH for its approval of the UV disinfection system.

i. The UV disinfection system shall be operated in accordance with an approved operations and maintenance plan.

3. **Storage Ponds.** Ponds used for the storage of recycled water shall be constructed in a manner that protects groundwater. Prior to construction or use of any new wastewater storage ponds, the Discharger shall submit to the Regional Water Board Executive Officer for review and approval, a technical report that includes design proposals and a technical evaluation that demonstrates that the pond design complies with the Water Code and title 27 of the California Code of Regulations. Pond design and operation plans must

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include features and BMPs to protect groundwater and prevent exceedances of groundwater quality objectives.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. With the exception of constituents subject to the special study requirements in Provision VI.C.2.c, compliance with receiving water limitations shall be measured at monitoring locations described in the MRP (Attachment E). Discharges from the Facility shall not cause the following:

1. The discharge shall not cause the dissolved oxygen concentration of the receiving water to be depressed below 7.0 mg/L. Additionally, the discharge shall not cause the dissolved oxygen content of the receiving water to fall below 10.0 mg/L more than 50 percent of the time, or below 7.5 mg/L more than 10 percent of the time in a calendar year. In the event that the receiving waters are determined to have a dissolved oxygen concentration of less than 7.0 mg/L, the discharge shall not depress the dissolved oxygen concentration below the existing level.

2. The discharge shall not cause the pH of receiving waters to be depressed below 6.5 nor raised above 8.5. Within this range, the discharge shall not cause the pH of the receiving waters to be changed at any time more than 0.5 units from that which occurs naturally.

3. The discharge shall not cause the turbidity of receiving waters to be increased more than 20 percent above naturally occurring background levels.

4. The discharge shall not cause receiving waters to contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

5. The discharge shall not cause receiving waters to contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

6. The discharge shall not cause receiving waters to contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.

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7. The discharge shall not cause coloration of receiving waters that causes nuisance or adversely affects beneficial uses.

8. The discharge shall not cause bottom deposits in receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.

9. The discharge shall not cause or contribute concentrations of biostimulants to receiving waters that promote objectionable aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.

10. The discharge shall not cause receiving waters to contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, plants, animals, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods, as specified by the Regional Water Board.

11. The discharge shall not cause a measurable temperature change in the receiving water at any time.

12. The discharge shall not cause an individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses. The discharge shall not cause bioaccumulation of pesticide, fungicide, wood treatment chemical, or other toxic pollutant concentrations in bottom sediments or aquatic life to levels which are harmful to human health.

13. The discharge shall not cause receiving waters to contain concentrations of pesticides in excess of the limiting concentrations set forth in Table 3-2 of the Basin Plan or in excess of more stringent Maximum Contaminant Levels (MCLs) established for these pollutants in title 22, Division 4, Chapter 15, Articles 4 and 5.5 of the California Code of Regulations.

14. The discharge shall not cause receiving waters to contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise affect beneficial uses.

15. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board, as required by the federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Clean

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Water Act, or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

16. The discharge shall not cause concentrations of chemical constituents to occur in excess of limits specified in Table 3-2 of the Basin Plan or in excess of more stringent Maximum Contaminant Levels (MCLs) established for these pollutants in title 22, Division 4, Chapter 15, Articles 4 and 5.5 of the California Code of Regulations.

B. Groundwater Limitations

Receiving water limitations for groundwater are based on water quality objectives in the Basin Plan and are a required part of this Order. Discharges from the Facility shall not cause exceedance of applicable water quality objectives or create adverse impacts to beneficial uses of groundwater. Discharges from the Facility shall not cause the following:

1. The collection, storage, and use of wastewater or recycled water shall not cause or contribute to degradation that violates groundwater quality objectives or impacts beneficial uses of groundwater.

2. The collection, storage, and use of wastewater or recycled water shall not cause groundwater to contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

VI. PROVISIONS

A. Standard Provisions

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

2. **Regional Water Board Standard Provisions.** The Discharger shall comply with the following Regional Water Board standard provisions:

   a. 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.

   b. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, interim or final effluent limitation, land

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discharge specification, reclamation specification, receiving water limitation, or provision of this Order that may result in a significant threat to human health or the environment, such as inundation of treatment components, breach of pond containment, sanitary sewer overflow, irrigation runoff, etc., and/or that results in a discharge to a drainage channel or a surface water, the Discharger shall notify Regional Water Board staff within 24 hours and report orally and in writing to the Regional Water Board staff all unauthorized spills of waste. Spill notification and reporting shall be conducted in accordance with section X.E of the Monitoring and Reporting Program.

c. Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code § 1211)

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

a. **Standard Revisions.** If applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board may reopen this Order and make modifications in accordance with such revised standards.

b. **Reasonable Potential.** This Order may be reopened for modification to include an effluent limitation, if monitoring establishes that the discharge causes, or has the reasonable potential to cause or contribute to, an excursion above a water quality criterion or objective applicable to the receiving water.

c. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.

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d. **303(d)-Listed Pollutants.** If an applicable TMDL program is adopted, this Order may be reopened and effluent limitations for the pollutant(s) that are the subject of the TMDL will be modified or imposed to conform this Order to the TMDL requirements. If the Regional Water Board determines that a voluntary offset program is feasible for and desired by the Discharger, then this Order may be reopened to reevaluate the effluent limitations for the pollutant(s) that are subject of the TMDL and, if appropriate, to incorporate provisions recognizing the Discharger's participation in an offset program.

e. **Water Effects Ratios (WERs) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper. If the Discharger performs studies to determine site-specific WERs and /or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

f. **Nutrients.** This Order contains monitoring requirements for ammonia, nitrate, and phosphorus. If new water quality objectives for nutrients are established, or if monitoring data indicate the need for effluent limitations for any of these parameters, this Order may be reopened and modified to include new or modified effluent limitations, as necessary.

g. Constituents of Emerging Concern (CECs). This Order may be reopened to incorporate appropriate monitoring requirements for CECs in recycled water after the State Water Board takes action on recommendations of the "blue-ribbon" advisory panel that was convened to guide future actions relating to CECs.

2. **Special Studies, Technical Reports and Additional Monitoring Requirements**

a. **Toxicity Reduction Requirements**

i. **Whole Effluent Toxicity.** In addition to a limitation for whole effluent acute toxicity, the Monitoring and Reporting Program (MRP) of this Order requires routine monitoring for whole effluent chronic toxicity to determine compliance with the Basin Plan's narrative water quality objective for toxicity. As established by the MRP, if either of the effluent limitations for acute toxicity is exceeded (a single sample with less than 70% survival or a three sample median of less than 90%

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survival) or if the chronic toxicity monitoring trigger of 1.0 TUc (where TUc = 100/NOEC)[10] is exceeded, the Discharger shall conduct accelerated monitoring as specified in section V. of the MRP.

Results of accelerated toxicity monitoring will indicate a need to conduct a Toxicity Reduction Evaluation (TRE), if toxicity persists; or it will indicate that a return to routine toxicity monitoring is justified because persistent toxicity has not been identified by accelerated monitoring. TREs shall be conducted in accordance with the TRE workplan prepared by the Discharger pursuant to Section VI.C.2.a.ii of this Order, below.

ii. **Toxicity Reduction Evaluations (TRE) Workplan.** The Discharger shall prepare and submit to the Regional Water Board Executive Officer a TRE workplan within **90 days of the effective date of this Order**. This requirement may be met using an existing TRE Workplan that meets the criteria contained in this section. This plan shall be reviewed at least once every 5 years and updated as necessary in order to remain current and applicable to the discharge and discharge facilities. The Discharger shall notify the Regional Water Board of this review and submit any revision of the TRE workplan with each future Report of Waste Discharge.

The TRE workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include at least the following items:

(a) A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

(b) A description of the facility's methods of maximizing in-house treatment efficiency, good housekeeping practices, and a list of all chemicals used in the operation of this Facility.

(c) If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

iii. **Toxicity Reduction Evaluations (TRE).** The TRE shall be conducted in accordance with the following:

[10] This Order does not allow any credit for dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

(a) The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring testing, required by Sections V.A.7 and V.B.9 of the MRP, observed to exceed either the acute or chronic toxicity parameter.

(b) The TRE shall be conducted in accordance with the Discharger's TRE workplan.

(c) The TRE shall be in accordance with current technical guidance and reference material including, at a minimum, the USEPA manual EPA/833B 99/002.

(d) The TRE may end at any stage if, through monitoring results, it is determined that there is no longer consistent toxicity. The Discharger shall notify the Regional Water Board of this determination.

(e) The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. TIEs shall be conducted in accordance with current technical guidance and reference material, including, at a minimum, the Discharger shall use the USEPA acute and chronic manuals, EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III).

(f) As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity parameters.

(g) Many recommended TRE elements accompany required efforts of source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements of recommendations of such programs may be acceptable to comply with requirements of the TRE.

(h) The Regional Water Board recognizes that chronic toxicity may be episodic and identification of a reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Regional Water Board will be based in

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part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

b. **Ammonia Monitoring Study**. The Discharger shall prepare and submit for approval by the Regional Water Board Executive Officer an Ammonia Monitoring Study designed to collect additional effluent and receiving water monitoring data to assess whether or not the discharge to Basalt Pond poses reasonable potential to cause or contribute to exceedances of applicable water quality objectives for ammonia in the receiving water (Basalt Pond). The proposal shall include a time schedule for completion of the study and must be received by the Regional Water Board Executive Officer **within 90 days of the effective date of this Order**.

c. **Reference Receiving Water Study.** The Discharger shall prepare and submit for approval by the Regional Water Board Executive Officer a Reference Receiving Water Study for temperature, pH, dissolved oxygen, specific conductance, and total dissolved solids. This study shall be designed to collect data from treated disinfected effluent, Basalt Pond and a nearby abandoned gravel extraction pond that has similar characteristics to Basalt Pond for the purpose of determining whether water quality conditions in Basalt Pond are due to effluent discharges or natural conditions. The proposal shall include a time schedule for completion of the study and must be received by the Regional Water Board Executive Officer **within 120 days of the effective date of this Order**.

3. **Best Management Practices and Pollution Prevention**

a. **Pollutant Minimization Program (PMP)**

The Discharger shall, as required by the Executive Officer, develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as detected, not quantified (DNQ) when the effluent limitation is less than the minimum 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:

i. A sample result is reported as DNQ and the effluent limitation is less than the RL; or

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ii. A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

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

i. 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;

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

iii. 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;

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

v. An annual status report that shall be submitted as part of the Annual WWTF Report due March 1st to the Regional Water Board and shall include:

(a) All PMP monitoring results for the previous year;

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

(c) A summary of all actions undertaken pursuant to the control strategy; and

(d) A description of actions to be taken in the following year.

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

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

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b. The Discharger shall maintain an updated Operation and Maintenance (O&M) Manual for the Facility. The Discharger shall update the O&M Manual, as necessary, to conform to changes in operation and maintenance of the Facility. The O&M Manual shall be readily available to operating personnel onsite and for review by state or federal inspectors. The O&M Manual shall include the following:

   i. Description of the treatment facility table of organization showing the number of employees, duties and qualifications and plant attendance schedules (daily, weekends and holidays, part-time, etc). The description should include documentation that the personnel are knowledgeable and qualified to operate the treatment facility so as to achieve the required level of treatment at all times.
   ii. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.

   iii. Description of laboratory and quality assurance procedures.

   iv. Process and equipment inspection and maintenance schedules.

   v. Description of safeguards to assure that, should there be reduction, loss, or failure of electric power, the Discharger will be able to comply with requirements of this Order.

   vi. Description of preventive (fail-safe) and contingency (response and cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. These plans shall identify the possible sources (such as loading and storage areas, power outage, waste treatment unit failure, process equipment failure, tank and piping failure) of accidental discharges, untreated or partially treated waste bypass, and polluted drainage.

c. **Standard Operating Procedures (SOPs) for Chlorine Usage.** The Discharger shall maintain SOPs for the use of chlorine at the Facility, including maintenance cleaning and clean-in-place practices of the filter membranes, to control and abate the discharge of chlorine to the receiving water. The Discharger shall update the SOPs as needed and report any changes to the SOPs or changes in chlorine usage in the Annual WWTF Report (due March 1st to the Regional Water Board). The Discharger shall report any chlorine spills at the Facility in accordance with section VI.A.2.b.

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5. **Special Provisions for Municipal Facilities (POTWs Only)**

a. **Wastewater Collection Systems**

i. **Statewide General WDRs for Sanitary Sewer Systems**

On May 2, 2006, the State Water Board adopted State Water Board Order No. 2006-003-DWQ, Statewide General WDRs for Sanitary Sewer Systems. Order No. 2006-0003-DWQ requires all public agencies that currently own or operate sanitary sewer systems to apply for coverage under the General WDRs. The deadline for existing dischargers to apply for coverage under State Water Board Order No. 2006-003-DWQ was November 6, 2006. On February 20, 2008, the State Water Board adopted Order No. WQ 2008-0002-EXEC Adopting Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The Discharger shall maintain coverage under, and shall be subject to the requirements of Order Nos. 2006-0003-DWQ and WQ-2008-0002-EXEC and any future revisions thereto for operation of its wastewater collection system.

In addition to the coverage obtained under Order No. 2006-0003, the Discharger's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR 122.41(e)], report any non-compliance [40 CFR 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR 122.41(d)].

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ii. **Spills and Sanitary Sewer Overflows**

iii. The Discharger shall take all feasible steps to stop spills and sanitary sewer overflows (SSOs) as soon as possible. All reasonable steps should be taken to collect spilled material and protect the public from contact with wastes or waste-contaminated soil or surfaces.

iv. The Discharger shall report orally and in writing to the Regional Water Board staff all SSOs and unauthorized spills of waste. Spill notification and reporting shall be conducted in accordance with the section X.E of the Monitoring and Reporting Program.

b. **Source Control Provisions**

The Discharger shall perform source control functions and provide a summary of source control activities conducted in the Annual WWTF Report (due March 1st to the Regional Water Board). Source control functions and requirements shall include the following:

i. Implement the necessary legal authorities to monitor and enforce source control standards, restrict discharges of toxic materials to the collection system and inspect facilities connected to the system.

ii. If waste haulers are allowed to discharge to the Facility, establish a waste hauler permit system, to be reviewed by the Executive Officer, to regulate waste haulers discharging to the collection system or Facility.

iii. National Pretreatment Standards: Prohibited Discharges

(a) General prohibitions. Pollutants introduced into WWTFs by a non-domestic source shall not pass through [40 CFR 403.3(n)] the WWTF or interfere [40 CFR 403.3(i)] with the operation or performance of the WWTF. These general prohibitions and the specific prohibitions in paragraph (b) of this provision apply to all non-domestic sources introducing pollutants into a WWTF whether or not the source is subject to other National Pretreatment Standards or any national, state, or local pretreatment requirements.

(b) Specific prohibitions. In addition, the following pollutants shall not be introduced into a WWTF:

(1) Pollutants that create a fire or explosion hazard in the WWTF;

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(2) Pollutants that will cause corrosive structural damage to the WWTF, but in no case discharges with pH lower than 5.0, unless the WWTF is specifically designed to accommodate such discharges;

(3) Solid or viscous pollutants in amounts that will cause obstruction to the flow in the WWTF resulting in interference;

(4) Any pollutant, including oxygen demanding pollutants (BOD, etc) released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the WWTF;

(5) Heat in amounts which will inhibit biological activity in the WWTF resulting in interference, but in no case heat in such quantities that the temperature at the WWTF exceeds 40°C (104°F) unless the Regional Water Board, upon request of the WWTF, approves alternate temperature limits;

(6) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass-through;

(7) Pollutants that result in the presence of toxic gases, vapors, or fumes within the WWTF in a quantity that may cause acute worker health and safety problems; or

(8) Any trucked or hauled pollutant, except at discharge points designated by the WWTF.

iv. Conduct a waste survey at least once every five years to identify all dischargers that might discharge pollutants that could pass through or interfere with the operation or performance of the Facility.

v. Perform public outreach to educate industrial, commercial, and residential users of the collection system about the importance of preventing discharges of industrial and toxic wastes to the wastewater treatment plant.

vi. Perform ongoing inspections and monitoring, as necessary, to ensure adequate source control.

c. **Sludge Disposal and Handling Requirements**

i. Sludge, as used in this Order, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater

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treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Biosolids refers to sludge that has been treated, tested, and demonstrated to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

ii. All collected sludges and other solid waste removed from liquid wastes shall be removed from screens, sumps, ponds, and tanks as needed to ensure optimal plant operation and disposed of in accordance with applicable federal and State regulations.

iii. The use and disposal of biosolids shall comply with all of the land application and disposal requirements in 40 CFR 503, which are enforceable by the USEPA, not the Regional Water Board. If during the life of this Order, the State accepts primacy for implementation of 40 CFR 503, the Regional Water Board may also initiate enforcement where appropriate.

iv. Sludge or biosolids that are disposed of in a municipal solid waste landfill or used as daily landfill cover shall meet the applicable requirements of 40 CFR 258. In the annual self-monitoring report, the Discharger shall report the amount of sludge placed in a landfill and the landfill(s) which received the sludge or biosolids.

v. The beneficial use of biosolids by application to land as soil amendment is not covered or authorized by this Order. Biosolids that are applied to land as soil amendment by the Discharger within the North Coast Region shall comply with State Water Board Water Quality Order No. 2000-10-DWQ (General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities) or other permits issued by the Regional Water Board.

vi. The Discharger shall take all reasonable steps to prevent and minimize any sludge use or disposal in violation of this Order that has a likelihood to adversely affect human health or the environment.

vii. Solids and sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, and shall not result in groundwater contamination.

viii. Solids and sludge treatment and storage sites shall have facilities adequate to divert surface water runoff from adjacent areas, to protect

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the boundaries of the site from erosion, and to prevent drainage from the treatment and storage site. Adequate protection is defined as protection from at least a 100-year storm.

ix. The discharge of sewage sludge and solids shall not cause waste material to be in a position where it is, or can be, conveyed from the treatment and storage sites and deposited into waters of the State.

d. **Discharge of Biosolids**

For the discharge of biosolids from the WWTF, the Discharger shall comply with the following requirements:

i. Statewide General WDRs for Discharge of Biosolids to Land

If applicable, the Discharger shall obtain authorization to discharge under and meet the requirements of the State Water Board Water Quality Order No. 2004-0012-DWQ General Waste Discharge Requirements for the Discharge of Biosolids to Land or Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities. For

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existing discharges of biosolids to land, the Discharger shall submit a Notice of Intent to Comply within **180 days** of the effective date of this Order. For future discharges of biosolids to land, the Discharger shall submit a Notice of Intent to Comply in accordance with the enrollment requirements of Order No. 2004-0012; or

ii. Alternatively, the Discharger may dispose of biosolids at another appropriately permitted facility.

iii. New sludge treatment and storage facilities must comply with Water Code and California Code of Regulations title 27 requirements for the protection of water quality.

e. **Operator Certification**

Supervisors and operators of municipal WWTFs shall possess a certificate of appropriate grade in accordance with title 23 of the California Code of Regulations, section 3680. The State Water Board may accept experience in lieu of qualification training. In lieu of a properly certified WWTF operator, the State Water Board may approve use of a water treatment facility operator of appropriate grade certified by CDPH where water reclamation is involved.

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f. **Adequate Capacity**

If the WWTF or effluent disposal areas will reach capacity within four years, the Discharger shall notify the Regional Water Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies, and the press. Factors to be evaluated in assessing reserve capacity shall include, at a minimum, (1) comparison of the wet weather design flow with the highest daily flow, and (2) comparison of the average dry weather design flow with the lowest 30-day flow. The Discharger shall demonstrate that adequate steps are being taken to address the capacity problem. The Discharger shall submit a technical report to the Regional Water Board showing how flow volumes will be prevented from exceeding capacity, or how capacity will be increased, within 120 days after providing notification to the Regional Water Board, or within 120 days after receipt of Regional Water Board notification, that the WWTF will reach capacity within four years. The time for filing the required technical report may be extended by the Regional Water Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Water Board itself. [CCR title 23, section 2232]

6. **Other Special Provisions**

a. **Storm Water Best Management Practices (BMPs).** As explained in detail in section III.E.2 of the Fact Sheet, all stormwater is captured and appropriately discharged without allowing it to mingle with any wastes, and therefore enrollment under the State-wide Industrial Storm Water Permit is not required by the Order. BMPs to control storm water at the Facility shall be developed and upgraded, as necessary. In each Annual Report submitted to the Regional Water Board, the Discharger shall describe the effectiveness of storm water BMPs as well as activities to maintain and upgrade BMPs during the previous year.

7. **Compliance Schedules**

This permit contains no compliance schedules.

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VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order will be determined as specified below.

A. General

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP of this Order. 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. Multiple Sample Data

When determining compliance with an AMEL 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.

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.

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.

C. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by subsection B 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

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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.

D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge (or when applicable, the median determined by subsection B, 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. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

G. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples

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taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

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ATTACHMENT A – DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effective Concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC25 is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

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

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

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

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be

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considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inhibition Concentration (IC). The IC25 is typically calculated as a percentage of effluent. It is the level at which the organisms exhibit 25 percent reduction in biological measurement such as reproduction or growth. It is calculated statistically and used in chronic toxicity testing.

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

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

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

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

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

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

Minimum Level (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the

concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND) are those sample results less than the laboratory's MDL.

Ocean Waters are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

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

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

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

Reporting Level (RL) is the ML (and its associated analytical method) used for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP

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in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Satellite Collection System is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Source of Drinking Water is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

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

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

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

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

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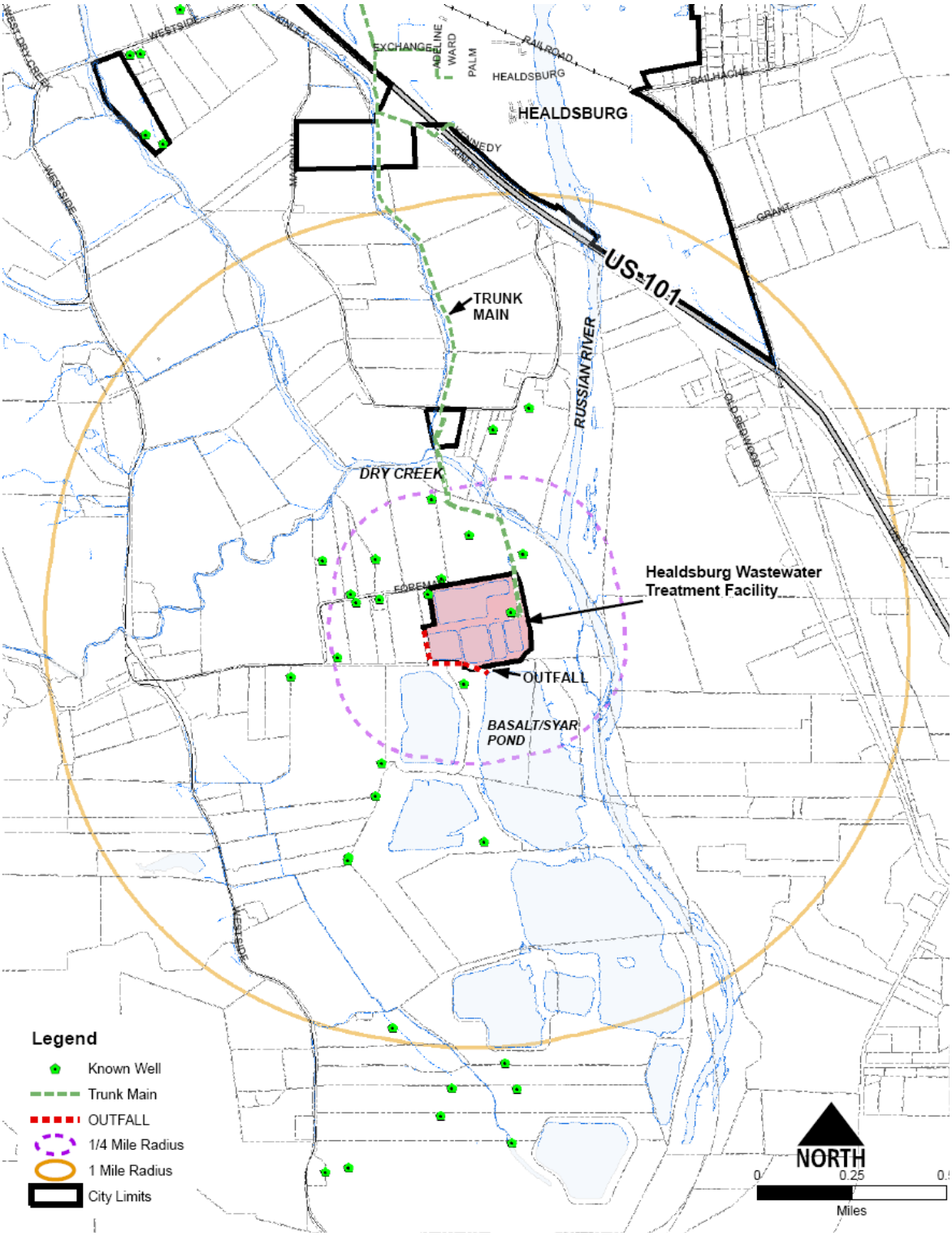
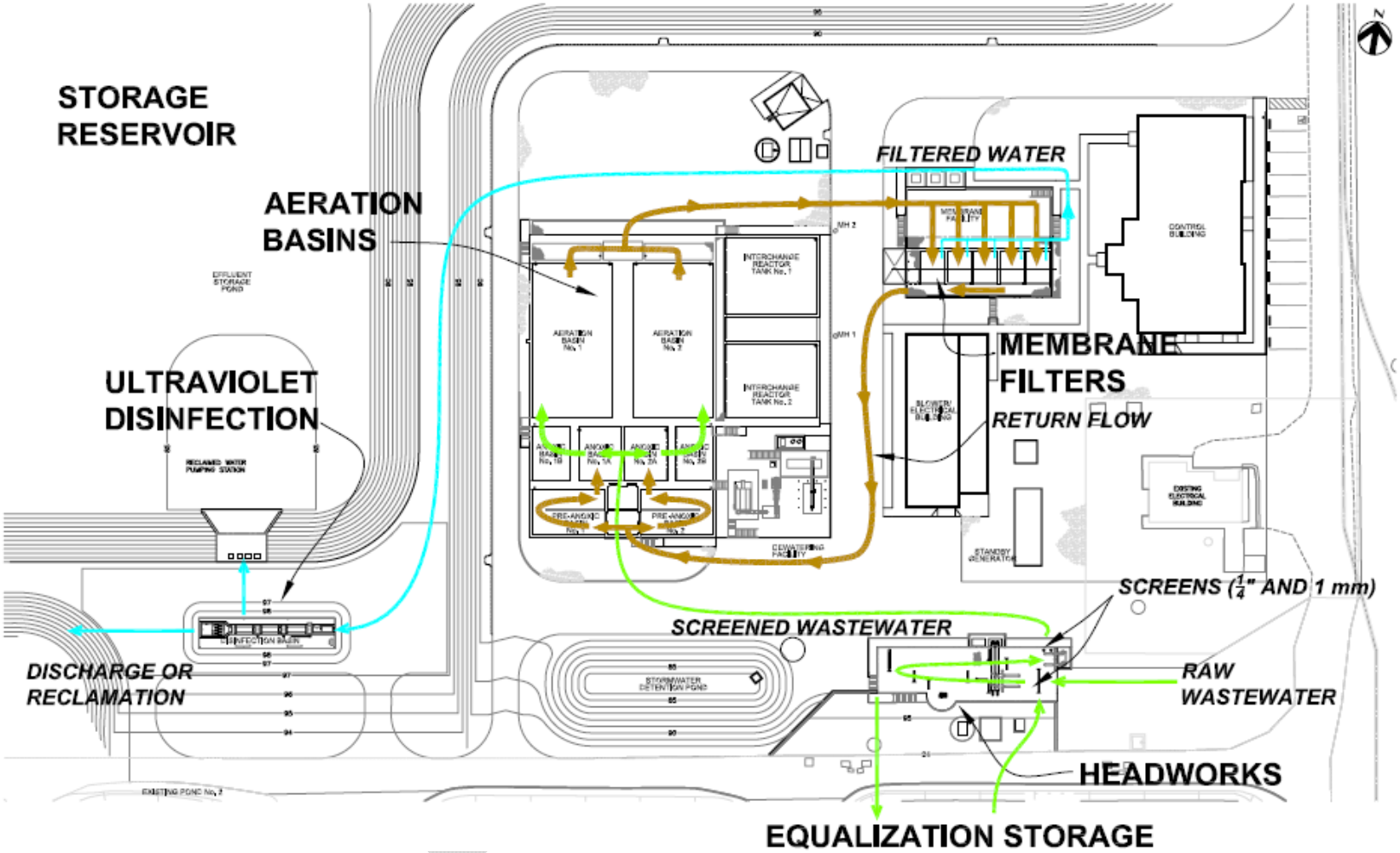
ATTACHMENT B – MAP



ATTACHMENT C – FLOW SCHEMATIC



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 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).)

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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 Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR § 122.41(i); Wat. Code, § 13383):

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

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

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

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, 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).)

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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)(i)(A));

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

    c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.6 below. (40 CFR § 122.41(m)(4)(i)(C).)

4. Burden of Proof. In any enforcement proceeding, the Discharger seeking to establish the bypass defense has the burden of proof.

5. 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).)

6. Notice

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

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

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H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR § 122.41(n)(2).)

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

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

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

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

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

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

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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 Water Code. (40 CFR § 122.41(l)(3); § 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 Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 CFR § 122.41(j)(4); § 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 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).)

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

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the 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 § 122.41(k).)

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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 § 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 § 122.22(b)(1));

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

   c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR § 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 and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR § 122.22(c).)

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

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information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR § 122.22(d).)

C. Monitoring Reports

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

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

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

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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).)

   c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [40 CFR § 122.41(l)(6)(ii)(C)]

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 section 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 that are not subject to effluent limitations in this Order. (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 State Water Board of any planned changes in the permitted facility or activity that may

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result in noncompliance with General Order requirements. (40 CFR § 122.41(l)(2).)

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, 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 § 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 § 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 § 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 § 122.42(b)(3).)

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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 National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. California Water Code 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 which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Wastewater Monitoring Provision. Composite samples may be taken by a proportional sampling device approved by the Executive Officer or by grab samples composited in proportion to flow. In compositing grab samples, the sampling interval shall not exceed one hour.

B. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved by 40 CFR Part 136 or as specified in this Order, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the monthly and annual discharger monitoring reports.

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

D. Compliance and reasonable potential monitoring analyses shall be conducted using commercially available and reasonably achievable detection limits that are lower than the applicable effluent limitation. If no ML value is below the effluent limitation, the lowest ML shall be selected as the RL. Table E-1 lists the test methods the Discharger may use for compliance and reasonable potential monitoring to analyze priority pollutants with effluent limitations.

Table E-1. Test Methods and Minimum Levels for Priority Pollutants

CTR#	Constituent Types of Analytical Methods Minimum Levels (µg/L)	Types of Analytical Methods Minimum Levels (µg/L)	
		Inductively Coupled Plasma/ Mass Spectroscopy(ICPMS)	Stabilized Platform Graphite Furnace Atomic Absorption
6	Copper	0.5	2
7	Lead	0.5	2
13	Zinc	1	10

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II. MONITORING LOCATIONS

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

Table E-2. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Untreated influent wastewater collected at the plant headworks at a representative point preceding primary treatment.
--	INT-001	Treated wastewater immediately following the advanced wastewater (AWT) process for monitoring AWT turbidity
001	EFF-001[1]	Treated wastewater after disinfection but prior to discharge to Basalt Pond.
002	REC-001[1]	Treated wastewater after disinfection but prior to discharge to 25 MG recycled water storage pond.
003	REC-002	Location where a representative sample of treated wastewater, to be reclaimed at all approved reclamation sites, can be collected, following all treatment and storage in 25 MG recycled water storage pond and immediately before its application for irrigation.
--	RSW-001	Downstream receiving water monitoring location. Samples shall be representative of conditions in Basalt Pond following introduction and mixing of effluent from the Facility. Samples shall be collected from a representative location on the western side of the Basalt Pond, approximately 25 to 50 feet from the discharge outfall and the shore, or at another location approved by the Regional Water Board Executive Officer. If the Discharger wants to monitor receiving water at an alternate location, a written proposal justifying the change must be submitted to the Regional Water Board Executive Officer for review and approval.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the Facility at Monitoring Location INF-001 as follows:

[1] Monitoring locations EFF-001 and REC-001 are the same location, the sampling point at the effluent end of the UV disinfection system. Different Discharge Point Names and Monitoring Location Names have been assigned due to differences in monitoring requirements at Discharge Points 001 (discharge to Basalt Pond) and 002 (discharge to reclamation system).

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Table E-3. Influent Monitoring – Monitoring Location INF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr composite	Weekly[2]	Standard Methods[3]
Total Suspended Solids	mg/L	24-hr composite	Weekly[2]	Standard Methods
Influent Flow[4]	mgd	Meter	Continuous	Meter

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

The Discharger shall monitor treated wastewater to be discharged to Basalt Pond prior to contact with receiving water at Monitoring Location EFF-001 as follows:

Table E-4. Effluent Monitoring for Discharges to Basalt Pond – Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Effluent Flow[5] [6]	mgd	Meter	Continuous	Meter
Dilution Rate	% of stream flow	Calculation	Daily	--
Biochemical Oxygen Demand (5-day @20°C)	mg/L	24-hr composite	Weekly[2]	Standard Methods[3]
Total Suspended Solids	mg/L	24-hr composite	Weekly[2]	Standard Methods[3]
Total Coliform Bacteria	MPN/100 mL	Grab	Weekly	Standard Methods[3]
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods[3]
pH	standard units	Grab	Weekly	Standard Methods[3]
Temperature	°F or °C	Grab	Weekly	Standard Methods[3]
Hardness, Total (as $CaCO_3$)[7], [8]	mg/L	Grab	Monthly	Standard Methods[3]

[2] Monitoring of BOD_5 and TSS in the influent shall coincide with monitoring of these parameters in the effluent (e.g., same day and approximately the same time).
[3] In accordance with the current edition of Standard Methods for Examination of Water and Wastewater (American Public Health Administration) or current test procedures specified in 40 CFR Part 136.
[4] Each month, the Discharger shall report maximum daily and average daily flow rate, and average monthly flows.
[5] Each month, the Discharger shall report average daily and average monthly flows.
[6] Effluent flow is measured at a point that is downstream of the membrane filters and upstream of the UV disinfection system.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Copper, Total Recoverable[7,8,9]	µg/L	Grab	Monthly	EPA Method 200
Lead, Total Recoverable[7,8,9,10]	µg/L	Grab	Quarterly	Standard Methods[3]
Zinc, Total Recoverable[7,8,9,10]	µg/L	Grab	Quarterly	Standard Methods[3]
Acute Toxicity[11]	% Survival	24-hour composite	Monthly[12]	See Section V.A below
Chronic Toxicity[11]	TUc	24-hour composite	Annually	See Section V.B below
CTR Pollutants[9],[13]	µg/L	24-hour composite[14]	3X/5 years	Standard Methods[3]
Title 22 Pollutants [15]	µg/L	24-hour composite[14]	1X/5 years	Standard Methods[3]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Monthly	Standard Methods[3]
Ammonia Nitrogen, Total (as N)[16]	mg/L	Grab	Monthly	Standard Methods[3]

7 Effluent and receiving water hardness samples shall be collected on the same day and at approximately the same time as effluent samples for copper, lead, and zinc.

8 Monitoring for hardness shall be conducted concurrently with effluent sampling for copper, lead, and zinc.

9 Analytical methods shall achieve the lowest minimum level (ML) specified in Appendix 4 of the SIP; and in accordance with Section 2.4.1 of the SIP, the Discharger shall report the Reporting Level (RL) and the Method Detection Limit (MDL) with each sample result.

10 Monitoring for lead and zinc shall be conducted quarterly for the first year of the permit term. If sample results from the first year of the permit term indicate that concentrations of a pollutant in the effluent are below applicable CTR water quality objectives, then specific monitoring requirements may be discontinued. If sample results indicate that concentrations of a pollutant are greater than the applicable CTR WQO, monitoring frequency may be increased and the permit reopened to establish effluent limits.

11 Whole effluent acute and chronic toxicity shall be monitored in accordance with the requirements of section V of this Monitoring and Reporting Program.

12 Monitoring for acute toxicity shall be conducted monthly during the first year of the permit. If all sample results show at least 90% survival during that time period, the Discharger may reduce monitoring frequency to quarterly.

13 CTR pollutants are those pollutants identified in the California Toxics Rule at 40 CFR 131.38.

14 CTR and Title 22 pollutant samples shall be collected using 24-hour composite sampling, except for pollutants that are volatile.

15 The Title 22 pollutants are those pollutants for which the Department of Public Health has established Maximum Contaminant Levels (MCLs) at Title 22, Division 4, Chapter 15, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals) of the California Code of Regulations. Duplicate analyses are not required for pollutants that are identified both as CTR and Title 22 pollutants.

16 Monitoring for ammonia shall be concurrent with acute whole effluent toxicity monitoring (Section V.A.1 of this MRP). Effluent and receiving water temperature and pH shall be recorded at the time of the ammonia sample.

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ammonia Nitrogen, Unionized (as N)	mg/L	--	Monthly	Calculation
Nitrite[17]	mg/L	Grab	Monthly	Standard Methods[3]
Organic Nitrogen[17]	mg/L	Grab	Monthly	Standard Methods[3]
Phosphorus, Total (as P)	mg/L	Grab	Monthly	Standard Methods[3]
.				
Aluminum, Total Recoverable[18]	mg/L	Grab	Quarterly	Standard Methods[3]

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing

The Discharger shall conduct acute whole effluent toxicity testing (WET) to determine compliance with the effluent limitation for acute toxicity established by section IV.A.1 of the Order.

1. **Test Frequency.** The Discharger shall conduct acute WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001, as summarized in Table E-4, above.

2. **Sample Type.** For 96-hour static renewal or 96-hour static non-renewal testing, the effluent samples shall be 24-hour composite samples collected at Monitoring Location EFF-001.

3. **Test Species.** The Discharger shall conduct two suites of acute WET testing using an intertebrate, the water flea, *Ceriodaphnia dubia*, and a vertebrate, rainbow trout, *Oncorhynchus mykiss*. After the initial screening period, monitoring shall be conducted using the most sensitive species. If

[17] Monitoring data for nitrite and organic nitrogen is needed in combination with monitoring data for nitrate and ammonia to determine the total nitrogen content of the effluent in advance of it being used for reclamation. If monitoring during the first year of the permit shows that total nitrogen is less than 10 mg/L and has little variability, monitoring for nitrite and organic nitrogen may be eliminated for discharges to Basalt Pond. Note that upon completion of the reclamation system, the Discharger will be required to monitor for nitrogen constituents for discharges to the reclamation system.

[18] Monitoring for aluminum shall be conducted quarterly for the first year of the permit term. If sample results from the first year of the permit term indicate that aluminum concentrations in the effluent are below the applicable MCL and do not pose a threat to water quality, then specific monitoring requirements for aluminum may be reduced or eliminated. If sample results indicate that aluminum concentrations are greater than the applicable MCL or may pose a threat to water quality, then the Discharger shall continue quarterly monitoring for aluminum.

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the sensitivity of both species is equal, WET testing shall be conducted using the rainbow trout, *Oncorhynchus mykiss* for the remaining term of this Order. **The next two-species acute WET test shall be conducted by March 2014.**

4. **Test Methods.** The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions), or other methods approved by the Executive Officer.

   Test procedures related to pH control, sample filtration, aeration, temperature control and sample dechlorination shall be performed in accordance with the USEPA method and fully explained and justified in each acute toxicity report submitted to the Regional Water Board. The control of pH in acute toxicity tests is allowed, provided the test pH is maintained at the effluent pH measured at the time of sample collection, and the control of pH is done in a manner that has the least influence on the test water chemistry and on the toxicity of other pH sensitive materials such as some heavy metals, sulfide and cyanide.

5. **Test Dilutions.** The acute toxicity test shall be conducted using 100 percent effluent collected at Monitoring Location EFF-001.

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

7. **Accelerated Monitoring.** If the result of any acute toxicity test fails to meet the single test minimum limitation (70 percent survival), and the testing meets all test acceptability criteria, the Discharger shall take two more samples, one within 14 days and one within 21 days following receipt of the initial sample result. If any one of the additional samples do not comply with the three sample median minimum limitation (90 percent survival), the Discharger shall initiate a Toxicity Reduction Evaluation (TRE) in accordance with section VI.C.2.a of the Order. If the two additional samples are in compliance with the acute toxicity requirement and testing meets all test acceptability criteria, then a TRE will not be required. If the discharge stops before additional samples can be collected, the Discharger shall contact the Executive Officer within 21 days with a plan to demonstrate compliance with the effluent limitation.

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8. **Notification.** The Discharger shall notify the Regional Water Board in writing 14 days after the receipt of test results exceeding the acute toxicity effluent limitation. The notification will describe actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by this Order, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

9. **Reporting.** Test results for acute toxicity tests shall be reported according to section 12 (Report Preparation) of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms or in an equivalent format that clearly demonstrates that the Discharger is in compliance with effluent limitations, and other permit requirements.

B. Chronic Toxicity Testing

The Discharger shall conduct chronic toxicity testing to demonstrate compliance with the Basin Plan's water quality objective for toxicity. The Discharger shall meet the following chronic toxicity testing requirements:

1. **Test Frequency.** The Discharger shall conduct annual chronic WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001, as summarized in Table E-4, above.

2. **Sample Type.** Effluent samples from Monitoring Location EFF-001 shall be 24-hour composite samples. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

3. **Test Species.** Test species for chronic WET testing shall be shall be a vertebrate, the fathead minnow, *Pimephales promelas* (larval survival and growth), an invertebrate, the water flea, *Ceriodaphnia dubia* (survival and reproduction test), and a plant, the green algae, *Selanastrum capricornutum* (growth test). At least one time every 5 years, the Discharger shall conduct two suites of chronic WET testing using the three species listed above. After this screening period, monitoring shall be conducted annually using the most sensitive species. **The next multiple species chronic WET test shall be conducted by March 2014.**

4. **Test Methods.** The presence of chronic toxicity shall be estimated as specified in USEPA's *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms* (USEPA Report No. EPA-821-R-02-013, or subsequent editions).

   Test procedures related to pH control, sample filtration, aeration,

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temperature control and sample dechlorination shall be performed in accordance with the USEPA method and fully explained and justified in each acute toxicity report submitted to the Regional Water Board. The control of pH in chronic toxicity tests is allowed, provided the test pH is maintained at the pH of the receiving water measured at the time of sample collection, and the control of pH is done in a manner that has the least influence on the test water chemistry and on the toxicity of other pH sensitive materials such as some heavy metals, sulfide and cyanide.

5. **Test Dilutions.** The chronic toxicity test shall be conducted using a series of at least five dilutions and a control. The series shall consist of the following dilution series: 12.5, 25, 50, 75, and 100 percent, and a control. Control and dilution water shall be receiving water collected at an appropriate location upstream of the discharge point. Laboratory water may be substituted for receiving water, as described in the USEPA test methods manual, upon approval by the Executive Officer. If the dilution water used is different from the culture water, a second control using culture water shall be used.

6. **Reference Toxicant.** If organisms are not cultured in-house, concurrent testing with a reference toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).

7. **Test Failure.** If either the reference toxicant test or the chronic toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger shall re-sample and re-test as soon as possible, not to exceed 14 days following notification of test failure.

8. **Notification.** The Discharger shall notify the Regional Water Board in writing within 14 days after the receipt of test results that indicate an exceedance of the monitoring trigger for chronic toxicity during regular or accelerated monitoring.

9. **Accelerated Monitoring Requirements.** If the result of any chronic toxicity test exceeds the chronic toxicity monitoring trigger of 1.0 TUc as specified in section VI.C.2.a. of the Order, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four additional effluent samples and dilution series (specified in number 5 above) – with one test for each test species that showed toxicity results exceeding the toxicity trigger. Accelerated monitoring tests shall be conducted approximately every week over a 4 week period.

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Testing shall commence within 14 days of receipt of initial sample results which indicated an exceedance of the chronic toxicity trigger. If the discharge will cease before the additional samples can be collected, the Discharger shall contact the Executive Officer within 21 days with a plan to address elevated levels of chronic toxicity in effluent and/or receiving water. The following protocol shall be used for accelerated monitoring and TRE implementation:

a. If the results of four consecutive accelerated monitoring tests do not exceed the chronic toxicity trigger of 1.0 TUc, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, if there is adequate evidence of a pattern of effluent toxicity, the Regional Water Board's Executive Officer may require that the Discharger initiate a TRE.

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

c. If the result of any accelerated toxicity test exceeds an effluent limitation or monitoring trigger, the Discharger shall cease accelerated monitoring and, within thirty (30) days of the date of completion of the accelerated monitoring test, initiate the TRE Workplan developed in accordance with Section VI.C.2.a.(2) of the Order to investigate the cause(s) and identify corrective actions to reduce or eliminate the chronic toxicity. Within thirty (30) days of completing the TRE Workplan implementation, the Discharger shall submit a report to the Regional Water Board including, at a minimum:

    i. Specific actions the Discharger took to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;

    ii. Specific actions the Discharger took to mitigate the impact of the discharge and prevent the recurrence of toxicity;

    iii. Recommendations for further actions to mitigate continued toxicity, if needed; and

    iv. A schedule for implementation of recommended actions.

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C. Chronic Toxicity Reporting

1. **Routine Reporting.** All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals and this Monitoring and Reporting Program. Chronic toxicity test results shall be submitted with the self-monitoring report.

   The WET test report shall contain a narrative report that includes details about WET test procedures and results, including the following:

   a. receipt and handling of the effluent sample that includes a tabular summary of initial water quality characteristics;

   b. the source and make-up of the lab control/diluent water used for the test;

   c. any manipulations done to lab control/diluent and effluent such as filtration, nutrient addition, etc.;

   d. identification of any reference toxicant testing performed;

   e. tabular summary of test results for control water and each effluent dilution and statistics summary to include calculation of NOEC, TU_c and IC_{25};

   f. identification of any anomalies or nuances in the test procedures or results;

   g. Summary and Conclusions section.

   Test results shall include, at a minimum, for each test:

   a. sample date(s)

   b. test initiation date

   c. test species

   d. end point values for each dilution (e.g., number of young, growth rate, percent survival)

   e. NOEC value(s) in percent effluent

   f. IC15, IC25, IC40, and IC50 values (or EC15, EC25…etc.) in percent effluent

   g. TUc values (100/NOEC)

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h. Mean percent mortality (±s.d.) after 96 hours in 100 percent effluent (if applicable)

i. NOEC and LOEC values for reference toxicant test(s)

j. IC50 or EC50 value(s) for reference toxicant test(s)

k. Available water quality measurements for each test (e.g., pH, DO, temperature, conductivity, hardness, salinity, ammonia)

l. Statistical methods used to calculate endpoints.

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

n. Results of applicable reference toxicant data with the statistical output page identifying the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD and dates tested; the reference toxicant control charts for each endpoint, to include summaries of reference toxicant tests performed by the contracting laboratory; and any information on deviations from standard test procedures or problems encountered in completing the test and how the problems were resolved.

2. **Quality Assurance Reporting.** Because the permit requires sublethal hypothesis testing endpoints from methods 1000.0, 1002.0, and 1003.0 in the test methods manual titled *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA-821-R-02-013, 2002), with-in test variability must be reviewed for acceptability and variability criteria (upper and lower PMSD bounds) must be applied, as directed under section 10.2.8 – *Test Variability* of the test methods manual. Under section 10.2.8, the calculated PMSD for both reference toxicant test and effluent toxicity test results must be compared with the upper and lower PMSD bounds variability criteria specified in Table 6 – *Variability Criteria (Upper and Lower PMSD Bounds) for Sublethal Hypothesis Testing Endpoints Submitted Under NPDES Permits*, following the review criteria in paragraphs 10.2.8.2.1 through 10.2.8.2.5 of the test methods manual. Based on this review, only accepted effluent toxicity test results shall be reported.

3. **Compliance Summary.** Each monthly self-monitoring report shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency (routine, accelerated, or TRE). The annual report shall clearly demonstrate that the Discharger is in compliance with effluent limitations and other permit requirements.

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VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

This section is not applicable to the Discharger as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Discharger reclaims treated wastewater thus the Discharger has Reclamation Monitoring Requirements rather than Land Discharge Monitoring Requirements.

VII. RECLAMATION MONITORING REQUIREMENTS

The following reclamation requirements are applicable during periods when the reclamation system is being used. No monitoring is required during periods when all effluent is discharged to Basalt Pond.

A. Recycled Water Monitoring

1. The Discharger shall monitor treated, disinfected wastewater that will be reclaimed prior to discharge to the 25 million gallon recycled water storage pond at Monitoring Location **REC-001** as follows:

Table E-5. Reclamation Monitoring Requirements – REC-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow[19]	mgd	Meter	Continuous	Meter
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Grab	Weekly	Standard Methods[3]
Total Suspended Solids	mg/L	Grab	Weekly	Standard Methods[3]
Total Coliform Bacteria	MPN/100 mL	Grab	Daily	Standard Methods[3]
pH	standard units	Grab	Weekly	Standard Methods[3]
Visual Observations[20]	--	--	Daily	Visual

2. The Discharger shall monitor treated wastewater prior to reclamation at Monitoring Location **REC-002** as follows:

[19] Each month, the Discharger shall report the average and maximum daily flow rate discharged to the recycled water storage pond.

[20] Visual observations shall be conducted during and immediately after any discharge to the irrigation system, and shall include a record of any odors, evidence of surface run-off, or other signs of malfunction or improper operation. The monthly monitoring report shall include the daily volume of treated wastewater discharged to the irrigation system and any observations indicating non-compliance with the provisions of the waste discharge requirements.

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Table E-6. Reclamation Monitoring Requirements – REC-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow[21]	mgd	Meter	Continuous	Meter
Ammonia Nitrogen[22]	mg/L	Grab	Monthly	Standard Methods[3]
Nitrate Nitrogen[22]	mg/L	Grab	Monthly	Standard Methods[3]
Nitrite Nitrogen[22]	mg/L	Grab	Monthly	Standard Methods[3]
Organic Nitrogen[22]	mg/L	Grab	Monthly	Standard Methods[3]
TDS	mg/L	Grab	Monthly[23]	Standard Methods[3]
Chloride	mg/L	Grab	Monthly[23]	Standard Methods[3]
Boron	mg/L	Grab	Monthly[23]	Standard Methods[3]
Sodium	mg/L	Grab	Monthly[23]	Standard Methods[3]
Title 22 Pollutants	mg/L	24-hour composite	1X/5 years[24]	Standard Methods[3]

B. Recycled Water Production and Use.

Recycled water quality characteristics and precipitation data shall be used to ascertain nitrogen loading rates at each recycled water use site. The following information shall be reported for each use site:

Table E-7. Recycled Water Production and Use

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[21] Each month, the Discharger shall report the volume of recycled water delivered to each recycled water use site. In addition, the Discharger shall report the number of days that treated wastewater was used for reclamation at authorized reclamation sites,

[22] Monitoring for ammonia, nitrate, nitrite and organic nitrogen is for the purpose of determining total nitrogen concentration for agronomic rate calculations.

[23] The monitoring frequency for TDS, chloride, boron, and sodium may be reduced or eliminated if monitoring data demonstrates that any of these constituents are consistently present at concentrations that do not pose a threat to groundwater or surface water quality.

[24] Sample to be collected between June and September during first year of reclamation.

Parameter	Units	Sample Type	Minimum Sampling Frequency
Volume of recycled water[25]	Acre-feet	Meter	Monthly
Total area of application	Acres	Observation	Monthly
Total Nitrogen (as N) application rate[26,27]	Lbs N/acre-month	Calculation	Monthly
Rainfall[28]	Inches	Gage	Daily

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Surface Water

1. The Discharger shall monitor downstream conditions in Basalt Pond at Monitoring Location RSW-001 during periods of discharge to Basalt Pond as follows:

Table E-8. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow[29]	cfs or mgd	Meter	Daily	---
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Grab	Monthly	Standard Methods[3]
Turbidity	NTU	Grab	Monthly	Standard Methods
Hardness, Total (as $CaCO_3$)[31]	mg/L	Grab	Monthly[5]	Standard Methods

[25] Estimation of the volume of recycled water shall not include other potable or non-potable "make-up" water used in conjunction with recycled water.
[26] Nitrogen application rate shall consider nitrogen content of the recycled water, based on analytical data obtained by the Discharge.
[27] Nitrogen concentrations shall be calculated and reported "as N". For example, nitrate-nitrogen= 27 mg/L as NO_3 shall be converted and reported as nitrate-nitrogen = 6.1 mg/L as N using a conversion factor of 14.0067 (N)/62.0049 (NO_3)
[28] Rainfall monitoring at the wastewater treatment plant is acceptable.
[29] The flow rate shall be determined using the sum of the flows at USGS Gauge No. 11-4640.00 in the Russian River near Healdsburg and USGS Gauge No. 11-4653.50 in Dry Creek near its mouth.
[31] Effluent and receiving water hardness samples shall be collected on the same day and at approximately the same time as effluent samples for copper and hardness.

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
.				
.				
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Monthly	Standard Methods[3]
Phosphorus, Total (as P)	mg/L	Grab	Monthly	Standard Methods[3]
Title 22 Pollutants	mg/L	Grab	1X/5 years (concurrent with effluent monitoring)	Standard Methods[3]

B. Groundwater.

There are no groundwater monitoring requirements in this monitoring and reporting program. Groundwater monitoring may be established in the future if necessary to assess impacts of effluent discharge to the reclamation system.

IX. OTHER MONITORING REQUIREMENTS

A. Filtration Process Monitoring

1. Effluent Filter Monitoring (Monitoring Location INT-001)

a. **Monitoring.** The turbidity of the filtered effluent shall be continuously measured and recorded. Should the turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours. The recorded data shall be maintained by the Discharger for at least 3 years. The daily average and daily maximum turbidity results shall be reported on the monthly monitoring reports.

b. **Compliance.** Compliance with the daily average effluent turbidity limitation specified in the California Code of Regulations Water Recycling Criteria (title 22), as referenced in section IV.D.1.a of the Order, shall be determined by averaging all turbidity readings collected in a calendar day. Compliance shall be determined using the levels of recorded turbidity taken at intervals of no more than 1.2 hours over a 24-hour period.

c. **Reporting.** If the filtered effluent turbidity exceeds 0.2 NTU for more than 15 minutes in a 24-hour period, the incident shall be reported within the monthly self-monitoring report. If the filtered effluent turbidity exceeds 0.5 NTU at any time, the incident shall be reported to the Regional Water Board and CDPH by telephone within 24 hours. A written report

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describing the incident and the actions undertaken in response shall be included in the monthly self-monitoring report. Mitigation of the event shall consist of diverting all inadequately treated wastewater to temporary storage or an upstream process.

B. Disinfection Process Monitoring for Ultraviolet (UV) Disinfection System (Monitoring Location EFF-001)

The following disinfection process monitoring requirements must be implemented:

1. **Monitoring.** The UV transmittance of the effluent from the UV disinfection system shall be monitored continuously and recorded. The operational UV dose shall be calculated from UV transmittance and exposure time, using lamp age and sleeve fouling factors.

2. **Compliance.** The UV transmittance shall not fall below 65 percent of maximum at any time, unless otherwise approved by CDPH. The operational UV dose shall not fall below 80 millijoules per square centimeter (mJ/cm2) at any time, unless otherwise approved by CDPH.

3. **Reporting.** The Discharger shall report daily average and lowest daily transmittance and operational UV dose on its monthly monitoring reports. If the UV transmittance falls below 65 percent or UV dose falls below 80 mJ/cm2, the event shall be reported to the Regional Water Board and CDPH by telephone with 24 hours. Any inadequately treated and disinfected wastewater shall be diverted to a storage basin or an upstream process for adequate treatment.

C. Visual Monitoring of Discharge (EFF-001) and Receiving Water (RSW-001)

Visual observations of the discharge and the receiving water shall be recorded monthly and on the first day of each intermittent discharge. Visual monitoring shall include, but not be limited to, observations for floating materials, coloration, objectionable aquatic growths, oil and grease films, and odors. Visual observations shall be recorded and included in the Discharger's monthly monitoring reports.

X. 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.

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2. Schedules of Compliance. If applicable, the Discharger shall submit all reports and documentation required by compliance schedules that are established by this Order. Such reports and documentation shall be submitted to the Regional Water Board on or before each compliance date established by this Order. If noncompliance is reported, the Discharger shall describe the reasons for noncompliance and a specific date when compliance will be achieved. The Discharger shall notify the Regional Water Board when it returns to compliance with applicable compliance dates established by schedules of compliance.

B. 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 SMRs. 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. The Discharger shall submit monthly 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. All monitoring results reported shall be supported by the inclusion of the complete analytical report from the laboratory that conducted the analyses.

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

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Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second calendar month following month of sampling
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January through March April through June July through September October through December	First day of second calendar month following end of quarter
Annually	January 1 following (or on) permit effective date	January 1 through December 31	March 1, each year

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

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

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

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

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

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

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

6. The Discharger shall submit SMRs in accordance with the following requirements:

a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The reported data shall include calculation of all effluent limitations that require averaging, taking of a median, or other computation. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment. During periods of land discharge and/or reclamation discharge, the reports shall certify "land discharge" and/or "reclamation discharge".

b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify:

i. Facility name and address;

ii. WDID number;

iii. Applicable period of monitoring and reporting;

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iv. Violations of the WDRs (identified violations must include a description of the requirement that was violated and a description of the violation);

v. Corrective actions taken or planned; and

vi. The proposed time schedule for corrective actions.

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

Regional Water Quality Control Board
North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

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3. All discharge monitoring results required in accordance with C.2 above must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated or modified cannot be accepted.

D. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C.2 and 3 of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date in compliance with SMR reporting requirements described in subsection X.B.5 above.

2. **Water Reclamation System**

   a. **Reclamation Operations Reporting.** Upon completion and start-up of the Discharger's reclamation system, the Discharger shall submit reports pertaining to the operation, performance, monitoring, and other activities related to water reclamation as follows:

      i. **Quarterly Recycled Water Report.** The Discharger shall submit a quarterly recycled water summary report, as required by section 13523.1(b)(4) of the Water Code, containing the following information:

         (a) Total volume of recycled water supplied to each recycled water user for each month of the reporting period;

         (b) Total number of recycled water use sites;

         (c) Locations of recycled water use sites, including a map and tabular summary with acreage and name of property owner;

         (d) A summary of recycled water use site inspections conducted by the Discharger, including inspection dates and identification of recycled water user violations, including:

            (1) all observations of recycled water overapplication and/or runoff,

            (2) misuse of recycled water,

            (3) cross-connections and/or improper backflow prevention devices, and

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(4) any other violations of the Master Reclamation Permit or the Discharger's rules and regulations;

(e) A summary of operational problems, plant equipment malfunctions, and any diversion of recycled water which does not meet the requirements specified in this Order.

(f) Documentation of notifications to users if any recycled water was delivered that did not meet the requirements specified in this Order.

(g) A record of equipment or process failures initiating an alarm, as well as any corrective and preventative actions;

ii. **Annual Recycled Water Report.** The annual report shall contain the following:

(a) A compliance summary and discussion of the compliance record for the prior calendar year, including:

(1) If violations occurred, the report shall also discuss the corrective actions taken and planned to bring the reclamation program into full compliance with this Order.

(2) An evaluation verifying that the application of recycled water to each use area occurred at reasonable agronomic rates identified in the Irrigation Management Plans required by section C.5 of Attachment G and utilizing the data required by Table E-7 of the MRP. If the agronomic rate evaluation determines that exceedances of the agronomic rate may be occurring, the Discharger shall identify and implement corrective actions to ensure recycled water use occurs at reasonable agronomic rates.

(3) Certification that all reasonable BMPs and management practices were implemented to ensure efficient and compliant operation of the recycled water system.

(4) Identification of any other problems that occurred in the recycled water system during the prior year and plans to rectify those problems in the coming year.

(b) A summary of scheduled and nonscheduled maintenance of the reclamation system appurtenances and irrigation areas;

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(c) Enforcement and monitoring activities that occurred during the previous year, and identification of any problems and how the problems were addressed; and

(d) If applicable, a summary of all cross-connection testing and back-flow prevention activities (inspections, maintenance) and a summary of any problems identified, or certification that no problems occurred.

iii. **Other Recycled Water Reporting.**

(a) **New Use Site Reporting.** When new user(s) are considered to be added to the reclamation system, the Discharger shall notify the Regional Water Board of the new users in accordance with Water Reclamation Technical Report Requirement C.1.a.iii in Attachment G. The notice shall include the following: map identifying site location and location of irrigation system in relation to surface waters and wells; acreage involved; County Assessor Parcel number(s); name of property owner and/or user; user agreement; use site inspection schedule; and Operations and Management Plan (which includes an Irrigation Management Plan).

3. **Annual Report.** The Discharger shall submit an Annual Report to the Regional Water Board for each calendar year. The report shall be submitted by March 1st of the following year. The report shall, at a minimum, include the following:

a. Both tabular and, where appropriate, graphical summaries of the monitoring data and disposal records from the previous year. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved under title 40, section 136 or as specified in this Order, the results of this monitoring shall be included in the calculation and report of the data submitted SMR.

b. A comprehensive discussion of the facility's compliance (or lack thereof) with all effluent limitations and other WDRs, and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the Order.

c. The names, certificate grades, and general responsibilities of all persons employed at the Facility.

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d. The names and telephone numbers of persons to contact regarding the wastewater treatment facility for emergency and routine situations.

e. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

f. A statement certifying whether the current operation and management manual, and spill contingency plan, reflect the wastewater treatment facility as currently constructed and operated, and the dates when these documents were last reviewed and last revised for adequacy.

g. **Sanitary Sewer System Reporting.** The Discharger shall submit, as part of its annual report to the Regional Water Board, a description of the Discharger's activities within the sanitary sewer system over the previous 12 months. The report shall contain:

   i. A description of any change in the local legal authorities enacted to implement the Sewer System Management Plan (SSMP);

   ii. A summary of the SSOs that occurred in the past year. The summary shall include the date, location of overflow point, affected receiving water (if any), estimated volume, and cause of the SSO, and the names and addresses of the responsible parties as well as the names and addresses of the property owner(s) affected by the sanitary sewer overflow.

   iii. A summary of compliance and enforcement activities during the past year. The summary shall include fines, other penalties, or corrective actions taken as a result of the SSO. The summary shall also include a description of public participation activities to involve and inform the public;

   iv. Documentation that all feasible steps to stop and mitigate impacts of sanitary sewer overflows have been taken.

h. **Source Control Activity Reporting.** The Discharger shall submit, as part of its annual report to the Regional Water Board, a description of the Discharger's source control activities, as required by Provision VI.C.5.b. of this Order. This annual report is due on March 1st of each year.

   i. A copy of the source control standards.

   ii. A description of the waste hauler permit system.

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iii. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of any industrial or commercial users under surveillance by the Discharger, an explanation of whether they were inspected, sampled, or both, the frequency of these activities at each user, and the conclusions or results from the inspection or sampling of each user.

iv. A summary of any waste survey results.

v. A summary of public participation activities to involve and inform the public.

i. **Biosolids Handling and Disposal Activity Reporting.** The Discharger shall submit, as part of its annual report to the Regional Water Board, a description of the Discharger's solids handling, disposal and reuse activities over the previous twelve months. At a minimum, the report shall contain:

i. Annual sludge production, in dry tons and percent solids

ii. A schematic diagram showing sludge handling facilities (e.g., digesters, thickeners, drying beds, etc.), if any and a solids flow diagram.

iii. Methods of final disposal of sludge:

(a) For any portion of sludge discharged to a sanitary landfill, the Discharger shall provided the volume of sludge transported to the land fill, the names and locations of the facilities receiving sludge, the Regional Water Board's WDRs order number for the regulated landfill, and the landfill classification.

(b) For any portion of sludge discharged through land application, the Discharger shall provide the volume of biosolids applied, the date and locations where biosolids were applied, the Regional Water Board's WDRs order number for the regulated discharge, a demonstration that the discharge was conducted in compliance with applicable permits and regulations, and, if applicable, corrective actions taken or planned to bring the discharge into compliance with WDRs.

(c) For any portion of sludge further treated through composting, the Discharger shall provide a summary of the composting process, the volume of sludge composted, and a demonstration and

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signed certification statement that the composting process and final product met all requirements for Class A biosolids.

j. **Storm Water Reporting.** The Discharger shall submit, as part of its annual report to the Regional Water Board, an evaluation of the effectiveness of the Discharger's best management practices (BMPs) to control storm water, as well as activities to maintain and upgrade these BMPs.

k. **Chlorine Usage.** The Discharger is required to update the SOPs as needed and report any changes to the SOPs or change in chlorine usage. If there have been no changes to the SOPs or chlorine usage, the Discharger shall report that no changes have been made in the annual report.

l. **Recycled Water Pipe Identification.** The Discharger shall document compliance with California Health and Safety Code section 116815 regarding the installation and marking of recycled water piping.

E. Spills and Overflows Notification

1. All spills, unauthorized discharges, and sanitary sewer overflows (SSOs) equal to or in excess of 1,000 gallons or any size spill or SSO that results in a discharge to a drainage channel or a surface water:

   a. As soon as possible, but not later than **two (2) hours** after becoming aware of the discharge, the Discharger shall notify the State Office of Emergency Services (OES), the local health officer or directors of environmental health with jurisdiction over affected water bodies or land areas, and the Regional Water Board.[33]

      Information to be provided verbally to the Regional Water Board includes:

      i. Name and contact information of caller;
      ii. Date, time and location of spill occurrence;
      iii. Estimates of spill volume, rate of flow, and spill duration;
      iv. Surface water bodies impacted, if any;
      v. Cause of spill;
      vi. Cleanup actions taken or repairs made; and

[33] The contact number for spill reporting for the Office of Emergency Services is (800) 852-7550. The contact number of the Regional Water Board during normal business hours is (707) 576-2220. After normal business hours, spill reporting to OES will satisfy the 2 hour notification requirement for the Regional Water Board.

vii. Responding agencies.

b. As soon as possible, but not later than **twenty-four (24) hours** after becoming aware of a discharge, the Discharger shall submit to the Regional Water Board a certification that the State Office of Emergency Services and the local health officer or directors of environmental health with jurisdiction over affected water bodies or land areas have been notified of the discharge. For the purpose of this requirement, "certification" means an OES certification number and, for the local health department, name of local health staff, department name, phone number and date and time contacted.

c. Within **five (5) business days**, the Discharger shall submit a written report to the Regional Water Board office. The report must include all available details related to the cause of the spill and corrective action taken or planned to be taken, as well as copies of reports submitted to other agencies.

   i. Information provided in the verbal notification;
   ii. Other agencies notified by telephone;
   iii. Detailed description of cleanup actions and repairs taken; and
   iv. Description of actions that will be taken to minimize or prevent future spills.

d. In the cover letter of the monthly monitoring report, the Discharger shall include a brief written summary of the event and any additional details related to the cause or resolution of the event, including, but not limited to results of any water quality monitoring conducted.

2. All spills, unauthorized discharges, and sanitary sewer overflows (SSOs) less than 1,000 gallons that do not reach a drainage channel or a surface water:

   a. As soon as possible, but not later than **twenty-four (24) hours** after becoming aware of the discharge, the Discharger shall notify the Regional Water Board and provide the applicable information in requirement 1.a of this section.

   b. In the cover letter of the monthly monitoring report, the Discharger shall include a written description of the spill event.

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Attachment E-1. Final Copper Effluent Limitations[1]

Hardness[2] (mg/L as $CaCO_3$)	CCC[3] 4-Day Average (µg/L)	CMC[4] 1-Hour Average (µg/L)	0.62*CCC[5]	0.41*CMC[4]	Lowest LTA[6]	AMEL[7] (µg/L)	MDEL[8] (µg/L)
5	0.72	0.83	0.45	0.34	0.34	0.47	0.83
10	1.3	1.6	0.81	0.66	0.66	0.91	1.59
15	1.8	2.3	1.14	0.96	0.96	1.34	2.32
20	2.4	3.1	1.46	1.26	1.26	1.75	3.05
25	2.9	3.8	1.77	1.55	1.6	2.16	3.76
30	3.3	4.5	2.07	1.85	1.8	2.57	4.47
35	3.8	5.2	2.36	2.13	2.1	2.97	5.17
40	4.3	5.9	2.64	2.42	2.4	3.36	5.86
45	4.7	6.6	2.92	2.70	2.7	3.76	6.55
50	5.2	7.3	3.20	2.99	3.0	4.15	7.23
55	5.6	8.0	3.47	3.27	3.3	4.54	7.91
60	6.0	8.7	3.74	3.55	3.5	4.93	8.58
65	6.5	9.3	4.00	3.82	3.8	5.32	9.26
70	6.9	10	4.26	4.10	4.1	5.70	9.93
75	7.3	11	4.52	4.38	4.4	6.08	10.59
80	7.7	11	4.78	4.65	4.7	6.47	11.26
85	8.1	12	5.03	4.92	4.9	6.85	11.92
90	8.5	13	5.29	5.20	5.2	7.22	12.58
95	8.9	13	5.54	5.47	5.5	7.60	13.23
100	9.3	14	5.78	5.74	5.7	7.98	13.89
105	9.7	15	6.03	6.01	6.0	8.35	14.54
110	10	15	6.27	6.28	6.3	8.72	15.18
115	11	16	6.52	6.55	6.5	9.06	15.77
120	11	17	6.76	6.82	6.8	9.40	16.36
125	11	17	7.00	7.08	7.0	9.73	16.94
130	12	18	7.24	7.35	7.2	10.06	17.51
135	12	19	7.47	7.62	7.5	10.39	18.09
140	12	19	7.71	7.88	7.7	10.72	18.66
145	13	20	7.95	8.15	7.9	11.04	19.23
150	13	21	8.18	8.41	8.2	11.37	19.79
155	14	21	8.41	8.67	8.4	11.69	20.36
160	14	22	8.64	8.94	8.6	12.01	20.92
165	14	22	8.87	9.20	8.9	12.33	21.47
170	15	23	9.10	9.46	9.1	12.65	22.03
175	15	24	9.33	9.72	9.3	12.97	22.58
180	15	24	9.56	9.99	9.6	13.29	23.13
185	16	25	9.78	10.25	9.8	13.60	23.68
190	16	26	10.01	10.51	10.0	13.91	24.22
195	17	26	10.23	10.77	10.2	14.23	24.77
200	17	27	10.46	11.03	10.5	14.54	25.31
205	17	28	10.68	11.29	10.7	14.85	25.85
210	18	28	10.90	11.55	10.9	15.16	26.39
215	18	29	11.12	11.81	11.1	15.46	26.92
220	18	29	11.35	12.06	11.3	15.77	27.46
225	19	30	11.57	12.32	11.6	16.08	27.99
230	19	31	11.78	12.58	11.8	16.38	28.52
235	19	31	12.00	12.84	12.0	16.68	29.05
240	20	32	12.22	13.10	12	16.99	29.58
245	20	33	12.44	13.35	12	17.29	30.10
250	20	33	12.66	13.61	13	17.59	30.63
255	21	34	12.87	13.87	13	17.89	31.15
260	21	34	13.09	14.12	13	18.19	31.67
265	21	35	13.30	14.38	13	18.49	32.19
270	22	36	13.52	14.63	14	18.79	32.71
275	22	36	13.73	14.89	14	19.08	33.22
280	22	37	13.94	15.14	14	19.38	33.74
285	23	38	14.15	15.40	14	19.67	34.25
290	23	38	14.37	15.65	14	19.97	34.77

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1 All copper effluent limitations calculated using default Water Effect Ratio of 1.0 and default dissolved-to-total metal translators to convert copper water quality objectives from dissolved to total recoverable.
2 Hardness = hardness of the receiving water at the time the discharge is sampled
3 CCC (Criteria Continuous Concentration) = (0.8545*(LN(hardness))-1.702
4 CMC (Criteria Maximum Concentration) = (0.8545*(LN(hardness))-1.702
5 Calculated using a coefficient of variation (CV) of 0.44
6 LTA = Long-term average
7 AMEL (Average Monthly Effluent Limitation) = 1.39*(minimum 0.62CCC,0.41CMC)
8 MDEL (Maximum Daily Effluent Limitation) = 2.42*(minimum 0.62CCC,0.41CMC)

Hardness[2] (mg/L as $CaCO_3$)	CCC[3] 4-Day Average (µg/L)	CMC[4] 1-Hour Average (µg/L)	0.62*CCC[5]	0.41*CMC[4]	Lowest LTA[6]	AMEL[7] (µg/L)	MDEL[8] (µg/L)
295	24	39	14.58	15.91	15	20.26	35.28
300	24	39	14.79	16.16	15	20.56	35.79
310	25	41	15.21	16.67	15	21.14	36.80
320	25	42	15.63	17.17	16	21.72	37.82
330	26	43	16.04	17.68	16	22.30	38.82
340	27	44	16.46	18.18	16	22.88	39.83
350	27	46	16.87	18.69	17	23.45	40.83
360	28	47	17.28	19.19	17	24.02	41.82
370	29	48	17.69	19.69	18	24.59	42.81
380	29	49	18.10	20.19	18	25.16	43.80
390	30	50	18.50	20.69	19	25.72	44.78
400	30	52	18.91	21.19	19	26.28	45.76
>400	30	52	18.91	21.19	19	26.28	45.76

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ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	1B82046OSON
Discharger	City of Healdsburg
Name of Facility	City of Healdsburg Water Reclamation Facility
Facility Address	340 Foreman Lane
	Healdsburg, CA 95448
	Sonoma County
Facility Contact, Title and Phone	Mike Kirn, Director of Public Works, (707) 431-3346
Authorized Person to Sign and Submit Reports	Mike Kirn, Director of Public Works, (707) 431-3346 or other City of Healdsburg engineering staff or current wastewater treatment plant supervisor with proper signatory authority
Mailing Address	401 Grove Street, Healdsburg, CA 95448
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	No
Reclamation Requirements	Producer
Facility Permitted Flow	1.4 million gallons per day (mgd) (average daily dry weather flow)
Facility Design Flow	1.4 mgd (average dry weather treatment capacity) 4.0 mgd (peak wet weather treatment capacity)
Watershed	Russian River Hydrologic Unit, Geyserville Hydrologic Subarea
Receiving Water	Basalt Pond, part of the Russian River
Receiving Water Type	Inland surface water

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A. The City of Healdsburg (hereinafter Discharger) is the owner and operator of the City of Healdsburg Water Reclamation Facility (hereinafter Facility), a POTW, as shown on Attachment B.

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. The Facility discharges wastewater to Basalt Pond, a water of the United States which is physically connected to the Russian River, and is currently regulated by Order No. R1-2005-0084 which was adopted on October 12, 2005, revised on January 17, 2008, and expired on October 6, 2009. The Discharger is also regulated by Monitoring and Reporting Program (MRP) No. R1-2004-0111, which was adopted on November 29, 2004. The terms and conditions of the current Order and MRP have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a Report of Waste Discharge and submitted an application for renewal of its WDRs and NPDES permit on July 25, 2008. Supplemental information was requested on April 9, 2009 and received on May 15, 2009. A site visit was conducted on May 5, 2009, to observe operations and collect additional data to develop permit limitations and conditions. The permit application was deemed complete on May 18, 2009.

II. FACILITY DESCRIPTION

The Discharger owns and operates a wastewater collection, treatment, and disposal facility and provides sewerage service to a population of approximately 12,200, including residential, commercial, industrial, and municipal customers. The Discharger's wastewater makeup is approximately 90 percent residential flow and 10 percent combined commercial, industrial and municipal flows. The Discharger does not accept the discharge of septage or bulk loads.

Construction of the original Foreman Lane Facility, an aerated pond system, was completed in 1970. Prior to that, the Discharger treated all wastewater at the old treatment plant located within the existing City corporation yard at 550 Westside Road. Until the 1970 expansion, all treated wastewater was discharged to Dry Creek. Additional improvements to the Facility were constructed in 1983, including a new chlorine disinfection building and chlorine contact basin and the present outfall pipeline to Basalt Pond.

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A. Description of Wastewater and Biosolids Treatment or Controls

Collection System

The Discharger's wastewater collection system includes approximately 36 miles of sewer mains, 800 manholes, nine sewer lift stations, and several miles of pressurized force main. The oldest portions of the system are approximately 100 years old. Mains range in size from 4 to 33 inches. Collection system pipe materials include asbestos cement (AC) pipe, vitrified clay, cast iron, and polyvinyl chloride (PVC). There are nine sewer lift stations located throughout the City of Healdsburg that convey sewage from isolated low-lying areas into the gravity main system. All sewage discharged to the collection system is ultimately collected and conveyed through a 33-inch gravity main to the Magnolia Lift Station, which is the largest lift station.

The Magnolia sewer lift station, constructed in 1970 as part of the construction contract for the Foreman Lane wastewater treatment plant, essentially functions as the treatment plant headworks. This lift station handles all of the City of Healdsburg's sewage, and includes four dry pit 50-hp vertical turbine pumps with a variable frequency drive level control system. These pumps draw the sewage from the wet well and pass it through two parallel 3,700 foot long, 14-inch diameter force mains to the treatment plant. In most circumstances, one pump operates in a lead position and pumps the entire sewage flow to the treatment plant. The other two pumps are configured in a standby mode for system redundancy. During periods of high flow, multiple pumps will run automatically to handle the increased flow rate. A comminutor/grinder at the lift station reduces large solids in size to less than a ¼-inch before being pumped to the treatment plant. Under all but wet weather conditions, the capacity of only one of the two 14-inch force mains is necessary.

Wastewater Treatment

In order to comply with the requirements of Order No. R1-2005-0084, the Discharger upgraded the Facility to provide advanced wastewater treatment. Facility upgrades were completed and the new advanced wastewater treatment system went online on April 15, 2008.

The current Facility is designed to treat an average dry weather flow of 1.4 mgd and a maximum peak flow of 4.0 mgd. The treatment system consists of influent screening and grit removal; biological removal of biochemical oxygen demand (BOD) and nitrogen in aerobic, anoxic, and pre-anoxic basins; membrane bioreactor (MBR) filtration; ultraviolet (UV) light disinfection; and return activated sludge pumping from the MBR back to the aeration basins. Waste activated sludge pumping removes excessive biomass from the system, followed by a proprietary sludge digestion process, dewatering via centrifuge, and disposal to a sanitary landfill.

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The MBR combines the secondary biological treatment and immersed membrane filtration processes. The immersed membrane filtration process separates suspended solids from the wastewater using a very fine filter (i.e., ultrafilter). The MBR system at the Facility consists of five membrane tanks which contain immersed membrane filters with a total filter area of at least 250,000 square feet. The MBR system is designed to treat a peak daily flow of 4.0 mgd in four tanks with a fifth membrane tank, pump, and compressor available for standby capacity. Instantaneous peak inflows may exceed 4.0 mgd, and the headworks structure is sized to accommodate peak inflow spikes up to 9.6 mgd.

Disinfection is achieved in an open channel UV disinfection system with sufficient low pressure/high output lamps to disinfect a peak daily flow of 4.0 mgd. The UV disinfection system is located downstream of the MBR tanks. The MBR filtrate pumps discharge directly to the UV basin. Filtered and UV disinfected wastewater flows by gravity to the recycled water storage pond or Basalt Pond.

The previous treatment system consisted of five treatment ponds. As part of the Facility upgrade, two of the treatment ponds (Ponds A1 and A2) were converted to influent equalization ponds. With a capacity of approximately 5 million gallons, the converted ponds provide equalization storage capacity for extended wet weather flows. The remaining three ponds (Ponds 1, 2, and 3) remain available for use as emergency storage ponds, providing an additional 15 million gallons of storage capacity. The Discharger has the ability to divert inadequately treated wastewater from downstream of the UV disinfection system to Ponds 1, 2, and 3, and return the inadequately treated wastewater from Ponds 1, 2, and 3 to the headworks and tertiary treatment processes using portable pumping equipment. The 15 million gallons of capacity in Ponds 1, 2, and 3 provide more than 24 hours of emergency storage capacity during peak flows.

Recycled Water

As part of the treatment plant upgrade, recycled water storage pond with a synthetic liner was constructed that provides storage for approximately 25 million gallons of disinfected tertiary treated recycled water. The Discharger plans to construct a recycled water system in phases as funding is available. Recycled water will be delivered by an effluent pump station from the recycled water storage pond to the recycled water system or gravity fed to Basalt Pond, depending on the seasonal requirements of the NPDES permit. Additional details about the recycled water system are included in Fact Sheet section II.E–Planned Changes.

Biosolids

The City uses a proprietary solids removal and digestion process that combines aerobic and anaerobic processes. Solids are periodically removed from the biological process and transferred to two digester tanks, referred to as

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interchange reactors. Transfer to the interchange reactors occurs in a daily decant/fill process, where decanted clear liquid from the interchange reactors is returned to the biological process, and the volume decanted is replaced with solids from the biological process. All solids transferred from the biological process to the interchange tanks are first passed through a 250 micron rotary drum screen to remove inert non-biodegradable material, which is compacted and conveyed to a separate dumpster. In the final solids removal step, digested solids are pumped from the interchange reactor tanks, dosed with polymer for thickening, and then dewatered in a centrifuge and conveyed to a dumpster._All solids are currently being disposed at the Redwood Landfill in Marin County.

B. Discharge Points and Receiving Waters

1. The Facility discharges to Basalt Pond (Discharge Point 001), one of several existing gravel pits that were excavated adjacent to the Russian River in alluvial deposits of sand and gravel. These deposits are part of an important groundwater aquifer that supplies domestic and agricultural well water. Basalt Pond has a surface area of 52 acres, and a maximum depth of 55 feet. Basalt Pond was excavated between the late 1960s and mid-1980s by the Basalt Rock Company, as part of their gravel mining operation. Basalt Pond is currently owned by Syar Industries, Inc. Basalt Pond was excavated in the historic floodplain of the Russian River. A levee, composed primarily of soil and alluvial material, was constructed to separate Basalt Pond from surface flows in the Russian River. The levee is not an engineered barrier designed for impermeability that would prevent discharges of effluent from reaching the Russian River.

   The discharge of wastewater to Basalt Pond, part of the Russian River, is a discharge to waters of the United States, and as such requires an NPDES permit. In an August 6, 2007 decision, the United States Ninth Circuit Court of Appeals affirmed the decision of the United States District Court for the Northern District of California that concluded that Basalt Pond is a water of the United States subject to jurisdiction under the Clean Water Act (CWA) and that the pollutants traveling to the Russian River via hydrologically connected groundwater required the Discharger to obtain an NPDES permit. The Ninth Circuit Court held that discharges to Basalt Pond are subject to the Clean Water Act because the Basalt Pond (1) contains wetlands that are adjacent to the Russian River, a navigable water of the United States, and (2) possesses a significant nexus to the Russian River because waters from the Basalt Pond seep into the Russian River and significantly affect the physical, biological and chemical integrity of the Russian River. (Northern Calif. River Watch v. Healdsburg, 497 F.3d 993 (2007).) Additional details of the District Court decision can be found in Revised Order No. R1-2005-0084 (January 17, 2008).

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2. The *Water Quality Control Plan for the North Coast Region* (hereinafter Basin Plan) prohibits discharges to the Russian River and its tributaries from May 15 through September 30. In order to comply with the seasonal discharge prohibition, the Discharger is planning to construct a reclamation system. The Discharger is planning to discharge tertiary treated, disinfected wastewater to the 25 million gallon recycled water storage pond at Discharge Point 002. Recycled water will be delivered by an effluent pump station from the recycled water storage pond to the recycled water system to authorized reclamation sites at Discharge Point 003 (point of discharge from recycled water storage pond).

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Order No. R1-2004-0064 was adopted on October 6, 2004, with an effective date of November 30, 2004. The Regional Water Quality Control Board (Regional Water Board) adopted Order No. R1-2004-0111 on November 29, 2004, which rescinded Order No. R1-2004-0064 and had an effective date of November 30, 2004. Therefore, the effluent limitations contained in Order No. R1-2004-0064 did not become effective.

2. Effluent limitations contained in Order No. R1-2004-0111 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R1-2004-0111 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitations			Monitoring Data (December 2004 – September 2005)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30[1]	45[1]	--	47	72	--
		10[2]	15[2]	--	--	--	--
	lbs/day[3]	350[1]	525[1]	--	440	1,262	--
		117[2]	175[2]	--	--	--	--
	% Removal	85[4]	--	--	87[5]	--	--

[1] Interim effluent limitations in effect until December 31, 2007.
[2] Final effluent limitation in effect January 1, 2008.
[3] Mass-based effluent limitations are based on the WWTF dry weather design flow of 1.4 mgd. During wet-weather periods when the flow rate into the WWTF exceeds the dry weather design flow, the mass emission limitations shall be calculated using the concentration-based effluent limitations and the actual daily average flow rates (not to exceed the maximum sustained peak design flow of 6.5 mgd).

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Parameter	Units	Effluent Limitations			Monitoring Data (December 2004 – September 2005)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Total Suspended Solids	mg/L	30[1]	45[1]	--	52	92	--
		10[2]	15[2]	--	--	--	--
	lbs/day[3]	350[1]	525[1]	--	935	1,877	--
		117[2]	175[2]	--	--	--	--
	% Removal	85[4]	--	--	63[5]	--	--
Total Coliform Bacteria	MPN/100 mL	--	--	[1,6]	2[7]	--	130
		--	--	[2,8]	--	--	--
pH	standard units	--	--	6.5 – 8.5	--	--	6.7 – 7.7
Chlorine, Total Residual	mg/L	--	--	<0.1[9]	--	--	4.25
Settleable Solids	ml/L	--	--	ND[10]	--	--	0.2
Acute Toxicity	% Survival	--	--	[11,12]	--	--	--

[4] The arithmetic mean of BOD_5 and TSS values for effluent samples collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the values for the influent samples collected at approximately the same times during the same period (85 percent removal). Percent removal shall be determined from the 30-day average value of influent wastewater concentration in comparison to the 30-day average value of effluent concentration for the same constituent over the same time period.

[5] Represents the minimum observed monthly average percent removal.

[6] The disinfected effluent shall not contain concentrations of total coliform bacteria exceeding the following limitations:

a. The monthly median concentration shall not exceed a Most Probable Number (MPN) of 23 per 100 milliliters, using bacteriological results from the calendar month for which analyses have been completed.

b. The daily maximum result shall not exceed 230 MPN per 100 milliliters.

[7] Represents the maximum observed monthly median concentration.

[8] The disinfected effluent discharged from the WWTF to the Basalt Pond shall not contain concentrations of total coliform bacteria exceeding the following limitations:

a. The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters, using the bacteriological results of the last 7 days for which analysis have been completed.

b. The number of coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.

c. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

[9] Effluent discharged to Basalt Pond shall not contain detectable levels of total chlorine using an analytical method or chlorine analyzer with a minimum detection level of 0.1 mg/L.

[10] Effluent shall not contain any measurable settleable solids.

[11] There shall be no acute toxicity in the effluent. The Permittee will be considered in compliance with this limitation when the survival of aquatic organisms in a 96-hour bioassay of undiluted waste complies with the following:

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Parameter	Units	Effluent Limitations			Monitoring Data (December 2004 – September 2005)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Copper	µg/L	22.0[1]	22.0[1]	--	26	26	--
		[2,13]	[2,13]	--	--	--	--

3. The Regional Water Board rescinded Order No. R1-2004-0111 and adopted Order No. R1-2005-0084 on October 12, 2005. Effluent limitations contained in Order No. R1-2005-0084 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R1-2005-0084 are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitations			Monitoring Data (October 2005 – March 2010) Note: Advanced wastewater treatment began May 1, 2008		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	50[14]	80[14]	--	56	74	--
		30[15]	45[15]	--	44	100	--
		10[16]	15[16]	--	5	7	--
	lbs/day[3]	584[14]	934[14]	--	810	2,204	--
		350[15]	525[15]	--	664	1,785	--
		117[16]	175[16]	--	64	82	--
	% Removal	85[5]	--	--	85[5]	--	--

a. Minimum for any one bioassay: 70 percent survival.
b. Median for any three or more consecutive bioassays: at least 90 percent survival.

12 CDO No. R1-2004-0065 provided a time schedule to achieve compliance with this effluent limitation by January 1, 2008.

13 Floating effluent limitations determined using the hardness of the receiving water at the time of effluent copper sampling.

14 Interim effluent limitations established by CDO No. R1-2006-0002 in effect until March 7, 2007.

15 Interim effluent limitation in effect until April 30, 2008.

16 Final effluent limitation in effect May 1, 2008.

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Parameter	Units	Effluent Limitations			Monitoring Data (October 2005 – March 2010) Note: Advanced wastewater treatment began May 1, 2008		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Total Suspended Solids	mg/L	50[14]	80[14]	--	62	70	--
		30[15]	45[15]	--	45	120	--
		10[16]	15[16]	--	2.6	8.9	--
	lbs/day[3]	584[14]	934[14]	--	1,130	1,804	--
		350[15]	525[15]	--	680	1,361	--
		117[16]	175[16]	--	27	76	--
	% Removal	85[5]	--	--	53[5]	--	--
Total Coliform Bacteria	MPN/100 mL	--	--	[6,15]	<2[7]	--	130
		--	--	[8,16]	--	13[17]	900
pH	standard units	--	--	6.5 – 8.5	--	--	6.2 – 8.1
Chlorine, Total Residual	mg/L	--	--	<0.1[9]	--	--	<0.1
Settleable Solids	ml/L	--	--	ND[10]	--	--	<0.1
Acute Toxicity	% Survival	--	--	[11,18]	--	--	100[19]
Copper	µg/L	30.0[20]	30.0[20]	--	84	84	--
		[13,21]	[13,21]	--	--	--	--

D. Compliance Summary

1. Violations Summary

Prior to 2004, the discharge to Basalt Pond was regulated by WDRs. Breaches in the Basalt Pond in 1995 and 1997 that resulted in unpermitted discharges to the Russian River prompted the Regional Water Board to adopt cease and desist orders (CDOs) (see Enforcement Action Summary below) requiring the Discharger to develop solutions to prevent future unpermitted discharges. Following a citizen lawsuit in which it was determined that Basalt Pond was a water of the United States, the Regional Water Board adopted

[17] Represents the maximum observed 7-day median.
[18] CDO No. R1-2004-0065 and CDO No. R1-2006-0002 provided a time schedule to achieve compliance with this effluent limitation by January 1, 2008.
[19] Represents minimum observed percent survival since January 2008.
[20] Interim effluent limitation in effect until October 6, 2009.
[21] Final effluent limitation in effect October 6, 2009.

Waste Discharge Requirements/NPDES permit Order No. R1-2004-0064, NPDES No. CA0025135. Because the Facility had not been previously regulated by an NPDES permit, the Discharger was in non-compliance with several requirements of the NPDES permit, and thus a CDO was adopted concurrently with the NPDES permit. Due to the production of excessive algae growth in the treatment ponds at the Facility that caused increased BOD_5 and total suspended solids (TSS) levels in the effluent, the Discharger experienced numerous exceedances of effluent limitations for BOD_5 and TSS. Thus, another CDO was adopted. In order to comply with the requirements of the NPDES permit and CDOs, the Discharger completed an upgrade to the Facility to provide advanced wastewater treatment in May 2008. Although the upgrade has resulted in compliance with most requirements, the Discharger has still not achieved compliance with the Basin Plan's seasonal discharge prohibition and, as described in section II.E of this Fact Sheet, is planning to construct a reclamation system in order to cease discharges to Basalt Pond from May 15 through September 30 of each year.

During the terms of Order No. R1-2004-0111 (December 2004 through September 2005), the Discharger experienced numerous BOD_5 and TSS violations, and occasional chlorine residual, settleable solids, and copper violations. During the term of Order No. R1-2005-0085 and CDO No. R1-2006-0002, the Discharger continued to experience numerous BOD_5 and TSS violations and occasional coliform, pH, and copper violations.

Only a small number of violations have occurred since the upgraded advanced wastewater treatment plant became operational on May 1, 2008. Three coliform violations occurred in December 2008 during performance testing of the new UV disinfection system. In addition, two monthly copper concentrations exceeded both the average monthly effluent limitation and maximum daily effluent limitation during the months of January and February 2010. Based on almost two years of monitoring data, the upgrade to advanced wastewater treatment has resolved all of the Discharger's former effluent compliance issues. The Discharger will need to evaluate whether copper concentrations can be controlled through modifications to wastewater treatment plant operation or whether additional compliance strategies are necessary.

2. **Enforcement Action Summary**

Important enforcement actions taken against the Discharger, related to violations of waste discharge and NPDES requirements, are summarized below.

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a. **Cease and Desist Order No. 95-65.** The Regional Water Board adopted CDO No. 95-65 on August 24, 1995 in response to breaches of the Basalt Pond levee on January 8, 1995 and March 11, 1995, which caused discharges of wastewater to the Russian River. The CDO required the Discharger to submit a report detailing long- and short-term solutions, including a time schedule for key actions to prevent future unpermitted discharges of wastewater. On November 1, 1995, the Discharger submitted a report required by the CDO. As a short-term response, the Discharger proposed to strengthen the Basalt Pond levee. As a long-term response, the Discharger pledged to investigate, choose, and implement an alternative disposal method. On July 8, 1996, the Discharger requested to change the compliance schedule to allow them to "*extend the scope of their alternatives… to include different and more advanced treatment processes.*" On January 8, 1997, the Discharger requested modification of the schedule contained in the CDO to allow for construction of an engineered percolation pond and an advanced wastewater treatment plant.

b. **Cease and Desist Order No. 97-27.** On January 1, 1997, the Russian River flooded, cutting another breach in the Basalt Pond levee. The Regional Water Board adopted CDO No. 97-27 in response, superseding CDO No. 95-65. The CDO required the Discharger to complete construction of the long-term project by October 1, 2001.

c. **Cease and Desist Order No. R1-2004-0065.** The Regional Water Board adopted CDO No. R1-2004-0065 on October 6, 2004, which superseded CDO No. 97-27. At the time of adoption, the Discharger had not fulfilled the requirements of CDO No. 97-27. CDO No. R1-2004-0065 required the Discharger to comply with the provisions of Order No. R1-2004-0064, which prohibited the discharge of waste to Basalt Pond from May 15 through September 30 and the discharge of acutely toxic effluent to Basalt Pond. Further, CDO No. R1-2004-0065 established schedules to achieve these requirements.

d. **Cease and Desist Order No. R1-2006-0002.** Due to the production of excessive algae growth in the treatment ponds at the Facility that caused increased BOD_5 and TSS levels in the effluent, the Regional Water Board adopted CDO No. R1-2006-0002 on January 25, 2006. CDO No. R1-2006-0002 rescinded CDO No. 97-27 and CDO No. R1-2004-0065, and included time schedules for compliance with the requirements of Order No. R1-2005-0084, which prohibited the discharge of waste to Basalt Pond from May 15 through September 30, the discharge of acutely toxic effluent to Basalt Pond, and the discharge of BOD_5 and TSS in concentrations greater than the effluent limitations contained in Order No.

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R1-2005-0084. Final compliance with the prohibition of discharges from May 15 through September 30 (seasonal discharge prohibition) was required by October 6, 2009. Final compliance with the effluent limitations for acute toxicity was required by January 1, 2008. Final compliance with the interim effluent limitations for BOD_5 and TSS was required by March 7, 2007. The Discharger achieved compliance with effluent limitations for BOD_5, TSS, and acute toxicity. The Discharger has not yet achieved compliance with the seasonal discharge prohibition, and has requested an extension of five years to complete its reclamation system and achieve final compliance. CDO R1-2006-0002 will be revised to provide an additional time extension for compliance with the seasonal discharge prohibition.

e. **Administrative Civil Liability Complaint No. R1-2008-0124.** This complaint was issued on December 12, 2008 to address violations of effluent limitations and discharge prohibitions contained in Order No. R1-2004-0111, Order No. R1-2005-0084, and CDO No. R1-2006-0002 that occurred between November 30, 2004 and April 30, 2008. The complaint describes numerous violations, including a sanitary sewer overflow (SSO) and exceedances of effluent limitations for BOD_5, TSS, copper, and chlorine residual.

f. **Administrative Civil Liability Order No. R1-2010-0005.** This Order was adopted by the Regional Water Board on January 21, 2010 and assessed mandatory minimum penalties for the violations identified in ACLC No. R1-2008-0124 (described in e. above). This Order includes a settlement agreement between the Assistant Executive Officer of the Regional Water Board and the Discharger that allows the Discharger to perform a Supplemental Environmental Project (SEP) in lieu of paying the full MMP. On February 17, 2010, the Discharger paid $177,000 of the $369,000 civil liability assessed in ACLC No. R1-2008-0124. The Discharger is required to complete the agreed upon SEP which is to conduct engineering and design work on the recycled water distribution system and prepare final plans and specification and engineering report by July 14, 2010.

g. Cease and Desist Order No. R1-2010-0035 was adopted by the Regional Water Board on June 10, 2010. This Order requires the Discharger to comply with the Basin Plan seasonal discharge prohibition by ceasing discharges to Basalt Pond during the period of May 15 through September 30 each year. The previous Order No. R1-2005-0084 required compliance with the seasonal discharge prohibition by October 5, 2009. CDO No. R1-2010-0035 provides five additional years beyond the original October 2009 compliance date for the Discharger to comply with the

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seasonal discharge prohibition and includes a series of tasks for the discharge to complete construction of its reclamation project.

3. Planned Changes

The Discharger is planning to construct a reclamation system in order to achieve compliance with the seasonal discharge prohibition for discharges to the Russian River required by the Basin Plan. The reclamation system is a component of the Discharger's Facility upgrade project for which a Draft Environmental Impact Report (EIR) was issued in February 2005 and a Final EIR was certified in July 2005. The Discharger submitted a draft Recycled Water Engineering Report in September 2007 and August 2010 to the Regional Water Board and California Department of Public Health (CDPH) as required by title 22 of the California Code of Regulations (CCR). The Discharger must submit its final title 22 Recycled Water Engineering Report and any approval letters prepared by CDPH to the Regional Water Board Executive Officer in accordance with Water Reclamation Provision D.2 in Attachment G to this Order.

The Discharger is currently pursuing funding for the reclamation system through the United States Department of Agriculture, Rural Utilities Service (USDA RUS) funding program. The Regional USDA RUS administrator is awaiting formal notification on the eligibility of the Discharger for funding from its headquarters. Upon determination that the Discharger is eligible, USDA RUS engineering staff must review the recycled water plans, conduct a financial analysis of the Discharger's current rate-based revenues, and identify the necessary increases in the use rates that would be required to cover the anticipated debt with USDA.

As described in the Discharger's Final EIR, the Discharger's proposed reclamation system would use disinfected tertiary recycled water from the Facility from May 15 through September 30 for irrigation of vineyards and urban turf areas. The Discharger is currently working with Syar, Inc. to begin irrigating approximately 350 acres of Syar vineyard property that surrounds the Facility property to the north, east, and south. Some, but not all of this property was addressed in the 2005 Final EIR. For the additional Syar property acreage, the Discharger issued a Mitigated Negative Declaration (MND) in November 2008. Due to significant public comments, the Discharger reissued the MND for public review and comment on August 21, 2009. The Discharger must certify a final environmental document and submit a technical report with the information required by section C of Attachment G for Regional Water Board Executive Officer approval and public review in advance of proceeding with the Syar property irrigation plan identified in the MND.

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In addition, the Discharger submitted two reports: a June 28, 2010 report prepared by Gus Yates, Consulting Hydrologist titled "Syar Property Recycled Wastewater Agricultural Irrigation Project – Additional Analysis of Potential Groundwater and Russian River Impacts" and a September 21, 2010 report prepared by Gus Yates titled, "Impacts of Recycled Water Irrigation on Groundwater and Surface Water Flow and Quality near Headlsburg: a Generalized Approach." The reports provide an analysis of the potential impacts of nitrogen and salt on groundwater, California Toxics Rule metals on the Russian River and reversal of stream-aquifer gradients and flows. The September 21, 2010 report also addresses the ranges of uncertainty in the impact evaluations, and those ranges identify limits below which no significant impacts are expected and extends the analysis to apply to all vineyards with drip irrigation in the alluvial valley floor area of the Discharger's proposed reclamation project. The reports draw the following conclusions:

(a) that the potential of excessive nitrogen fertilization associated with proposed recycled water irrigation is less than significant because the low nitrogen concentrations in the recycled water and the low irrigation rates result in a small nitrogen loading rate;

(b) that recycled water irrigation would not elevate groundwater total dissolved solids (salts) above the long-term secondary drinking water maximum contaminant level of 500 mg/L because the recycled water (TDS = 330 mg/L) experiences net dilution from infiltrated rainfall as it percolates to the water table and that TDS concentration in groundwater could increase from 170 mg/L to 230 mg/L; and

(c) that salts are not expected to increase in the root zone of the vineyard due to the fact that deep percolation of winter rain is greater than the amount of applied irrigation water and soil salinity can also be managed by occasional irrigation with groundwater, if necessary; a decrease in groundwater pumping for irrigation would not change the direction of stream-aquifer gradients (which historically has been for groundwater to consistently flow into the river), but would increase water level gradients from the aquifer toward the river, which could affect movement of contaminants from groundwater to the river.

The Discharger has proposed the following schedule for completion of the reclamation system and, ultimately, compliance with the Basin Plan's seasonal discharge requirement for discharges to the Russian River. The first two tasks have been completed by the Discharger.

Table F-4. Proposed Schedule for Completion of Reclamation System

Task	Estimated Completion Date
Complete design of reclamation system[22]	July 14, 2010
Submit revised title 22 Recycled Water Engineering Report to CDPH and Regional Water Board	Approximately July 31, 2010
Complete California Environmental Quality Act (CEQA) documentation for the Syar property irrigation project[23]	Approximately December 31, 2010[24]
Secure funding commitment[25]	Approximately June 1, 2011
Advertise construction contract bids	2 months after USDA RUS funding commitment
Award contract for construction of reclamation system	5 months after USDA RUS funding commitment
Complete construction of reclamation system	24 months after USDA RUS funding commitment
Comply with seasonal discharge prohibition	No later than 5 years from adoption of renewed NPDES permit

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section. This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal CWA and implementing regulations adopted by USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs and a Master Reclamation Permit pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260 and 13520, respectively).

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 sections 21100 through 21177.

[22] Reclamation system described in the Discharger's FEIR.
[23] Project described in the November 19, 2008 and July 30, 2009 Initial Study and Mitigated Negative Declaration of Environmental Impact Syar Property Recycled Wastewater Agricultural Irrigation Project.
[24] Contingent on no legal challenges to certification of the MND.
[25] Complete all requirements for USDA RUS funding, including completion of supplemental National Environmental Policy Act (NEPA) documentation[25], and secure funding commitment from USDA RUS.

This action also involves the adoption of a Master Reclamation Permit. The Discharger is planning to construct a reclamation system which is addressed in the *City of Healdsburg Wastewater Treatment Plant Upgrade Project Final Environmental Impacts Report* (FEIR) certified on June 13, 2005 in accordance with CEQA (Public Resources Code section 210000, et seq). The City of Healdsburg also circulated for public comment an Initial Study and Mitigated Negative Declaration (MND) for the Syar Property Recycled Wastewater Agricultural Irrigation Project, Healdsburg, California beginning on August 21, 2009 with the intent of certifying this document prior to construction of the Syar property recycled water project. The City identified mitigation measures in both documents to reduce potential environmental impacts of the proposed reclamation activities. Mitigation measures related to water quality that were approved in the Discharger's certified FEIR are identified in items 1 through 9, below. In addition, the Discharger's certified FEIR acknowledged that the NPDES permit would include all mitigation measures necessary to protect water quality, including mitigation measures identified in the permit adopted by the Regional Water Board.

As a responsible agency under CEQA, the Regional Water Board is required to consider the final certified CEQA document(s) and reach its own conclusions on whether and how to approve a permit for the City's reclamation plan. Prior to adopting this Order, the Regional Water Board considered the environmental effects of the City's reclamation plan as identified in the certified FEIR. In considering alternatives and mitigation measures, the Regional Water Board only has the responsibility for mitigating or avoiding those direct or indirect environmental effects of those parts of the reclamation plan that are within its jurisdiction to approve. (Public Resources Code, Section 21002.1(d); CCR, title 14, section 15096(g) and (h)). The Regional Water Board has required, as a condition of this Order, mitigation measures for those potentially significant impacts over which the Regional Water Board has authority. Attachment G, section C (Water Reclamation Technical Report Requirements) requires the submittal of technical report(s) identifying management practices that will be implemented to protect surface water and groundwater quality. The Discharger must demonstrate that recycled water will be applied at hydraulic and nutrient agronomic rates. The Regional Water Board finds that with implementation of mitigation measures identified in the CEQA document (identified in items 1 through 11, below) and approved technical reports submitted pursuant to section C of Attachment G, all potentially significant impacts of the City's reclamation plan, will be reduced to levels of insignificance.

1. The Discharger's upgraded wastewater treatment facility provides a high quality tertiary effluent that is low in nitrogen and contains relatively low concentrations of salts as measured by total dissolved solids. The Discharger's wastewater treatment facility includes advanced treatment

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technologies, including coagulation, filtration, biological nitrogen removal and ultraviolet light disinfection that produce a high quality tertiary treated effluent. The final effluent contains low levels of nitrate and ammonia due to the biological nitrogen removal process and the ultraviolet light disinfection system prevents the production of trihalomethanes.

2. Irrigation of urban and agricultural recycled water use sites will occur at hydraulic and nutrient agronomic rates. The Discharger is required to submit the specific details of how agronomic rates will be achieved through the technical report requirements in section C (Water Reclamation Technical Report Requirements) of Attachment G.

3. Uses of tertiary recycled water for irrigation of urban landscapes and agricultural operations under the seasonal irrigation option have the potential to create or contribute to incidental offsite runoff and discharge to adjacent drainages. Therefore, discharges of irrigation runoff could reach natural surface waters and potentially cause incidental changes in water quality conditions.

   The potential for such occurrences of offsite runoff from irrigated areas is considered low because the City must develop a detailed engineering report under the applicable title 22 regulations and technical reports that identify operations and management plans, including environmental protection measures, for each use site to protect surface water and groundwater quality. In addition, the highly treated effluent contains low levels of constituents of concern such as nutrients and salts, and irrigation will be at hydraulic agronomic rates which will prevent or minimize the potential for runoff. .

4. Existing agricultural operations may involve frequent ground disturbances that may damage the pipelines.

   Pipelines shall be placed at a depth beyond the typical depth of ground disturbance that occurs as part of the agricultural operations.

5. Construction activities for the WWTP upgrades (including the reclamation system) would include site preparation and grading, vegetation clearing, excavation, and the various aspects of facility construction including, but not limited to, utility trenches, concrete construction, building construction, drainage improvements, paving, and landscaping.

   The City shall prepare a storm water pollution prevention plan (SWPPP) and seek authorization from the Regional Water Board for construction-related activities and obtain appropriate waste discharge requirements. Pollution

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prevention measures shall be incorporated into all final design and construction plans. The SWPPP would describe the proposed construction activities, pollution prevention BMPs that will be implemented to prevent discharge of pollutants, and include a description of BMP inspection and monitoring activities that will be conducted. The SWPPP will be kept updated in regard to modifications to any of the compliance measures, and amended for the Regional Water Board, as necessary.

6. Construction of the Foreman Lane/Tayman Park portion of the reclamation system would involve directional drilling under Dry Creek and a bridge crossing on Foss Creek which could result in the disturbance of special-status plant species. Construction of the Foreman Lane/Mill Creek Road portion of the reclamation system could result in removal of special status plant species due to the conversion of annual grassland to vineyards or irrigated pastureland on up to 40 acres and installation of the recycled water pipeline and recycled water storage tank.

   Before project implementation, surveys for the special-status plants listed in Table 3.4.1 of the EIR shall be conducted by a qualified botanist, in accordance with USFWS and DFG guidelines and at the appropriate time of year when the target species would be in flower or otherwise clearly identifiable. If special-status species found during focused surveys cannot be completely avoided, consultation with DFG, USFWS, or both shall be initiated and an appropriate mitigation plan shall be developed and approved by the relevant agency. The plan may include one or more of the following measures: erecting protective fencing (for indirect impact), providing worker education, locating and enhancing another offsite population of the species, or transplanting the population to a suitable nearby habitat.

   For the bridge crossings of Mill Creek and Foss Creek, pipeline would be attached to either the upstream or downstream vertical edges of bridge decks using engineered brackets. The attachments would be designed so that the pipeline does not intrude into flowing creeks. Pipeline attachments would be designed in accordance with standard engineering practice procedures for seismic safety standards and not be implemented in a manner that would preclude future seismic retrofit of bridges.

7. Construction activities associated with the Foreman Lane to Tayman Park and Foreman Lane/Mill Creek portions of the reclamation system could potentially affect jurisdictional waters of the United States, including wetlands and riparian habitats.

   Before project implementation, a delineation of jurisdictional waters of the United States, including wetlands and riparian habitat, that would be affected

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by the proposed options shall be made by qualified biologists using the USACE methodology for wetland delineations and the applicant shall consult with USACE and the Regional Water Board. Impacts on USACE jurisdictional waters and waters of the State, including wetlands and DFG jurisdictional riparian habitat, should be avoided if feasible. If these sensitive habitats cannot be avoided, then before construction begins, authorization for fill of jurisdictional areas shall be secured from USACE via the Section 404 permitting process, a Section 401 Regional Water Board certification shall be secured for effects on water quality, and a streambed alteration agreement pursuant to section 1602 of the Fish and Game Code shall be secured for impacts to waters and wetlands, including those waters and wetlands not considered under the jurisdiction of the USACE.

The acreage of any jurisdictional habitat removed shall be replaced or rehabilitated on a no-net-loss basis in accordance with USACE and DFG regulations. Habitat restoration, rehabilitation, and replacement shall be at a location and by methods agreeable to USACE and DFG.

An onsite wetlands mitigation plan, including a replacement ratio for wetlands agreed to by USACE, shall be developed by a qualified biologist. The mitigation plan shall quantify the total jurisdictional acreage lost and shall describe creation/replacement ratios for acres filled, annual success criteria, potential mitigation sites, and monitoring and maintenance requirements. The plan shall be prepared by a qualified wetland biologist pursuant to, and through consultation with, USACE. Implementation of the plan shall create wetlands to compensate for the loss of jurisdictional waters of the United States.

Measures to minimize erosion and runoff into drainage channels shall be included in all drainage plans. Appropriate runoff controls, such as berms, storm gates, detention basins, overflow collection areas, filtration systems, and sediment traps, shall be implemented to control siltation and the potential discharge of pollutants.

8. Soil disturbance associated with construction activities would increase the potential for ground instability and erosion, and the placement of fill could result in unstable soil conditions associated with loose or uncompacted fill materials.

   Develop and implement an erosion control plan that specifies BMPs, such as the use of sandbags and the covering of exposed soils that would prevent construction-related pollutants from coming in contact with receiving waters and to minimize onsite erosion.

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9. The topography in the areas where the proposed reclamation system would be constructed varies from flat to hilly areas. The Foreman Lane/Mill Creek Road portion is located in a hilly area with moderate to high potential for landslides. Although the proposed system would be constructed in conformance with the California Building Standards Code (CBC), landslides in this area could result in damage to project structures during operation.

   A design-level geotechnical study shall be completed for the project area before construction permits are issued. The study shall specifically address the susceptibility of the site to landslides and shall include recommendations applicable to earthwork and site preparation, such as buttressing toe slopes and avoiding certain hazardous locations more susceptible to landslides.

10. Some project area soils, including those associated with the Foreman Lane/Mill Creek Road portion, have moderate to high shrink-swell potential. Although the proposed system would be constructed in conformance with the CBC, the shrinking and swelling of these soils could result in damage to project structures during operation.

    A design-level geotechnical study shall be completed for the project area before construction permits are issued. The study shall specifically address whether expansive soils are present in the project area and shall identify measures, such as the use of artificial/imported fill, to address these soils where they occur.

11. In order to allow reclamation at sites not addressed in the certified FEIR, the Discharger will need to conduct an environmental analysis of any potential impacts, and will act as the lead agency for CEQA.

    The Discharger must ensure that all reclamation activities, including those addressed in the existing certified FEIR and any reclamation activities proposed in the future, comply with Attachment G – Water Reclamation Requirements and Provisions of this Order.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Quality Control Board (Regional Water Board) adopted a *Water Quality Control Plan for the North Coast Region* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the

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plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plan, at page 2-18.00, establishes beneficial uses for groundwater as municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and freshwater supply. Thus, beneficial uses applicable to Basalt Pond and groundwater are as follows:

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Basalt Pond, part of the Russian River within the Geyserville Hydrologic Subarea of the Russian River Hydrologic Unit Note: The beneficial uses listed here are for the Russian River due to the hydrologic connection between Basalt Pond and the Russian River	<u>Existing:</u> • Municipal and Domestic Supply (MUN) • Agricultural Supply (AGR) • Industrial Service Supply (IND) • Ground Water Recharge (GWR) • Freshwater Replenishment (FRSH) • Navigation (NAV) • Water Contact Recreation (REC-1) • Non-Contact Water Recreation (REC-2) • Commercial and Sport Fishing (COMM) • Warm Freshwater Habitat (WARM) • Cold Freshwater Habitat (COLD) • Wildlife Habitat (WILD) • Preservation of Rare, Threatened, or Endangered Species (RARE) • Migration of Aquatic Organisms (MIGR) • Spawning, Reproduction, and/or Early Development (SPWN) <u>Potential:</u> •Industrial Process Supply (PRO) •Hydropower Generation (POW) •Shellfish Harvesting (SHELL) •Aquaculture (AQUA)
001, 002, and 003	Groundwater	<u>Existing</u> •Municipal and Domestic Supply (MUN) •Industrial Service Supply (IND) •Industrial Process Supply (PRO) •Agricultural Supply (AGR)

Requirements of this Order implement the Basin Plan.

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,

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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 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.

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 chronic toxicity control. Requirements of this Order implement the SIP.

4. **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 CFR § 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.

5. **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

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6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations[26] section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

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

Section 303(d) of the federal CWA requires states to identify waterbodies that do not meet water quality standards and are not supporting their beneficial uses after implementation of technology-based effluent limitations on point sources. Each state must submit an updated list, the 303(d) List of Impaired Waterbodies, to USEPA by April of each even numbered year. In addition to identifying the waterbodies that are not supporting beneficial uses, the 303(d) list also identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment. The USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body contaminant. TMDLs establish the maximum quantity of a given pollutant that can be added to a water body from all sources without exceeding the applicable water quality standard for that pollutant and determine wasteload allocations (the portion of a TMDL allocated to existing and future point sources) for point sources and load allocations (the portion of a TMDL attributed to existing and future nonpoint sources) for nonpoint sources.

In June 2007, the USEPA provided final approval of the 303(d) list of impaired water bodies prepared by the State. The list identifies the entire Russian River watershed as impaired by excess sediment and elevated water temperatures. Pursuant to CWA section 303(d), the Regional Water Board will adopt TMDLs to address impairing pollutants in 303(d) listed waters, and then implement TMDLs, including through provisions of NPDES permits. TMDLs establish the maximum quantity of a given pollutant that can be added to a water body from all sources without exceeding the applicable water quality standard for that pollutant and determine wasteload allocations (the portion of a TMDL allocated to existing and future point sources) for point sources and load allocations (the portion of a TMDL attributed to existing and future nonpoint sources) for nonpoint sources. The Regional Water Board expects to adopt TMDLs for sediment and temperature for the Russian River by 2019.

[26] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

Aspects of the sediment impairing the Russian River include settleable solids, suspended solids, and turbidity. The impact of settleable solids results when they collect on the bottom of a waterbody over time, making them a persistent or accumulative constituent. The impact of suspended solids and turbidity, by contrast, results from their concentration in the water column.

An analysis of the Discharger's effluent monitoring data since the upgrade to advanced wastewater treatment indicates levels of BOD_5, TSS, total coliform bacteria, and settleable solids in the effluent are less than the effluent limitations required by this Order. Since the upgrade, there have been no exceedances of BOD_5, TSS, or settleable solids effluent limitations. Thus, the discharge does not typically contain sediment (e.g., settleable solids, suspended solids, and turbidity) at levels which will cause, have the reasonable potential to cause, or contribute to increases in sediment levels in the Russian River.

Existing monitoring data is insufficient to determine if the temperature of the effluent discharged to Basalt Pond impacts temperatures in Basalt Pond which is physically connected to the Russian River and a water of the US. The Order establishes a special study requirement in Provision VI.C.2.d (Reference Receiving Water Study) for the purpose of determining whether temperature and other conditions (pH, dissolved oxygen, specific conductance, and total dissolved solids) in Basalt Pond are due to effluent discharges or natural conditions. Requirements of this Permit will result in improvements with regard to potential temperature impacts in that there will be a reduction in the amount of treated effluent discharged to Basalt Pond/Russian River and the discharge will be limited to the period of October 1 through May 14 each year upon completion of the Discharger's reclamation system.

E. Other Plans, Polices and Regulations

1. On May 2, 2006, the State Water Board adopted State Water Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems and on February 20, 2008 adopted Order No. WQ 2008-0002-EXEC Adopting Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDRs. The deadline for dischargers to apply for coverage was November 2, 2006. The Discharger applied for coverage and is subject to the requirements of Order Nos. 2006-0003-DWQ and WQ 2008-0002 and any future revisions thereto for operation of its wastewater collection system.

2. All areas within the treatment facility, which encompasses approximately 2.5 acres, drain to the storm drain percolation pond, located just west of the

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headworks. If the percolation pond is unable to accommodate the runoff in a severe storm event, the storm drain pump station, which is controlled by a level switch, automatically pumps the drainage to Pond 2 in the old treatment facility, where it either evaporates or is pumped back to the treatment plant headworks. The State Water Board Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities, does not require facilities to obtain coverage if storm water is captured and treated and/or disposed of within the facility's NPDES permitted process wastewater or if storm water is disposed of to evaporation ponds, percolation ponds, or combined sewer systems. Therefore, coverage under the General Storm Water Permit is not required for this Facility.

3. On July 22, 2004, the State Water Board adopted State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities. The Order requires the Discharger to obtain coverage under Order No. 2004-0012-DWQ prior to discharging biosolids from the Facility to land.

4. On February 3, 2009, the State Water Board adopted the Recycled Water Policy (State Water Board Resolution No. 2009-0011) for the purpose of increasing the use of recycled water from municipal wastewater sources in a manner that implements state and federal water quality laws. The Recycled Water Policy became effective on May 14, 2009. The Recycled Water Policy provides direction to the regional water boards regarding the appropriate criteria to be used in issuing permits for recycled water projects and describes permitting criteria intended to streamline, and provide consistency for, the permitting of the vast majority of recycled water projects. Pertinent provisions and requirements of the policy have been incorporated into this Order to address conditions specific to the Discharger's plan to implement water recycling.

The Recycled Water Policy recognizes the fact that some groundwater basins in the state contain salts and nutrients that exceed or threaten to exceed water quality objectives in the applicable Basin Plans, and that not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the water quality objectives for salt or nutrients. The

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Recycled Water Policy further recognizes that these conditions can be caused by natural soils/conditions, discharges of waste, irrigation using surface water, groundwater or recycled water, and water supply augmentation using surface or recycled water, and that regulation of recycled water alone will not address these conditions. It is the intent of the Recycled Water Policy that salts and nutrients from all sources be managed on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses. The Recycled Water Policy finds that the appropriate way to address salt and nutrient issues is through the development of regional or subregional salt and nutrient management plans rather than through imposing requirements solely on individual recycled water projects.

This Order is consistent with the requirements of the Recycled Water Policy. Specifically, Water Reclamation Requirement B.26 of Attachment G requires the Discharger to comply with any salt and nutrient management plan that is developed in the future, consistent with Paragraphs 6 and 7(a), respectively, of the Recycled Water Policy; Finding 3 of Attachment G describes the North Coast Regional Water Board's consistency with the streamlined permitting criteria outlined in Paragraphs 7(b) and 7(c) of the Recycled Water Policy; and Provision IV.D.2 of this Order describes consistency with the antidegradation criteria outlined in Paragraph 9 of the Recycled Water Policy. This Order allows for increased use of recycled

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water consistent with the mandate established in the Recycled Water Policy to increase the use of recycled water in California.

IV. 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 (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

1. **Discharge Prohibition III.A.** The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.

   This prohibition is based on the Basin Plan, the previous permit, and State Water Board Order WQO No. 2002-0012 regarding the petition of WDRs Order No. 01-072 for the East Bay Municipal Utility District and Bay Area Clean Water Agencies. In State Water Board Order No. WQO 2002-0012, the State Water Board found that this prohibition is acceptable in orders, but should be interpreted to apply only to constituents that are either not disclosed by the Discharger, or are not reasonably anticipated to be present in the discharge but have not been disclosed by the Discharger. It specifically does not apply to constituents in the discharge that do not have "reasonable potential" to exceed water quality objectives.

   The State Water Board has stated that the only pollutants not covered by this prohibition are those which were "*disclosed to the Ordering and … can be reasonably contemplated*." [In re the Petition of East Bay Municipal Utilities District et al., (State Water Board, 2002) Order No. WQO 2002-0012, p. 24] In that Order, the State Water Board cited a case which held the Discharger is liable for the discharge of pollutants "*not within the reasonable contemplation of the permitting authority <u>….whether spills or otherwise</u>…*" [*Piney Run Preservation Assn. v. County Commissioners of Carroll County, Maryland* (4th Cir. 2001) 268 F. 3d 255, 268.] Thus the

State Water Board authority provides that, to be permissible, the constituent discharged (1) must have been disclosed by the Discharger or (2) can be reasonably contemplated by the Regional Water Board.

Whether or not the Discharger reasonably contemplates the discharge of a constituent is not relevant. What matters is whether the Discharger disclosed the constituent to the Regional Water Board or whether the presence of the pollutant in the discharge can otherwise be reasonably contemplated by the Regional Water Board at the time of Order adoption.

2. **Discharge Prohibition III.B.** Creation of pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code is prohibited.

   This prohibition is based on section 13050 of the Water Code, and has been retained from Order No. R1-2005-0084.

3. **Discharge Prohibition III.C.** The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c. (Solids Disposal and Handling Requirements, section VI.C.5.c of the Order.)

   This prohibition is based on restrictions on the disposal of sewage sludge found in federal regulations [40 CFR Part 503 (Biosolids), Part 527 and Part 258] and title 27 of the CCR. It has been retained from the previous Order.

4. **Discharge Prohibition III.D.** The discharge or reclamation use of untreated or partially treated waste from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provisions (Bypass).

   This prohibition has been retained from the previous Order and is based on the Basin Plan to protect beneficial uses of the receiving water from unpermitted discharges, and the intent of the Water Code sections 13260 through 13264 relating to the discharge of waste to waters of the State without filing for and being issued an Order. This prohibition applies to spills not related to SSOs and other unauthorized discharges of wastewater within the collection, treatment, and disposal facilities. The discharge of untreated or partially treated wastewater from the collection, treatment, or disposal facility represents an unauthorized bypass pursuant to 40 CFR 122.41(m) or an unauthorized discharge which poses a threat to human health and/or aquatic life, and therefore is explicitly prohibited by this Order.

5. **Discharge Prohibition III.E.** Any SSO that results in a discharge of untreated or partially treated wastewater to (a) waters of the State, (b)

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groundwater, or (c) land that creates pollution, contamination, or nuisance, as defined in Water Code section 13050(m) is prohibited.

This prohibition applies to spills related to SSOs and is based on State standards, including section 13050 of the Water Code and the Basin Plan. This prohibition is consistent with the State's antidegradation policy as specified in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Water in California) in that the prohibition imposes conditions to prevent impacts to water quality, the degradation of water quality, negative effects on receiving water beneficial uses, and lessening of water quality beyond that prescribed in State Water Board or Regional Water Board plans and policies.

This prohibition is stricter than the prohibitions stated in State Water Board Order 2006-003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ prohibits SSOs that result in the discharge of untreated or partially treated wastewater to waters of the United States and SSOs that cause a nuisance, compared to Prohibition III.E of this Order, which prohibits SSO discharges that create nuisance or pollution to waters of the State, groundwater, and land for a more complete protection of human health. The rationale for this prohibition is because of the prevalence of high groundwater in the North Coast Region, and this Region's reliance on groundwater as a drinking water source.

6. **Discharge Prohibition III.F.** The discharge of waste to land that is not owned or under agreement to use by the Discharger is prohibited, except for use for fire suppression as provided in title 22, sections 60307 (a) and (b) of the CCR.

   This prohibition is retained from Order No. R1-2005-0084. Land used for the application of wastewater must be owned by the Discharger or be under the control of the Discharger by contract so that the Discharger maintains a means for ultimate disposal of treated wastewater.

7. **Discharge Prohibition III.G.** The discharge of waste at any point not described in Finding II.B or authorized by a permit issued by the State Water Board or another Regional Water Board is prohibited.

   This prohibition is a general prohibition that allows the Discharger to discharge waste only in accordance with WDRs. It is based on sections 301 and 402 of the federal CWA and section 13263 of the Water Code.

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8. **Discharge Prohibition III.H.** The mean daily dry weather flow of waste in excess of 1.4 mgd measured over a period of 30 consecutive days is prohibited.

   This prohibition is retained from the previous permit and is based on the dry weather discharge treatment capacity of the Facility.

9. **Discharge Prohibition III.I.** The peak daily wet-weather influent flow through the treatment system in excess of 4.0 mgd is prohibited.

   This prohibition is new and is based on the current daily peak sustained wet-weather capacity of the treatment system of 4.0 mgd. Exceedance of this capacity on a daily basis may result in effluent violations and/or the need to by-pass untreated effluent blended with treated effluent, which is prohibited.

10. **Discharge Prohibition III.J.** The discharge of wastewater effluent from the WWTF to the Russian River or its tributaries is prohibited during the period of May 15 through September 30 of each year.

    This prohibition is retained from the previous permit, and is required by the Basin Plan. The Basin Plan prohibits discharges to the Russian River and its tributaries during the period of May 15 through September 30 (Chapter 4, North Coastal Basin Discharge Prohibition No. 3). The original intent of this prohibition was to prevent the contribution of wastewater to the baseline flow of the Russian River during the period of the year when the Russian River and its tributaries experience the heaviest water-contact recreation use.

11. **Discharge Prohibition III.K.** During the period from October 1 through May 14, discharges of treated wastewater to Basalt Pond, part of the Russian River, shall not exceed one percent of the flow of the Russian River, as measured by the sum of flows at United States Geological Survey (USGS) Gauge No. 11-4640.00 in the Russian River near Healdsburg and at USGS Gauge No. 11-4653.50 in Dry Creek near its mouth.

    This prohibition is required by the Basin Plan (Chapter 4, North Coastal Basin Discharge Prohibition No. 4). The Basin Plan prohibits discharges to the Russian River and its tributaries when the waste discharge flow is greater than one percent of the receiving water's flow. The previous order contained a prohibition that limited discharges of wastewater to one percent of the flow of Basalt Pond and a compliance schedule for the Discharger to demonstrate compliance with this waste discharge rate limitation. In addition, Cease and Desist Order No. R1-2006-0002, adopted by the Regional Water Board on January 25, 2006, included a compliance schedule for the Discharger to submit a plan and schedule to comply with the waste discharge rate limitation

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in Prohibition A.7 of Order No. R1-2005-0084. The Discharger submitted a letter dated March 13, 2007 to the Regional Water Board proposing that compliance with this prohibition be measured as the sum of flows at USGS Gauge No. 11-4640.00 in the Russian River near Healdsburg and at USGS Gauge No. 11-4653.50 in Dry Creek near its mouth. These stations measure total flows just above the confluence of Dry Creek and the Russian River and there are no significant diversions or other activities between these points and the discharge to Basalt Pond that would significantly affect the measured flows. The Regional Water Board concurs with the Discharger's proposed method of determining compliance with this discharge prohibition. The Basin Plan one percent discharge limitation is based on the flow of the receiving water and Basalt Pond does not have a flow. Due to the physical connection between Basalt Pond and the Russian River, it is appropriate to use the flow of the Russian River for assessing compliance with the one percent discharge limitation.

Basin Plan Prohibition No. 4 does not specify how compliance with the one-percent flow requirement should be determined. This prohibition, set forth in Provision III.K of this Order, specifies that the discharge may comply with the one percent requirement as a monthly average for the surface water discharge season, provided the Discharger makes a reasonable effort to adjust the discharge of treated wastewater to one percent of the most recent daily flow measurement of the Russian River, as represented by the sum of flows at USGS Gauge No. 11-4640.00 in the Russian River near Healdsburg and at USGS Gauge No. 11-4653.50 in Dry Creek near its mouth. This modification provides day-to-day operational flexibility for the Discharger while retaining the intent of the prohibition.

The Discharger's March 13, 2007 letter indicated that the Dry Creek gauge is not rated for flows greater than 200 cfs because it is in backwater from the Russian River at these flows. The Discharger proposed using a flow of 200 cfs in the compliance calculation because the Discharger would be able to achieve compliance with the discharge rate prohibition at levels above 200 cfs. Therefore, this Order allows the Discharger to use a flow of 200 cfs in Dry Creek in the calculation of the sum of flows in the Russian River when flows in Dry Creek exceed 200 cfs to determine compliance with this prohibition.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations, require that

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permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at Part 133 and Best Professional Judgment (BPJ) in accordance with Part 125, section 125.3

Regulations promulgated in section 125.3(a)(1) require technology-based effluent limitations for municipal Dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD_5, TSS, and pH, as follows:

a. **BOD_5 and TSS**

   i. The 30-day average shall not exceed 30 mg/L.

   ii. The 7-day average shall not exceed 45 mg/L.

   iii. The 30-day average percent removal shall not be less than 85%.

b. **pH**

   The pH shall be maintained within the limits of 6.0 to 9.0.

   In addition, section 122.45(f) requires the establishment of mass-based effluent limitations for all pollutants limited in Orders, except for 1) pH, temperature, radiation, or other pollutants which cannot be appropriately expressed by mass, and 2) when applicable standards and limitations are expressed in terms of other units of measure.

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2. **Applicable Technology-Based Effluent Limitations**

The effluent limitations in this Order for BOD_5, TSS, and pH not only meet the technology-based requirements for secondary treatment set forth in section 133.102, but they also are required to meet the water quality based requirements set forth in the Basin Plan.

In addition to the minimum, federal technology-based requirements, the Basin Plan requires that discharges of municipal waste "*shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 MPN/100 mL*" for discharges to the Russian River and its tributaries during October 1 through May 14. This requirement leaves discretion to the Regional Water Board to define advanced wastewater treatment by the implementation of effluent limitations in individual permits.

a. **BOD_5 and TSS.** For the purpose of applying advanced wastewater treatment requirements on the discharge to the Russian River, effluent limitations for BOD_5 and TSS are established at 10 mg/L as a monthly average and 15 mg/L as a weekly average, which are technically achievable based on the capability of a tertiary treatment system. In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. These effluent limitations are all retained from Order No. R1-2005-0084.

b. **Mass-Based Effluent Limitations.** Mass effluent limitations for BOD_5 and TSS are required pursuant to 40 CFR 122.45(f) for the purpose of assuring that dilution is not used as a method of achieving the concentration limitations in the permit. Mass-based effluent limitations are technology-based; and for this permit are based on the Facility's design dry-weather capacity of 1.4 mgd. During wet-weather periods when the flow rate into the Facility exceeds 1.4 mgd, the mass effluent limitations may be calculated based on the actual daily average flow rate, not to exceed a maximum sustained peak flow of 4.0 mgd. Order No. R1-2005-0085 allowed for mass limits to be calculated using a maximum sustained peak flow of 6.5 mgd, based on the design wet-weather treatment capacity of the Facility. Since the completion of Facility upgrades, the peak wet-weather treatment capacity is 4.0 mgd. Therefore, this Order revises the mass limit calculations for periods of wet-weather to reflect that actual design wet-weather treatment capacity of the Facility.

c. **Coliform Bacteria.** Even though effluent limits for coliform bacteria are not set out in the federal regulations for secondary treatment, they are

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included here in the section on technology-based effluent limits because they reflect technology standards for tertiary treatment. Coliform bacteria are a pollutant of concern in all wastewaters of domestic origin, and therefore, the Order retains the effluent limitations for total coliform bacteria from Order No. R1-2005-0084. These effluent limitations reflect standards for tertiary treated recycled water adopted by CDPH in title 22 of the CCR. Recycled water from this facility meets the highest title 22 treatment and disinfection standards and is suitable for the broad range of recycled water uses identified in title 22, including urban land uses.

d. **pH.** The technology-based effluent limitation for pH of 6.0 to 9.0 is based on the Federal technology-based requirements prescribed in 40 CFR 133 and is applicable to effluent utilized for reclamation.

This Order establishes the following technology-based effluent limitations applicable to Discharge Point 001.

Summary of Technology-based Effluent Limitations
Discharge Point 001

Table F-6. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--
	lbs/day[27] (dry-weather)	117	175	--	--	--
	lbs/day[28] (wet-weather)	334	500	--	--	--
	% Removal	85	--	--	--	--
Total Suspended Solids	mg/L	10	15	--	--	--
	lbs/day[27] (dry-weather)	117	175	--	--	--
	lbs/day[28] (wet-weather)	334	500	--	--	--
	% Removal	85	--	--	--	--

[27] Mass-based limitations are based on the dry weather design flow of the Facility of 1.4 mgd.
[28] During wet weather periods, when the influent flow rate exceeds the dry weather design flow, mass emission limitations shall be calculated using the concentration-based effluent limitations and the actual daily average influent flow rate (not to exceed a maximum sustained peak flow rate of 4.0 mgd).

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Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Coliform Bacteria	MPN/100 mL	--	2.2[29]	23/240[30]	--	--
pH	standard units	--	--	--	6.0	9.0

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. This Order contains requirements, expressed as technology equivalence requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of advanced wastewater treatment, is discussed in section IV.B.2 of the Fact Sheet. In addition, this Order contains additional requirements to meet applicable water quality standards. The rationale for these requirements is discussed in section IV.C.3 of 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. A reasonable potential analysis (RPA) demonstrated reasonable potential for discharges from the Facility to cause or contribute to exceedances of copper. Additional information is needed to determine whether or not there is reasonable potential for ammonia (see special study requirement in Provision VI.C.2.b of the Order and section VII.B.2.b of the Fact Sheet).

Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

[29] Expressed as a 7-day median.
[30] The number of coliform bacteria must not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

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**

   a. **Beneficial Uses.** Beneficial use designations for receiving waters for discharges from the Facility are presented in Finding II.H of the Order and section III.C.1 of this Fact Sheet.

   b. **Basin Plan Water Quality Objectives.** In addition to the specific water quality objectives indicated above, the Basin Plan contains narrative objectives for color, tastes and odors, floating material, suspended material, settleable material, oil and grease, biostimulatory substances, sediment, turbidity, pH, dissolved oxygen, bacteria, temperature, toxicity, pesticides, chemical constituents, and radioactivity that apply to inland surface waters, enclosed bays, and estuaries, and includes the Russian River and its tributaries. For waters designated for use as domestic or municipal supply (MUN), the Basin Plan establishes as applicable water quality criteria the Maximum Contaminant Levels (MCLs) established by CDPH for the protection of public water supplies at title 22 of the CCR section 64431 (Inorganic Chemicals) and section 64444 (Organic Chemicals).

   c. **SIP, CTR and NTR.** Water quality criteria and objectives applicable to this receiving water are established by the California Toxics Rule (CTR), established by the UPEPA at 40 CFR 131.38; and the National Toxics Rule (NTR), established by the USEPA at 40 CFR 131.36. Criteria for most of the 126 priority pollutants are contained within the CTR and the NTR.

   d. Aquatic life freshwater and saltwater criteria are identified as criterion maximum concentrations (CMC) and criterion continuous concentrations (CCC). The CTR defines the CMC as the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects and the CCC as the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. The CMC is used to calculate an acute or 1-hour average numeric effluent limitation and the CCC is used to calculate a chronic or 4-day average numeric effluent limitation. Aquatic life freshwater criteria were used for the RPA, and for the calculation of effluent limitations for copper.

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Human health criteria are further identified as “water and organisms” and “organisms only.” “Water and organism” criteria are designed to address risks to human health from multiple exposure pathways. The criteria from the “water and organisms” column of CTR were used for the RPA because the Basin Plan identifies that the receiving water, Basalt Pond, has the beneficial use designation of municipal and domestic supply. Effluent limitations were not necessary for any constituents based on criteria for the protection of human health.

The SIP, which is described in Finding II.J of the Order and section III.C.3 of the Fact Sheet, includes procedures for determining the need for, and the calculation of WQBELs and requires dischargers to submit data sufficient to do so.

At title 22, Division 4, Chapter 15 of the CCR, CDPH has established Maximum Contaminant Levels (MCLs) for certain pollutants for the protection of drinking water. Chapter 3 of the Basin Plan establishes these MCLs as water quality objectives applicable to receiving waters with the beneficial use designation of municipal and domestic supply.

Attachment F-1 includes a summary of RPA results for all priority toxic pollutants, with water quality criteria/objectives that are applicable to Basalt Pond and ammonia, nitrate, and phosphorus.

3. **Determining the Need for WQBELs**

NPDES regulations at 40 CFR 122.44 (d) require effluent limitations to control all pollutants which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard.

a. **Non-Priority Pollutants**

i. **pH.** The effluent limitation for pH of 6.5 to 8.5 is retained from Order No. R1-2005-0084 and applies to discharges to Basalt Pond. This water quality-based effluent limitation is more restrictive than the technology-based limitation. This limitation is based on the water quality objective for all surface waters of the North Coast Region established in Chapter 3 of the Basin Plan. Federal technology-based requirements prescribed in 40 CFR 133 are not sufficient to meet these Basin Plan water quality standards.

ii. **Chlorine Residual.** The Basin Plan establishes a narrative water quality objective for toxicity which states “[a]*ll waters shall be*

maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." The Regional Water Board considers any chlorinated discharge as having the reasonable potential to cause or contribute to exceedances of this water quality objective for toxicity. The Discharger previously used chlorine for disinfection of the effluent. Due to the use of chlorine in the treatment system, Order No. R1-2005-0084 contained effluent limitations for chlorine residual based on the USEPA criteria for chlorine-produced oxidants for protection of aquatic life from the Quality Criteria for Water 1986 (the Gold Book, EPA 440/5-86-001).

The Discharger replaced the chlorine disinfection system with a UV disinfection system, which came on-line in May 2008. Although the Discharger has discontinued the use of chlorine for disinfection, the Discharger continues to use sodium hypochlorite for maintenance cleaning of the membrane tanks and clean-in-place procedures for the filter membranes. The Discharger submitted a description of the maintenance cleaning and clean-in-place cycles, as well as Standard Operating Procedures (SOPs) for the clean-in-place procedure on July 9, 2009.

Maintenance clean cycles occur after every 7 days of run time for each of the five membrane tanks. During two segments of the maintenance clean cycle, filtrate with a sodium hypochlorite dose of 300 parts per million (ppm) is pumped back through the interior of the membrane fibers to the mixed liquor in the membrane tank. During all portions of the maintenance clean cycle, the membranes tank is isolated from the filtrate discharge to the UV disinfection chamber, and the tank is continuously fed with mixed liquor at a rate of approximately 3,000 gallons per minute (gpm), flushing the 10,000 gallon tank volume continuously during the 1-hour maintenance clean cycle. The low-pressure air scour feed also continues through the entire cycle. To ensure that all chlorinated water is flushed out of the filtrate piping loop at the end of the maintenance clean cycle, the pump filters water from the tank and recirculates it back to the membrane tank for a period of 40 minutes at a flow rate of 450 gpm, all while the mixed liquor and air scour continue. The recirculated water is carried out of the tank with the mixed liquor overflow and flows back to the head of the biological process, where it comes in contact with the incoming raw wastewater. Between the contact with the mixed liquor flow and continuous air scour, any remaining chlorine residual is eliminated well before the 40 minute recirculation process ends. This has been confirmed by

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collection of residual samples from the recirculation lines before the membrane tank was placed back into filtration mode.

The clean-in-place cycle occurs every 3 months in each of the five membrane tanks and uses a stronger sodium hypochlorite solution. During the clean-in-place cycle, the membrane tank is filled with filtrate and then dosed with sodium hypochlorite to achieve a concentration of 1,500 ppm. The membranes are soaked for a minimum of 3 hours, and the sodium hypochlorite solution is recirculated through the membranes and back into the tank. When the cycle is complete, the contents of the membrane tank are drained to the central drain pump station, which normally pumps all process drainage back to the headworks. However, following a clean-in-place cycle, the sodium hypochlorite solution is directed to the influent equalization basin using diversion valves and piping at the headworks, where chlorine residual dissipates before the drainage from the clean-in-place cycle is pumped back to the headworks. The Discharger has developed SOPs for the manual operator steps required to divert the cleaning solution.

Based on the discontinuation of chlorine disinfection at the Facility and the implementation of SOPs at the Facility to prevent the discharge of chlorine, the Regional Water Board concludes that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives for chlorine. Therefore, effluent limitations have not been retained from Order No. R1-2005-0084. As described in section VII.B.4.b of this Fact Sheet, this Order requires the Discharger to update and maintain SOPs for the use of chlorine, notify the Regional Water Board of any changes in chlorine usage or SOPs, and notify the Regional Water Board if a chlorine spill occurs.

iii. **Ammonia and Nitrate.** Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrate. Denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Wastewater treatment facilities commonly use nitrification to remove ammonia from the waste stream and denitrification to remove nitrate from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving water and inadequate or incomplete denitrification may result in the discharge of nitrate to the receiving water. The Facility was designed and constructed with Biological Nutrient Removal, and consistently achieves effluent nitrate concentrations less than 5.0 mg/L and ammonia concentrations of less than 1.0 mg/L.

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(a) **Nitrate.** Nitrate is known to cause adverse health effects in humans. For waters designated as domestic or municipal supply, the Basin Plan (Chapter 3) adopts the MCLs, established by CDPH for the protection of public water supplies at title 22 of the CCR, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals), as applicable water quality criteria. The MCL for nitrate (10 mg/L N) is therefore applicable as a water quality criterion for Basalt Pond. The Discharger sampled its discharge to Basalt Pond five times between December 2008 and April 2009. Monitoring results showed a concentration range between 2.7 and 4.8 mg/L and an average nitrate concentration of 3.5 mg/L N. Because monitoring data indicates that nitrate concentrations in the effluent are below the MCL, the Regional Water Board concludes that discharges from the Facility do not have a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for the receiving water. Therefore, effluent limitations for nitrate have not been established. However, monitoring for nitrate has been established in this Order to ensure adequate denitrification and because nitrogen-containing compounds are a common component of domestic wastewaters that can have a directly toxic (e.g., unionized ammonia) or a detrimental biostimulatory effect on receiving waters. The Regional Water Board is including such monitoring requirements in the discharge permits of most POTWs in the North Coast Region.

(b) **Ammonia.** Ammonia is known to cause toxicity to aquatic organisms in surface waters. The Basin Plan establishes a narrative water quality objective for toxicity, stating that "[a]*ll waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" Discharges of toxic concentrations of ammonia would violate the Basin Plan narrative toxicity objective. Due to concerns regarding ammonia toxicity, the Regional Water Board relies on USEPA's recommended water quality criteria for ammonia in fresh water from the 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014 (1999) to interpret the Basin Plan's narrative objective for toxicity. USEPA has recommended acute and chronic water quality criteria for the protection of aquatic life, which are dependent on receiving water pH and the presence/absence of salmonids (acute criteria), and pH, temperature, and the presence/absence of early life stages of fish (chronic criteria). EPA found that as pH increased, both the acute

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and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature.

The Discharger monitored the effluent discharge to Basalt Pond for ammonia 33 times between August 2008 and April 2009. The monitoring data shows a range of ammonia concentrations between <0.2 and 0.8 mg/L and an average total ammonia concentration of 0.20 mg/L N. The maximum concentration of 0.8 mg/L N occurred on April 15, 2009. Effluent and receiving water were also monitored for pH and temperature during that same time period. Effluent pH ranged from 6.74 to 7.6 and temperature ranged from 16.5 to 26.7°C while receiving water pH ranged from 7.4 to 9.14 and temperature ranged from 11.1 to 32.8 °C. Additional monitoring data is needed to determine if the discharge from this Facility poses reasonable potential to cause or contribute to exceedances of applicable water quality objectives for ammonia in the receiving water (Basalt Pond).

iv. **Phosphorus.** The Basin Plan contains a narrative water quality objective for biostimulatory substances that states "[w]*aters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses*." The Regional Water Board is increasingly concerned about the biostimulatory properties of discharges to surface waters in the North Coast Region. Nutrients, such as phosphorus and nitrogen containing compounds, in treated wastewater stimulate biological growth, thereby depleting dissolved oxygen and advancing eutrophication of receiving waters. At present, for interpretation of the Basin Plan's narrative water quality objective for biostimulatory substances, USEPA has established recommended water quality criteria for nutrients in Nutrient Criteria Documents for Lakes and Rivers and Nutrient Criteria Documents for Rivers and Streams. USEPA has defined 14 "ecoregions" and further categorized surface waters as lakes and reservoirs or rivers and streams for purposes of defining applicable numeric water quality criteria for nutrients. The State and Regional Water Boards continue to examine other methods of interpreting the Basin Plan's narrative water quality objective for biostimulatory substances. When the Boards determine that USEPA's recommended criteria are appropriate for implementing the Basin Plan objectives, or when a more appropriate and meaningful

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method is established, the need for limiting nutrients in relation to biostimulatory properties, including phosphorus and nitrogen-containing compounds, in all discharges in the Region will be reassessed. In the meantime, the reasonable potential analysis for nutrients in relation to biostimulatory properties, performed for development of this Order, is inconclusive. The Order establishes monitoring requirements for phosphorus and nitrogen containing compounds in discharges from the WWTF to allow a determination of "reasonable potential" at such time as the State and Regional Water Boards select an appropriate method for interpretation of the Basin Plan's narrative objective.

b. **Priority Pollutants**

The SIP establishes procedures to implement water quality criteria from the NTR and CTR and for priority, toxic pollutant objectives established in the Basin Plan. The implementation procedures of the SIP include methods to determine reasonable potential (for pollutants to cause or contribute to excursions above State water quality standards) and to establish numeric effluent limitations, if necessary, for those pollutants showing reasonable potential.

Section 1.3 of the SIP requires the Regional Water Board to use all available, valid, relevant, and representative receiving water and effluent data and information to conduct an RPA. For this RPA, the Regional Water Board has used effluent and receiving water monitoring data generated from a single sample collected on October 29, 2008 for most of the CTR pollutants. Additional data collected during the term of the previous permit from May 2008 through April 2009 for copper, which is representative of Facility performance since the upgrade to advanced wastewater treatment, was also used in conducting the RPA.

Some freshwater water quality criteria are hardness-dependent; i.e., as hardness decreases, the toxicity of certain metals increases, and the applicable water quality criteria become correspondingly more stringent. Due to the fact that the discharge is to a pond, Regional Water Board staff determined that the lowest hardness of the effluent and receiving water should be used for determining reasonable potential. The data set was limited to data collected from May 2008 through April 2009 to reflect the water quality of the upgraded wastewater treatment facility. During that time period, effluent hardness was sampled a total of 13 times. The effluent hardness ranged from 86 to 187 mg/L, with an average concentration of 147 mg/L. During the same time period, receiving water hardness was sampled a total of 13 times. The receiving water hardness

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ranged from 117 to 284 mg/L, with an average concentration of 152 mg/L. The lowest observed hardness concentration in Basalt Pond of 86 mg/L was selected for determining whether reasonable potential exists for the hardness-based metals.

To conduct the RPA, Regional Water Board staff identified the maximum effluent concentration (MEC) and maximum background (B) concentration for each priority, toxic pollutant from effluent and receiving water data provided by the Discharger, and compared this information to the most stringent applicable water quality criterion (C) for each pollutant with applicable water quality criteria from the NTR, CTR, and the Basin Plan. Section 1.3 of the SIP establishes three triggers for a finding of reasonable potential.

Trigger 1. If the MEC is greater than C, there is reasonable potential, and an effluent limitation is required.

Trigger 2. If B is greater than C, and the pollutant is detected in effluent (MEC > ND), there is reasonable potential, and an effluent limitation is required.

Trigger 3. After a review of other available and relevant information, a permit writer may decide that a WQBEL is required. Such additional information may include, but is not limited to: the facility type, the discharge type, solids loading analyses, lack of dilution, history of compliance problems, potential toxic impact of the discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303 (d) listing for the pollutant, and the presence of endangered or threatened species or their critical habitat.

c. **Reasonable Potential Determination**

The RPA demonstrated reasonable potential for discharges from the Facility to cause or contribute to exceedances of applicable water quality criteria for copper. Reasonable potential could not be determined for all pollutants, as there are not applicable water quality criteria for all pollutants. The RPA determined that there is either no reasonable potential or there was insufficient information to conclude affirmative reasonable potential for the remainder of the 126 priority pollutants.

The following table summarizes the reasonable potential analysis for each priority pollutant that was reported in detectable concentrations in the effluent or the receiving water (detected values are indicated in bold type). The MECs, most stringent water quality objectives/water quality criteria

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(WQO/WQCs), and background concentrations (B) used in the RPA are presented, along with the RPA results (Yes or No and which trigger) for each toxic pollutant analyzed. No other pollutants with applicable, numeric water quality criteria from the NTR, CTR, and the Basin Plan were measured above detectable concentrations during the monitoring events conducted by the Discharger. Attachment F-1 to this Order summarizes the RPA for all 126 priority pollutants.

Table F-7. Summary of RPA Results

CTR #	Priority Pollutants	C or Most Stringent WQO/WQC (µg/L)	MEC or Minimum DL (µg/L)[31]	B or Minimum DL (µg/L)[31]	RPA Results[32]
2	Arsenic	50	**0.78**	**5**	No
6	Copper	8.2	**11**	**2.8**	Yes (Trigger 1)
7	Lead	2.6	**1.3**	**0.8**	No
9	Nickel	46	<2	**6.9**	No
12	Thallium	1.7	**0.5**	<0.3	No
13	Zinc	105	**78**	**6.7**	No
26	Chloroform	--	**0.68**	<0.41	Ud
--	Nitrate (as N)	10,000	**4,800**	--	No
--	Phosphorus	--	**5,400**		Ud

4. **WQBEL Calculations**

Final WQBELs for copper have been determined using the methods described in Section 1.4 of the SIP.

<u>Copper</u>

Step 1: To calculate the effluent limits, an effluent concentration allowance (ECA) is calculated for each pollutant found to have reasonable potential using the following equation, which takes into account dilution and background concentrations:

ECA = C + D (C – B), where

[31] The Maximum Effluent Concentration (MEC) or maximum background concentration (B) is the actual detected concentration unless it is preceded by "<", in which case the value shown is the minimum detection level as the analytical result was reported as not detected (ND).

[32] RPA Results:
= Yes, if MEC > WQO/WQC, or B > WQO/WQC and MEC is detected;
= No, if MEC and B are < WQO/WQC or all effluent data are undetected;
= Undetermined (Ud), if no criteria have been promulgated.

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C = the applicable water quality criterion (adjusted for receiving water hardness and expressed as the total recoverable metal, if necessary)

D = the dilution credit (here D= 0, as the discharge does not qualify for a dilution credit)

B = the background concentration

Because no credit for dilution is being allowed, D=0, and the ECA is equal to the applicable criterion (ECA = C).

Step 2: For each ECA based on an aquatic life criterion/objective, the long term average discharge condition (LTA) is determined by multiplying the ECA by a factor (multiplier), which adjusts the ECA to account for effluent variability. The multiplier depends on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the values of the CV. CV values were calculated for copper and determined to be 0.44. Derivation of the multipliers is presented in Section 1.4 of the SIP.

From Table 1 of the SIP, the ECA multipliers for calculating LTAs at the 99th percentile occurrence probability are 0.41 (acute multiplier) and 0.62 (chronic multiplier). The LTAs are determined as follows in Table F-6.

Table F-8. Determination of Long Term Averages

Pollutant	ECA		ECA Multiplier		LTA (µg/L)	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Copper	12.1	8.2	0.41	0.62	5.02	5.08

Step 3: WQBELs, including an average monthly effluent limitation (AMEL) and a maximum daily effluent limitation (MDEL), are calculated using the most limiting (lowest) LTA. The LTA is multiplied by a factor that accounts for averaging periods and exceedance frequencies of the effluent limitations, and for the AMEL, the effluent monitoring frequency. Here the CV is set equal to 0.44, and the sampling frequency is set equal to 4 (n = 4). The 99th percentile occurrence probability was used to determine the MDEL multiplier and a 95th percentile occurrence probability was used to determine the AMEL multiplier. From Table 2 of the SIP, the MDEL multiplier is 2.42, and the AMEL multiplier is 1.39. Final WQBELs for copper are determined as follows.

Table F-9. Determination of Final WQBELs Based on Aquatic Life Criteria

Pollutant	LTA (µg/L)	MDEL Multiplier	AMEL Multiplier	MDEL (µg/L)	AMEL (µg/L)

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Copper	5.02	2.42	1.39	12	7

The final effluent limits presented above for copper are based on an effluent hardness of 86 mg/L. Because receiving water hardness can vary, actual effluent limitations will be determined based on measured receiving water hardness at the time that compliance monitoring is performed. Effluent limitations at varying levels of receiving water hardness are presented in Attachment E-1 of this Order. All copper effluent limitations in Attachment E-1 have been calculated using a default water effects ratio of 1.0 and default dissolved-to-total metal translators to convert water quality objectives from dissolved to total recoverable.

A summary of WQBELs established by the Order is given in the table below. The effluent limitation for pH is based on the Basin Plan water quality objective for pH.

Summary of Water Quality-based Effluent Limitations
Discharge Point 001

Table F-10. Summary of Water Quality-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	[33]	--	[34]	--	--
pH	standard units	--	--	--	6.5	8.5

5. **Whole Effluent Toxicity (WET)**

Effluent limitations for whole effluent, acute and chronic toxicity protect the receiving water from the aggregate effect of a mixture of pollutants that may be present in effluent. There are two types of WET tests – acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic test is conducted over a longer period of time and may measure mortality, reproduction, and/or growth.

WET requirements are derived from the CWA and the Basin Plan. The Basin Plan establishes a narrative water quality objective for toxicity that states "*All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, or aquatic life*." Detrimental responses may include, but are not limited to,

[33] Effluent limitations for copper are hardness-dependent. See Attachment E-1 for the full table of hardness-dependent copper effluent limitations, which are to be determined based on the hardness of the receiving water at the time the discharge is sampled.

decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct WET testing for acute and chronic toxicity, as specified in the MRP (Attachment E, section V).

a. **Acute Aquatic Toxicity**

Consistent with Order No. R1-2005-0084, this Order includes an effluent limitation for acute toxicity in accordance with the Basin Plan, which requires that the average survival of test organisms in undiluted effluent for any three consecutive 96-hour bioassay tests be at least 90 percent, with no single test having less than 70 percent survival.

The Order also implements Federal guidelines (Regions 9 and 10 Guidelines for Implementing Whole Effluent Toxicity Testing Programs) by requiring dischargers to conduct acute toxicity tests on a fish species and on an invertebrate to determine the most sensitive species. According to the USEPA manual, Methods for Estimating the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA/600/4-90/-27F), the acceptable vertebrate species for the acute toxicity test are the fathead minnow, *Pimephales promelas* and the rainbow trout, *Oncorhynchus mykiss*. The acceptable invertebrate species for the acute toxicity test are the water flea, *Ceriodaphnia dubia*, *Daphnia magna*, and *D. pulex*. Since the new treatment system came online in May 2008, the Discharger performed a two-suite acute screening study. For acute toxicity, mortality was not detected in either *Ceriodaphnia dubia* or *Oncorhynchus mykiss*. To comply with the monitoring requirements of this Order and determine compliance with effluent limitations for acute toxicity, the Discharger proposed to test its effluent for acute toxicity on the rainbow trout, *Oncorhynchus mykiss*. Because the Discharger recently performed the two-suite screening study, the Discharger will not be required to repeat the study within the first year and may use *Oncorhynchus mykiss* for acute toxicity testing. However, this Order requires the Discharger to perform the two species screening study at least once during the permit term in order to assure that toxicity testing continues to be performed using the most sensitive species. The Discharger has complied with the effluent limitations for acute toxicity since the new treatment system came online, based on toxicity testing conducted on *Ceriodaphnia dubia* and *Oncorhynchus mykiss* in January and March 2009 which produced 100% survival.

b. **Chronic Aquatic Toxicity**

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The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. The SIP requires that the Discharger demonstrate the presence or absence of chronic toxicity using tests on the fathead minnow, *Pimephales promelas*, the water flea, *Ceriodaphnia dubia*, and the freshwater alga, *Selenastrum capricornutum*.

Since the new treatment system came online in May 2008, the Discharger performed a three-suite chronic toxicity screening study. Chronic toxicity was not detected in either *Ceriodaphnia dubia* or *Pimephales promelas* for both the survival and reproduction endpoints, or for *Selenastrum capricornutum* for the growth endpoint. The Discharger's chronic toxicity testing results collected since the new treatment system came online in May 2008 are summarized in the table below.

Table F-11. Chronic Toxicity Testing Summary Results

Date	Chronic Toxicity Test	Result (TUc)
January 2009	*Ceriodaphnia dubia* Survival	<1.0
January 2009	*Ceriodaphnia dubia* Reproduction	<1.0
January 2009	*Pimephales promelas* Survival	<1.0
January 2009	*Pimephales promelas* Growth	<1.0
January 2009	*Selenastrum capricornutum* Growth	<1.0
March 2009	*Ceriodaphnia dubia* Survival	<1.0
March 2009	*Ceriodaphnia dubia* Reproduction	<1.0
March 2009	*Pimephales promelas* Survival	<1.0
March 2009	*Pimephales promelas* Growth	<1.0
March 2009	*Selenastrum capricornutum* Growth	<1.0

To comply with the monitoring requirements of this Order for chronic toxicity, the Discharger proposed to test its effluent for chronic toxicity on *Oncorhynchus mykiss*. However, the SIP requires short-term chronic toxicity testing using *Pimephales promelas*, *Ceriodaphnia dubia*, or *Selenastrum capricornutum*. Therefore, this Order does not authorize this use of chronic toxicity testing using *Oncorhynchus mykiss.* Because the Discharger recently performed the two-suite screening study and toxicity was not exhibited in any of the three approved test species, the Discharger will not be required to repeat the study within the first year and may use one of the approved test species for chronic toxicity testing. However, this Order requires the Discharger to perform the three-suite screening study at least once during the permit term in order to assure that toxicity testing continues to be performed using the most sensitive species.

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Chronic toxicity effluent limitations have not been included in the Order for consistency with the SIP, which implements narrative toxicity objectives in Basin Plans and specifies use of a numeric trigger for accelerated monitoring and implementation of a Toxicity Reduction Evaluation (TRE) in the event that persistent toxicity is detected. Attachment E of this Order requires annual chronic WET monitoring for demonstration of compliance with the chronic toxicity monitoring trigger.

Section V.B.9 of the MRP defines the chronic toxicity monitoring trigger as 1 TUc and section V.C.1.g of the MRP requires TUc to be calculated as 100/NOEC for purposes of determining if the Discharger's effluent exceeds the chronic toxicity monitoring trigger. Although the federal requirements may provide for flexibility in determining how to calculate TUc for compliance purposes (e.g., 100/NOEC, 100/IC25, 100/EC25), USEPA Region IX recommends that effluent limitations and triggers be based on the no observed effect concentration (NOEC) when the permit language and chronic toxicity testing methods incorporate important safeguards that improve the reliability of the NOEC. These safeguards include the use of a dilution series (testing of a series of effluent concentrations) to verify and quantify a dose-response relationship and a requirement to evaluate specific performance criteria in order to determine the sensitivity of each chronic toxicity test. The goal is to demonstrate that each test is sensitive enough to determine whether or not the effluent is toxic or not.

The use of 100/IC25 or 100/EC25 as methods for calculating chronic toxicity are point estimates that automatically allow for a 25 percent effect before calling an effluent toxic. The Basin Plan has a narrative objective for toxicity that requires that "all waters be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." Allowance of a possible 25 percent effect would not meet the Basin Plan's narrative toxicity requirement. In addition, California has historically used the NOEC to regulate chronic toxicity for ocean discharges, thus it is fitting that the same method be used to regulate chronic toxicity in inland surface water discharges.

Because no dilution has been granted for the chronic condition, chronic toxicity testing results exceeding 1.0 chronic toxicity unit (TUc) demonstrate that the discharge is in violation of the narrative toxicity water quality objective. If accelerated sampling of the discharge demonstrates a pattern of toxicity exceeding the effluent limitation, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan to determine whether the discharge is

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contributing chronic toxicity to the receiving water. Special Provision VI.C.2.a.ii requires the Discharger to submit to the Regional Water Board and maintain a TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

Chronic WET limitations will be established if monitoring results demonstrate that discharges from the Facility are causing or contributing to chronic toxicity in the receiving water.

c. **Ammonia-related Toxicity**

The chronic toxicity test shall be conducted without modifications to water quality parameters to eliminate ammonia toxicity. Ammonia toxicity in water is due mostly to its unionized fraction which is primarily a function of the temperature and the pH of the water being tested. As the pH and temperature increase so does the toxicity of a given concentration of ammonia. In static WET tests, the pH in the test concentrations often increases (drifts) due to the loss of carbon dioxide (CO_2) from the test concentrations as the test chambers are incubated over the test period. This upward drift results in pH values in the test concentrations that often exceed those pH values that could reasonably be expected to be found in the effluent or in the mixing zone under ambient conditions. Unionized ammonia toxicity caused by pH drift is considered to be an artifact of test conditions and is not a true measure of the ammonia toxicity likely to occur as the discharge enters the receiving waters. In order to reduce the occurrence of artifactual unionized ammonia toxicity, it may be necessary to control the pH in toxicity tests, provided the control of pH is done in a manner that has the least influence on the test water chemistry and on the toxicity of other pH sensitive materials such as some heavy metals, sulfide and cyanide. This Order authorizes the use of pH control procedures where the procedures are consistent with USEPA methods and do not significantly alter the test water chemistry so as to mask other sources of toxicity.

D. Final Effluent Limitations

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1. **Satisfaction of Anti-Backsliding Requirements**

Most effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, except for the effluent limitations for total residual chlorine and settleable solids.

The previous permit contained an effluent limitation for total residual chlorine requiring that effluent discharged to Basalt Pond shall not contain detectable levels of total chlorine. The Order also contained monitoring requirements for total residual chlorine for the Discharger to demonstrate compliance with the total residual chlorine effluent limitation. During the term of Order No. R1-2005-0084, the Discharger discontinued the use of chlorine for disinfection of the effluent and replaced it with a UV disinfection system. Although the Discharger uses chlorine for maintenance cleaning of the filter tanks and clean-in-place cycles for the filter membranes, as discussed in section IV.C.3.a.ii, the Discharger has developed SOPs to ensure that chlorine is not discharged in the effluent to Basalt Pond. The Facility modifications and lack of reasonable potential for total chlorine residual constitutes new information, which permits the removal of effluent limitations consistent with Clean Water Act Section 402(o)(2)(B). As a result of the RPA, effluent limitations for total residual chlorine are not included in the proposed Order and anti-backsliding requirements are satisfied. The Discharger will be required to update and maintain SOPs for the use of chlorine, notify the Regional Water Board of any changes in chlorine usage or SOPs, and notify the Regional Water Board if excess chlorine is released into the wastewater stream.

The previous permit contained an effluent limitation for settleable solids requiring that effluent discharged to Basalt Pond shall not contain any measurable settleable solids. The Order also contained monitoring requirements for settleable solids for the Discharger to demonstrate compliance with the settleable solids effluent limitation. During the term of Order No. R1-2005-0084, the Discharger upgraded its wastewater treatment facility to include advanced wastewater treatment utilizing membrane bioreactors. This technology removes all settleable solids to negligible levels and this has been demonstrated with settleable solids monitoring for over a year. The Facility modifications and lack of reasonable potential for settleable solids constitutes new information, which permits the removal of effluent limitations consistent with Clean Water Act section 402(o)(2)(B). As a result of the RPA, effluent limitations for settleable solids are not included in the proposed Order and anti-backsliding requirements are satisfied.

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2. **Satisfaction of Antidegradation Policy**

This Order is consistent with applicable federal and State antidegradation policies, as it does not authorize the discharge of increased concentrations of pollutants or increased volumes of treated wastewater beyond that which was permitted to discharge in accordance with the previous Order. In fact, discharges to surface water will be decreased in volume and pollutant mass upon completion of the Discharger's reclamation system thus should result in improvements to water quality.

The discharge of recycled water to land will not result in degradation to surface water due to low levels of pollutants in the highly treated effluent, and attenuation and dilution that will occur as water moves from the point of irrigation to the Russian River. In addition, irrigation at hydraulic agronomic rates will prevent or minimize the potential for irrigation runoff.

The discharge of recycled water may result in minor degradation of groundwater, primarily due to salts, but would not result in the exceedance of applicable water quality objectives. Degradation of groundwater by constituents in recycled water may be permitted where it has been demonstrated that any change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water, and will not result in water quality less than that prescribed in the Basin Plan. In addition, it must be demonstrated that the discharges to high quality waters meet waste discharge requirements that result in the best practicable treatment or control of the discharge necessary to avoid pollution or nuisance and assure that the highest water quality consistent with the maximum benefit to the people of the state is maintained.

Degradation of groundwater from constituents in recycled water after effective source control, treatment, and control may be determined consistent with maximum benefit to the people of the State, provided that the terms of the Basin Plan and Recycled Water Policy are met. Whether the degradation of groundwater consistent with the Basin Plan and Recycled Water Policy requirements is consistent with the maximum benefit to the people of the State is based on consideration of the four factors that are discussed in the following paragraphs (a. through d.):

a. Past, present, and probable beneficial uses of the receiving water (as specified in the Basin Plan);

   This Order establishes terms and conditions of discharge to ensure that the discharge does not unreasonably affect present and anticipated

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beneficial uses of groundwater and surface water. These terms and conditions include:

i. Recycled water will be treated to achieve disinfected, tertiary level recycled water with nutrient removal;

ii. Recycled water will be applied at agronomic rates reflecting the hydraulic and nutrient requirements of the use area;

iii. As discussed in section II.D.3 of the Fact Sheet, salt concentrations in the effluent are well below the applicable water quality objective (TDS secondary drinking water MCL), and there is sufficient seasonal rainfall that will infiltrate allowing for net dilution of salts as it percolates to the water table;

iv. The Discharger is responsible for ensuring that recycled water meets the quality standards and associated waste discharge requirements of this Order;

v. The Discharger must identify and require implementation of BMPs to prevent and minimize the potential for surface runoff of irrigation water; and

vi. Discharges to surface waters, other than those authorized in this Order, are prohibited.

b. Economic and social costs, tangible and intangible, of the recycled water usage compared to the benefits have been considered as follows:

i. Construction of the recycled water system will result in construction costs and increased service fees for the City. These costs are outweighed by the need for the Discharger to provide a means to comply with the Basin Plan seasonal discharge prohibition. The City of Healdsburg evaluated alternatives for compliance with the Basin Plan, in its 2005 FEIR, and determined that construction of a reclamation system was the preferred means of compliance.

ii. The use of recycled water for irrigation could potentially result in degradation of groundwater or risks to public health if the recycled water is mismanaged. These environmental/social risks are offset by the high quality of treatment provided and the Discharger's commitment to implementing BMPs to ensure protection of groundwater and public health.

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iii. The use of recycled water reduces the diversion of water from Dry Creek, thus reducing the potential for dewatering Dry Creek.

iv. The use of recycled water reduces the diversion of groundwater for irrigation uses, thus reducing the potential for dewatering groundwater and protecting this resource for needed domestic supply, and

v. The use of recycled water provides a sustainable and drought-resistant source of irrigation water for agricultural and urban uses and conserves potable water.

c. Environmental aspects of the recycled water usage have been considered as follows:

i. Construction of the reclamation system will result in reductions in the volume and timing of discharges of treated wastewater to the Russian River. Upon completion of the reclamation system, discharges to the Russian River during the summer recreation system will be eliminated.

ii. The potential for groundwater degradation or runoff to surface waters is offset by the high quality of treatment provided and the Discharger's commitment to implementing BMPs to ensure protection of groundwater and to minimize the potential for surface runoff.

d. Implementation of feasible alternative treatment or control methods.

Degradation of groundwater will not result in water quality less than that prescribed in the Basin Plan because this Order requires the Discharger to implement, and ensure that recycled water users implement, the following treatment and control measures necessary to avoid pollution or nuisance and maintain the highest water quality consistent with the maximum benefit to the people of the State:

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i. Implement treatment and use standards necessary to produce disinfected tertiary recycled water with nutrient removal, and implement the applicable title 22 requirements;

ii. Apply recycled water at nutrient and hydraulic agronomic rates (whichever is the limiting);

iii. Identify and implement best management practices to minimize the potential for irrigation runoff and for percolation of recycled water to groundwater;

iv. Develop, maintain, and implement an Operation and Maintenance/Irrigation Management Plan; and

v. Employ trained personnel.

The preceding analysis demonstrates that there is sufficient reason to allow for the potential of limited groundwater degradation, provided the terms of the Basin Plan, the Recycled Water Policy, and this Order are met.

Recycled water requirements in Attachment G require the Discharger to implement management measures and BMPs that ensure that all irrigation occurs in a manner that is protective of groundwater and surface water quality. A key component of the water reclamation requirements in Attachment G is the requirement for the Discharger to submit programmatic and site-specific technical reports prior to commencement of reclamation activities at proposed new use sites. The programmatic technical report(s), must be approved by the Regional Water Board Executive Officer, and be subjected to a 30-day public comment period. The programmatic technical report must contain sufficient information to demonstrate that recycled water will be applied at hydraulic and nutrient agronomic rates and that BMPs will be implemented to ensure that recycled water is not overapplied and does not discharge to surface waters or cause degradation of groundwater.

Removal of the effluent limitations for total chlorine residual and settleable solids is also consistent with antidegradation policies. No increase in total chlorine residual concentrations is planned. The Discharger's SOPs will ensure that no chlorine residual is discharged in the effluent to Basalt Pond. The advanced wastewater treatment process ensures that no settleable solids are discharged in the effluent to Basalt Pond.

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3. **Stringency of Requirements for Individual Pollutants**

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The terms of this Order meet the minimum federal technology-based effluent limitations for secondary treatment, and in addition include additional requirements, expressed as technology equivalence requirements, for BOD_5, TSS, pH, and total coliform bacteria that are necessary to achieve tertiary treatment of wastewater, consistent with the Basin Plan's requirements that discharges of municipal wastewater into the Russian River and its tributaries be of advanced treated water. Restrictions on these pollutants are discussed in section IV.B in this Fact Sheet.

WQBELs 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 WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the SIP, which was approved by USEPA on May 18, 2000. Most 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). The remaining water quality objectives and beneficial uses implemented by this Order (specifically the addition of the beneficial uses Water Quality Enhancement (WQE), Flood Peak Attenuation/Flood Water Storage (FLD), Wetland Habitat (WET), Native American Culture (CUL), and Subsistence Fishing (FISH)) and the General Objective regarding antidegradation) were approved by USEPA on, March 4, 2005, and are applicable water quality standards pursuant to section 131.21(c)(2). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

In addition, the Regional Water Board has considered the factors in Water Code section 13263, including the provisions of Water Code section 13241, in establishing these requirements.

Water Code section 13263 requires that waste discharge requirements "*implement any relevant water quality control plans that have been adopted and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance and the provisions of section*

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13241." These requirements, however, only apply to those portions of the permit that exceed the requirements of the federal Clean Water Act, and not to those requirements that are necessary to meet the technology-based effluent limitations or the WQBELs necessary to protect water quality objectives for surface waters set out in the Basin Plan. (*City of Burbank v. State Water Resources Control Board*, 35 Cal. 4th 613, 627.) In this Order, those requirements that exceed the requirements of the federal Clean Water Act are those that solely apply to the land discharge. Nonetheless, the Regional Water Board considered the factors in Water Code section 13263 and 13241 in establishing the requirements for discharges to surface waters and land, and concluded that the factors did not merit any change to the proposed effluent limits, discharge prohibitions, or receiving water limitations.

The Regional Water Board considered the factors set forth in section 13263 and 13241 throughout various portions of the permit, including Attachment F, which contains background information and rationale for the requirements set forth in the permit. The permit, in section II.H, and section III.C of Attachment F, identifies the beneficial uses identified in the Basin Plan. Section IV of Attachment F sets forth the rationale for the effluent limits, particularly the beneficial uses to be protected and water quality objectives required for that purpose. Section IV.G of Attachment F sets out a discussion of the factors set forth in 13263 and 13241 considered for the effluent limits on the reclamation discharge. The Regional Water Board also considered upgrades to the Facility performed by the Discharger, along with other waste discharges in the watershed, and concluded that coordinated control of other discharges would not eliminate the need for the requirements on this discharge, particularly given the continued growth in the region and the past, present and probable future uses of the receiving waters and the environmental characteristics, including water quality, of the Geyserville hydrologic subarea of the Russian River. (See Attachment F, Section III.D, III.E, IV, and V.) The Regional Water Board also considered the need to develop and use recycled water, and the potential for increased reclamation opportunities within the area proposed by the Discharger. The Regional Water Board also considered the need to prevent nuisance, and incorporated discharge prohibitions to protect against nuisance caused by the discharge or use for reclamation of untreated or partially treated waste from anywhere within the collection, treatment or disposal system or from sanitary sewer overflows. Because other dischargers throughout the Russian River watershed have achieved compliance with similar limits, and the Discharger did not submit any evidence regarding the cost of compliance or its effect on the development of housing within the region, the Regional Water Board did not specifically address the issue of the Order's effects on housing or economic considerations.

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Summary of Final Effluent Limitations
Discharge Point 001

Table F-12. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[34]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--	AWT
	lbs/day[35] (dry-weather)	117	175	--	--	--	
	lbs/day[36] (wet-weather)	334	500	--	--	--	
	% Removal	85	--	--	--	--	CFR
Total Suspended Solids	mg/L	10	15	--	--	--	AWT
	lbs/day[35] (dry-weather)	117	175	--	--	--	
	lbs/day[36] (wet-weather)	334	500	--	--	--	
	% Removal	85	--	--	--	--	CFR
Total Coliform Bacteria	MPN/100 mL	--	2.2[37]	23/240[38]	--	--	AWT
pH	standard units	--	--	--	6.5	8.5	BP

[34] AWT – Based on the technical capability of an advanced wastewater treatment facility.
CFR – Based on secondary treatment regulations contained in 40 CFR Part 133.
BP – Based on water quality objectives contained in the Basin Plan.
NAWQC – Based on the National Ambient Water Quality Criteria for protection of freshwater aquatic life.

[35] Mass-based limitations are based on the dry weather design flow of the Facility of 1.4 mgd.

[36] During wet weather periods, when the influent flow rate exceeds the dry weather design flow, mass emission limitations shall be calculated using the concentration-based effluent limitations and the actual daily average influent flow rate (not to exceed a maximum sustained peak flow rate of 4.0 mgd).

[37] Expressed as a 7-day median.

[38] The number of coliform bacteria must not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

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Parameter	Units	Effluent Limitations					Basis[34]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Copper, Total Recoverable	µg/L	[39]	--	[39]	--	--	CTR
Acute Toxicity	% Survival	--	--	[40]	--	--	BP

E. Interim Effluent Limitations – Not Applicable

No interim effluent limitations are established in this Order as the Discharger has not requested interim effluent limitations. In addition, interim limitations for CTR constituents may no longer be included in NPDES permits after May 18, 2010.

F. Land Discharge Specifications – Not Applicable

This section is not applicable to the Discharger as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Discharger will reclaim treated wastewater as it develops its recycled water distribution system, thus the Discharger has Reclamation Specifications rather than Land Discharge Specifications.

G. Reclamation Specifications

The Discharger is planning to design and construct a reclamation system to irrigate urban turf areas and vineyards from May 15 through September 30. A portion of the reclamation system may be phased in during the term of this Order.

1. Scope and Authority

Section 13263 of the Water Code requires the Regional Water Board to prescribe requirements for proposed discharges, existing discharges, or material change in an existing discharge based upon the conditions of the disposal area or receiving waters upon or into which the discharge is made or proposed. The prescribed requirements shall implement any relevant water

[39] Final effluent limitations for copper are hardness-dependent. See Attachment E-1 for the full table of hardness-dependent copper effluent limitations, which are to be determined based on the hardness of the receiving water at the time the discharge is sampled.

[40] There shall be no acute toxicity in treated wastewater discharged to Basalt Pond. The Discharger will be considered compliant with this limitation when the survival of aquatic organisms in a 96-hour bioassay of undiluted effluent complies with the following:
1) Minimum for any one bioassay: 70 percent survival; and
2) Median for any three or more consecutive bioassays: at least 90 percent survival.
Compliance with this effluent limitation shall be determined in accordance with section V.A of the Monitoring and Reporting Program (Attachment E).

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quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241. In prescribing requirements, the Regional Water Board is not obligated to authorize the full waste assimilation capacities of the receiving water.

Here, the Regional Water Board considered all of these factors when developing the waste discharge requirements for the reclamation discharge. Limitations for BOD_5, TSS, and pH were scientifically derived to implement water quality objectives that protect beneficial uses. Both beneficial uses and the water quality objectives have been approved pursuant to state law, and then submitted to and approved by USEPA. In addition, discharge prohibitions were included to prohibit the reclamation use of untreated or partially treated waste, in order to prevent nuisance and protect groundwater. In addition, the Regional Water Board considered the factors set forth in Water Code section 13241, including the consideration of past, present, and probable future beneficial uses of the receiving water, which the Regional Water Board anticipates to be the same as set forth in the Basin Plan. The Regional Water Board considered the environmental characteristics, including water quality, of the Russian River-Geyserville Hydrologic Subarea of the Russian River Hydrologic unit, the coordinated control of all factors which affect water quality in the area, and the need to develop and use recycled water, which this Order supports. The Discharger did not submit any evidence regarding whether the waste discharge requirements for reclamation discharges would interfere with the development of needed housing within the region or the costs of compliance, particularly anything to show that the costs of compliance with the Order would be unmanageable.

2. **Applicable Beneficial Uses and Water Quality Criteria and Objectives**

   a. **Beneficial Uses.** Beneficial use designations for groundwater established in the Basin Plan include MUN, IND, PRO, AGR, and FRSH.

   b. **Basin Plan Water Quality Objectives.** The Basin Plan contains narrative objectives for tastes and odors, bacteria, radioactivity, and chemical constituents (including those chemicals that adversely affect agricultural water supply) that apply to groundwater.

3. **Determining the Need for WQBELs and Technology-Based Limits for Reclamation**

The following reclamation specifications apply to effluent discharges to the 25 million gallon recycled water storage pond.

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a. **BOD_5 and TSS.** This Order establishes discharge specifications for BOD_5 and TSS based on technology-based effluent limitations that consist of a monthly average of 10 mg/L and a weekly average of 15 mg/L. These levels are technically achievable based on the capability of the tertiary treatment system. These limits are included in the Order to ensure that discharges to the reclamation system receive proper treatment.

b. **Coliform Bacteria.** This Order establishes reclamation specifications for coliform bacteria that reflect standards for tertiary treated recycled water adopted by the CDPH in title 22 of the CCR and are included to ensure that recycled water quality is protective of human health. Recycled water from this facility meets the highest title 22 treatment and disinfection standards and is suitable for the broad range of recycled water uses identified in title 22, including urban land uses.

c. **pH.** The Order establishes a reclamation discharge specification for pH of 6.0 to 9.0 based on technology-based effluent limitations required by USEPA pursuant to 40 CFR Part 133. These pH limits are included in the Order to ensure that pH levels are appropriate for protection of groundwater when discharging to reclamation sites.

d. **Chemical Constituents.** The Basin Plan requires that waters designated for use as MUN shall not contain concentrations of chemical constituents in excess of the limits specified in CCR, title 22, Chapter 15, Division 4, Article 4, Section 64435 (Tables 2 and 3), and Section 64444.5 (Table 5), and listed in Table 3-2 of the Basin Plan. The Discharger monitored groundwater upstream and downstream of its discharge of disinfected secondary effluent to Basalt Pond from 2005 through 2007 for ammonia, TDS, nitrate, nitrite, chloride, and fluoride. Monitoring data for these constituents in the upstream and downstream groundwater did not indicate exceedances of applicable water quality objectives established in the Basin Plan, however there were increases in TDS and chloride concentrations in the downstream wells in comparison to the upstream wells. Because discharges of secondary treated effluent did not cause exceedances of water quality objectives, and because the Discharger's disinfected tertiary effluent meets applicable water quality objectives for nutrients and salts,discharges of tertiary effluent to the recycled water storage pond are not expected to cause exceedances of applicable water quality objectives in the groundwater. ..

The monitoring and reporting program requires the Discharger to monitor for constituents listed in the CCR,

title 22, division 4, chapter 15, sections 64431 (inorganic chemicals) and 64444 (organic chemicals) one time during the term of this Order in order to determine whether any of these constituents are present in the treated, disinfected recycled water.

4. **WQBEL Calculations**

This section does not apply to the reclamation aspect of this Facility. All of the reclamation specifications are based on the technical capabilities of the advanced wastewater treatment system and levels required by the Basin Plan and title 22, thus no calculations were needed to determine the WQBELs.

Table F-13. Summary of Reclamation Specifications

Parameter	Units	Discharge Specifications			
		Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--
Total Suspended Solids	mg/L	10	15	--	--
pH	standard units	--	--	6.0	9.0
Total Coliform Bacteria	MPN/100 mL	2.2[41]	23/240[42]	--	--

5. **Water Reclamation Requirements and Provisions – Attachment G**

Attachment G contains Water Reclamation Findings, Requirements and Provisions to ensure that recycled water is used in a manner that is protective of groundwater and surface water quality. The Discharger's 2005 certified FEIR contains the environmental assessment for proposed

[41] Expressed as a 7-day median.
[42] The number of coliform bacteria must not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

recycled water use sites and addresses many of the Regional Water Board concerns. Detailed plans are still needed to clearly identify the technical details regarding hydraulic and nutrient agronomic rates and to specify the BMPs that will be implemented to ensure that recycled water will not be overapplied or used in a manner that causes discharges to surface waters or degradation of groundwater. Attachment G includes requirements for the Discharger to submit these technical details prior to commencement of reclamation activities at proposed use sites. Attachment G also includes public notice requirements for programmatic technical reports submitted by the Discharger. The water reclamation requirements of this Order (including Attachment G) are consistent with the requirements of title 22 of the CCR and the State Water Board Recycled Water Policy adopted by State Water Board Resolution No. 2009-0011 on February 3, 2009 and approved on May 14, 2009 and State Water Board Order No. 2009-0006-WQ, General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water, adopted by the State Water Board on July 7, 2009.

A key to reducing the potential for spills is for the Discharger to establish appropriate BMPs to protect against the possibility of recycled water spills. Thus Water Reclamation Technical Report Requirements C.2.a.iii. and C.3.a.i.(c)(iii) require the Discharger to recognize the possibility of runoff from recycled water use areas and describe measures, including BMPs that the Discharger will implement to minimize the possibility of runoff.

The water reclamation requirements of this Order (including Attachment G and section X

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of the MRP) include requirements for dual-plumbed systems, including requirements for cross-connection prevention. The Regional Water Board recognizes that at the time of adoption of this Order, the Discharger has not identified any dual-plumbed recycled water uses, however, the language that relates to dual-plumbed systems is included in this Order to provide for the possibility of the Discharger adding such uses, in the event that the Discharger identifies any potential dual-plumbed uses during the term of this Order and completes necessary CEQA documentation, title 22 engineering report, and other Order requirements.

H. Other Requirements

The Order contains additional specifications that apply to the Facility regardless of the disposal method (surface water discharge, land disposal, or reclamation), including:

1. **Turbidity**. This provision specifies that the turbidity of the filtered wastewater[43] not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period, and 0.5 NTU at any time, and is based on the definition of filtered wastewater found in title 22 section 60301.320 of the CCR. The title 22 definition is used as a reasonable performance standard to ensure adequate removal of turbidity upstream of disinfection facilities. Properly designed and operated effluent filters will meet this standard. The point of compliance for the turbidity requirements is a point following the membrane bioreactors and before discharge to the UV disinfection system.

2. **Ultraviolet Disinfection Process Requirements.** The Order also contains new monitoring requirements for the UV disinfection system. These requirements are needed to determine compliance with requirements for recycled wastewater systems, established at CCR title 22, division 4, chapter 3 and to ensure that the disinfection process achieves effective pathogen reduction.

   UV system operation requirements are necessary to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g. viruses) in

[43] The terms “filtered wastewater” is used interchangeably with the term “filtered effluent” used in the permit.

the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, and wastewater flow through the UV System. Minimum dosage requirements are based on recommendations by the CDPH and guidelines established by the National Water Research Institute (NWRI) and American Water Works Association Research Foundation's (NWRI/AWWARF) "Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse" first published in December 2000 revised as a Second Edition dated May 2003. Furthermore, a Memorandum dated November 1, 2004 issued by CDPH to Regional Water Board Executive Officers recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of quartz sleeves as well as include provisions that specify minimum delivered UV dose that must be maintained (as recommended by the NWRI/AWWARF UV Disinfection Guidelines). Minimum UV dosage requirements specified in Effluent Limitations and Discharge Specifications Section IV.D.2 ensures that adequate disinfection of wastewater will be achieved.

3. **Storage Ponds.** Storage pond requirements are included in section IV.D.3 of the Order to ensure that future storage ponds are constructed in a manner that protects groundwater and complies with requirements of title 27 of the CCR.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

CWA section 303(a-c) requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional* [Water] *Board will apply to regional waters in order to protect the beneficial uses*." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, bacteria, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, specific conductance, total dissolved solids, and turbidity.

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B. Groundwater

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and freshwater replenishment to surface waters.

2. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

3. Discharges from the Facility shall not cause exceedance of applicable water quality objectives or create adverse impacts to beneficial uses of groundwater.

4. The Basin Plan requires that waters designated for use as MUN shall not contain concentrations of chemical constituents in excess of the limits specified in the California Code of Regulations, title 22, Chapter 15, Division 4, Article 4, Section 64435 (Tables 2 and 3), and Section 64444.5 (Table 5), and listed in Table 3-2 of the Basin Plan. The Discharger monitored groundwater upstream and downstream of the discharge to Basalt Pond from 2005 through 2007 for ammonia, TDS, nitrate, nitrite, chloride, and fluoride. Monitoring data for these constituents in the upstream and downstream groundwater did not indicate exceedances of applicable water quality objectives established in the Basin Plan, however, TDS and chloride concentrations were increased in downstream wells in comparison to upstream wells. Discharges to Basalt Pond, the recycled water storage pond, and authorized reclamation sites are not expected to cause exceedances of applicable water quality objectives in the groundwater in light of past monitoring results and due to the higher quality of effluent that is now discharged to Basalt Pond, and specific groundwater limitations and monitoring for these parameters are not required by this Order.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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 (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.

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A. Influent Monitoring

Influent monitoring requirements for influent flow, BOD_5, and TSS are retained from the previous permit and are necessary to determine compliance with the Order's 85 percent removal requirement for these parameters.

B. Effluent Monitoring

Effluent monitoring requirements from the previous permit are retained for flow, BOD_5, TSS, total coliform bacteria, pH, temperature, copper, and acute toxicity. These monitoring requirements are necessary to determine compliance with prohibitions and/or effluent limitations established by the Order. Monitoring at EFF-001 is to demonstrate compliance with technology-based effluent limitations, demonstrate compliance with WQBELs, and demonstrate that the discharge does not pose reasonable potential for a pollutant to exceed any numeric or narrative water quality objectives. If the discharge to Basalt Pond is found to contain levels of any pollutant that poses reasonable potential to exceed any numeric or narrative water quality objective, the Regional Water Board would propose to develop effluent limitations for that pollutant(s) for discharges to Basalt Pond. The annual effluent monitoring requirement for chronic toxicity has also been retained from the previous MRP. This monitoring requirement enables the Regional Water Board to assess compliance with the Basin Plan's narrative water quality objective for toxicity that is applicable to all receiving waters of the Region.

Effluent monitoring for settleable solids and chlorine residual that were included in the previous permit have been removed. See the discussion in section IV.D.1 (Satisfaction of Antibacksliding Requirements) of this Fact Sheet.

The following effluent monitoring requirements are newly established by the MRP (Attachment E of this Order).

1. Requirements to monitor total ammonia, nitrate, and total phosphorous in effluent monthly have been established and because nitrogen and phosphorus containing compounds are a common component of domestic wastewaters that can have a directly toxic (e.g., unionized ammonia) or a detrimental biostimulatory effect on receiving waters. The Regional Water Board is including such monitoring requirements in the discharge permits of most POTWs in the North Coast Region to evaluate the need for effluent limitations for these pollutants.

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2. Requirements to monitor nitrite and organic nitrogen in the effluent discharged to Basalt Pond have been established. These monitoring requirements are necessary, in combination with monitoring for nitrate and ammonia in order to determine the total nitrogen concentration of the effluent for the purpose of knowing the nitrogen loading for future reclamation. The MRP requires monitoring for nitrite and organic nitrogen at Monitoring Location EFF-001 (Table E-4) for a period of a year in order to establish the total nitrogen concentration in the effluent. The MRP also establishes routine monthly monitoring for nitrate, nitrite, ammonia, and organic nitrogen in the discharge to the reclamation system.

3. Routine monitoring requirements for the dilution rate of the effluent in the Russian River have been explicitly established in the MRP to determine compliance with Discharge Prohibition III.K.

4. Routine annual monitoring requirements for the title 22 pollutants have been established to provide ongoing characterization of treated wastewater that is discharged from the treatment facility and to assess the need for additional effluent limitations. The title 22 pollutants are those toxic pollutants for which CDPH has established Maximum Contaminant Levels (MCLs) at title 22, Division 4, Chapter 15 of the CCR. For receiving waters designated as municipal and domestic supply in the North Coast Region, the Basin Plan has established the title 22 MCLs as applicable water quality criteria.

   Aluminum is a title 22 metal that is frequently present in municipal wastewater. The applicable Secondary MCL – Consumer Acceptance Limit for aluminum is 200 µg/L. The results of monitoring data from October 2008 indicate that aluminum was not detected in the effluent. However, due to concerns regarding the presence of aluminum in municipal wastewater from POTWs in the North Coast Region, this Order requires quarterly monitoring for the first year of the permit term. Should monitoring indicate concentrations of aluminum in the discharge are below the applicable Secondary MCL, the Discharger may discontinue effluent monitoring for aluminum. Should monitoring indicate concentrations of aluminum that exceed the applicable Secondary MCL, the Discharger shall continue to monitor for aluminum quarterly and the Regional Water Board may evaluate the need to reopen this Order to include effluent limitations for aluminum.

4. A new requirement for effluent hardness monitoring has been added to the MRP. The toxicity of certain metals is hardness dependent (i.e., as hardness decreases, metals toxicity increases). Although the SIP currently requires that receiving water hardness be used to calculate

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effluent limitations for hardness-based metals, the State Water Board is currently evaluating evidence that more protective effluent limitations may be established utilizing minimum effluent hardness for certain metals. The collection of effluent hardness data will provide a data set to be utilized in the future for the establishment of some effluent limitations.

Monitoring of hardness in the effluent should coincide with compliance monitoring for the hardness-dependent metal (copper) with effluent limitations established by this Order.

5. The Discharger has monitored for CTR priority pollutants only once since completion of the upgrade to advanced wastewater treatment. During the sampling event in October 2008, arsenic, chloroform, copper, lead, thallium, and zinc were detected in the effluent. However, copper was the only pollutant that demonstrated reasonable potential to cause or contribute to water quality criteria. Therefore, monthly monitoring for copper has been retained from the previous Order to determine compliance with applicable copper effluent limitations. In accordance with Section 1.3 of the SIP, periodic monitoring is required for CTR priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Monitoring for all CTR priority pollutants is required three times during the five year term of this Order. Also in accordance with section 1.3 of the SIP, the Regional Water Board may require additional monitoring for any pollutant for which data are unavailable or insufficient to conduct a reasonable potential analysis for the pollutant. Due to the limited amount of CTR monitoring data, quarterly monitoring is being established for those CTR priority pollutants that were detected in the effluent at levels that were high enough to require additional monitoring to demonstrate whether or not there is reasonable potential for that pollutant to exceed the applicable water quality objective. Thus additional monitoring is required for lead, and zinc to further characterize the presence of these pollutants in the effluent. The MRP allows monitoring for these constituents to be reduced or dropped if no reasonable potential is shown after one year of monitoring. Although arsenic, thallium and chloroform were detected in the October 2008 sampling event, quarterly monitoring is not required because the detections were so low in comparison to the lowest water quality objective for each of these three CTR pollutants.

6. Groundwater monitoring data, performed from 2005 to 2007 as part of the Discharger's Groundwater Monitoring Plan, indicates that the discharge to Basalt Pond may cause increases in groundwater concentrations of chloride, fluoride, nitrate, and total dissolved solids. Although monitoring data did not indicate increases that resulted in exceedances of applicable

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water quality objectives for groundwater, additional information is necessary to determine the contribution of these pollutants in the effluent to Basalt Pond. As discussed above, this Order establishes monthly effluent monitoring for nitrate. Should monitoring indicate concentrations of a parameter exceeds the applicable Secondary MCL or poses a threat to water quality, the Discharger shall continue to monitor quarterly for that parameter and the Regional Water Board may evaluate the need to reopen this Order to include effluent limitations and/or groundwater limitations.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) limitations and monitoring requirements are retained from the previous Order and are included in the Order to protect the receiving water quality from the aggregate effect of a mixture of pollutants in the effluent. Acute toxicity testing measures mortality in 100 percent effluent over a short test period and chronic toxicity testing is conducted over a longer time period and may measure mortality, reproduction, and/or growth. This Order includes effluent limitations and monitoring requirements for acute toxicity; as well as monitoring requirements for chronic toxicity to determine compliance with the Basin Plan's narrative water quality objective for toxicity.

The monitoring frequency for acute toxicity may be reduced from monthly to quarterly if, during the first year of the Order, monthly monitoring shows at least 90% survival during that time period.

D. Land Discharge Monitoring Requirements

This section is not applicable to the Discharger as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Discharger will reclaim treated wastewater as it completes its reclamation system, thus the Discharger has Reclamation Monitoring Requirements rather than Land Discharge Monitoring Requirements.

E. Reclamation Monitoring Requirements

This Order requires that the Discharger comply with applicable state and local requirements regarding the production and use of reclaimed wastewater and implement mitigation measures identified in its environmental document(s) for the protection of water quality. Thus, reclamation specifications for total coliform bacteria have been established based on standards for tertiary treated recycled water adopted by CDPH at title 22 of the CCR. Reclamation specifications for BOD_5, TSS, and pH have been established in this Order based on the technical capability of the advanced wastewater treatment

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system to ensure that discharges to authorized reclamation sites receive proper treatment. Therefore, this Order establishes weekly monitoring requirements for BOD_5, TSS, and pH and daily monitoring requirements for total coliform for discharges to the recycled water storage pond. This Order also establishes monitoring of recycled water at Discharge Point 003 (Monitoring Location REC-002) for total dissolved solids (TDS), chloride, boron, and sodium in order to determine whether any of these constituents are present in the effluent at concentrations that exceed the water quality objectives for these constituents. TDS is a direct measure of salinity, which can affect underlying groundwater quality as it relates to drinking water and agricultural supply beneficial uses. Secondary MCLs for taste and odor in drinking water have been established by CDPH for TDS (500 mg/L), chloride (250 mg/L), and sodium (60 mg/L). An agricultural water quality limit of 0.7 mg/L has been established for boron. The MRP allows for reduction of monitoring frequency or elimination of the monitoring requirement if monitoring data over time demonstrates that any constituent is present in concentrations that could not cause an exceedance of water quality objectives. The Discharger is also required to monitor continuously for flow to the treated recycled water storage pond and report the average and maximum daily flow rate to the pond, report the number of days that treated wastewater is used for reclamation at each authorized use site, and report the monthly volume and nitrogen application rate for each use site.

F. Receiving Water Monitoring

1. Surface Water

The previous Order required the Discharger to monitor in Basalt Pond at “upstream” and “downstream” monitoring locations. On December 13, 2004, the Discharger submitted a letter to the Regional Water Board outlining proposed sampling locations. The Discharger’s proposed upstream monitoring location was the same as the effluent monitoring station. The Discharger’s proposed downstream monitoring location was from a location on the western side of Basalt Pond, approximately 100 feet from the shore, which represents the approximate point of maximum depth in Basalt Pond. The Order and MRP recognize that the effluent must meet all effluent limitations and applicable receiving water limitations and that the downstream receiving water monitoring station is to be located within 25 to 50 feet of the point of discharge.

This Order and MRP does not consider the effluent monitoring station to be equivalent to an upstream monitoring location and does not retain the downstream monitoring location proposed by the Discharger in 2004. Instead, this Order recognizes the unique circumstances associated with

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having a discharge into a pond and the difficulties associated with establishing receiving water monitoring in a pond environment. Due to the unique circumstances of having a discharge into a pond, the MRP does not establish compliance monitoring requirements for temperature, pH, dissolved oxygen, ammonia, specific conductance and total dissolved solids. Instead, the Order establishes two special study requirements to assess receiving water conditions and to determine appropriate receiving water monitoring requirements and monitoring locations.. The first special study requires the Discharger to propose and implement a study designed to collect sufficient effluent and receiving water monitoring data for ammonia, pH, temperature and any other relevant parameter to establish whether or not the discharge of effluent to Basalt Pond poses reasonable potential to cause or contribute to exceedances of applicable water quality objectives for ammonia in the receiving water (Basalt Pond). The second special study requires the Discharger to establish reference receiving water temperature, pH, dissolved oxygen, specific conductance and total dissolved solids conditions based on establishment of an appropriate reference receiving water monitoring location in one of the abandoned gravel ponds that exist in proximity to Basalt Pond. This reference monitoring station will be used to verify whether water quality conditions in Basalt Pond are due to natural conditions or influenced by the discharge of wastewater effluent. A third option, allowing the Discharger to propose a modified receiving water monitoring location, is described in the Monitoring and Reporting Program in Table E.2.

Receiving water monitoring requirements for BOD_5, dissolved oxygen, pH, turbidity, temperature, and hardness are retained from the previous Order. The receiving water monitoring requirement for fecal coliform organisms has been removed from the monitoring and reporting program. The Discharger has demonstrated that its disinfection process effectively reduces total coliform to a level of <2 MPN/100 mL and does not have the reasonable potential to contribute to coliform in Basalt Pond at levels that have the potential to exceed any receiving water limits.

The following receiving water monitoring requirements are newly established by the Monitoring and Reporting Program (Attachment E of this Order).

a. Because the toxicity of certain metals is hardness dependent (i.e., as hardness decreases, metals toxicity increases), monitoring of hardness in the receiving water is required on a monthly basis during periods of discharge to Basalt Pond to allow calculation of water quality objectives and effluent limitations that are hardness dependent. Monitoring of hardness in the receiving water must

coincide with effluent compliance monitoring for the hardness dependent metal (copper) and priority pollutants (annually).

b. Monitoring requirements for total ammonia, nitrate, and total phosphorus are required to characterize the assimilative capacity of the receiving water for these nutrients, to determine the impact of the discharge on the receiving water with respect to these parameters, and to generate background data for these constituents for future reasonable potential analyses. The ammonia data will be used in conjunction with the ammonia monitoring study required in section VI.C.2.b of this Order.

c. Water quality criteria for the title 22 pollutants and CTR priority pollutants are applicable to Basalt Pond, and therefore characterization of background conditions is necessary to assess impacts of the discharge. In addition, reasonable potential analyses, conducted in accordance with procedures established by the SIP, require characterization of background levels of the toxic pollutants.

2. **Groundwater**

This Order does not establish groundwater monitoring requirements. Groundwater monitoring may be established in the future if necessary to assess impacts of effluent disposal or reclamation.

G. Other Monitoring Requirements

Monitoring requirements for the disinfection process and for the filtration process are established in this Order to determine compliance with requirements for recycled wastewater systems, established at CCR title 22, Division 4, Chapter 3.

UV disinfection system requirements have been added to the Order and the MRP to assess compliance of the UV disinfection system with recommendations of CDPH, title 22 and guidelines established by the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse (first published in December 2000 and revised as a Second Edition dated May 2003).

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. **Federal 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.

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 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).

2. **Regional Water Board Standard Provisions**

In addition to the Federal Standard Provisions (Attachment D), the Discharger shall comply with the Regional Water Board Standard Provisions provided in Standard Provisions VI.A.2.

a. Order Provision VI.A.2.a identifies the State's enforcement authority under the Water Code, which is more stringent than the enforcement authority specified in the federal regulations [e.g. 40 CFR sections 122.41(j)(5) and (k)(2)].

b. Order Provision VI.A.2.b requires the Discharger to notify Regional Water Board staff, orally and in writing, in the event that the Discharger does not comply or will be unable to comply with any Order requirement. This provision requires the Discharger to make direct contact with a Regional Water Board staff person.

c. Order Provision VI.A.2.c requires the Discharger to file a petition with, and receive approval from, the State Water Board Division of Water Rights prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse. This requirement is mandated by Water Code section 1211.

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B. Special Provisions

1. Reopener Provisions

a. **Standard Revisions (Special Provisions VI.C.1.a).** Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, which include the following:

i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if revisions of applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such revised standards.

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

b. **Reasonable Potential (Special Provisions VI.C.1.b).** This provision allows the Regional Water Board to modify, or revoke and reissue, this Order if present or future investigations demonstrate that the Discharger governed by this Permit is causing or contributing to excursions above any applicable priority pollutant criterion or objective, or adversely impacting water quality and/or the beneficial uses of receiving waters.

c. **Whole Effluent Toxicity (Special Provisions VI.C.1.c).** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a TRE. This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

d. **303(d)-Listed Pollutants (Special Provisions VI.C.1.d).** This provision allows the Regional Water Board to reopen this Order to modify existing effluent limitations or add effluent limitations for pollutants that are the subject of any future TMDL action.

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e. **Water Effects Ratios (WERs) and Metal Translators (Special Provisions VI.C.1.e).** This provision allows the Regional Water Board to reopen this Order if future studies undertaken by the Discharger provide new information and justification for applying a water effects ratio or metal translator to a water quality objective for one or more priority pollutants.

f. **Nutrients (Special Provisions VI.C.1.f).** This Order establishes effluent limitations for total ammonia, and monitoring requirements for the effluent and receiving water for nutrients (i.e., ammonia, nitrate, and phosphorus). This provision allows the Regional Water Board to reopen this Order if future monitoring data indicates the need for effluent limitations or more stringent effluent limitations for any of these parameters.

g. **Recycled Water (Special Provisions** VI.C.1.g.) This provision allows the Regional Water Board to reopen this Order when the State Water Board approves any recommendations of the "blue-ribbon" advisory committee that was established pursuant to requirements of the State Recycled Water Policy.

2. **Special Studies and Additional Monitoring Requirements**

a. **Toxicity Reduction Evaluations (Special Provisions VI.C.2.a).** The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. Attachment E of this Order requires chronic toxicity monitoring for demonstration of compliance with the narrative toxicity objective.

b. In addition to WET monitoring, this provision requires the Discharger to maintain an up-to-date TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The TRE is initiated by evidence of a pattern of toxicity demonstrated through the additional effluent monitoring provided as a result of an accelerated monitoring program.

c. Ammonia Monitoring Study. Ammonia, temperature and pH data collected by the Discharger to date is insufficient to determine whether the discharge of effluent to Basalt Pond poses reasonable potential to cause or contribute to exceedances of applicable water quality objectives for ammonia in the receiving water (Basalt Pond). The

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purpose of the Ammonia Monitoring Study is to collect sufficient data to conduct a complete reasonable potential analysis for ammonia.

d. Reference Receiving Water Study. The Discharger discharges treated disinfected effluent to an effluent dominated water body. Compliance with most effluent limitations and receiving water limitations can be assessed based on evaluation of effluent monitoring data. However, it is difficult, if not impossible to assess compliance with regard to temperature, pH and dissolved oxygen due to the ponded conditions. In addition, it is difficult to assess compliance with receiving water limitations for total dissolved solids and specific conductance without assessing the natural background conditions of the receiving water. Basalt Pond is bordered by several other abandoned gravel ponds. The purpose of the Reference Receiving Water Study is to determine whether temperature, pH, and dissolved oxygen conditions in Basalt Pond are due to effluent discharges or natural conditions and to assess whether or not the effluent discharge to Basalt Pond causes any exceedances of receiving water limitations.

3. **Best Management Practices and Pollution Prevention**

a. **Pollutant Minimization Plan.** Provision VI.C.3.a is included in this Order as required by section 2.4.5 of the SIP. The Regional Water Board includes standard provisions in all NPDES permits requiring development of a Pollutant Minimization Program when there is evidence that a toxic pollutant is present in the effluent at a concentration greater than an applicable effluent limitation.

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

a. Section 122.41(e) of 40 CFR requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. An up-to-date operation and maintenance manual, as required by Provision VI.C.4.b of the Order, is an integral part of a well-operated and maintained facility.

b. **Standard Operating Procedures (SOPs) for Chlorine Usage.** Although the Discharger has discontinued the use of chlorine for disinfection, the Discharger periodically uses chlorine for maintenance cleans of the filter tanks and clean-in-place procedures for the filter membranes. The Discharger submitted SOPs on July 9, 2009 that describe the Discharger's method to ensure that chlorine is not discharged to Basalt Pond in concentrations that have a reasonable potential to cause or contribute to an exceedance of water quality

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objectives. This provision requires the Discharger to maintain SOPs for the use of chlorine at the Facility to control and abate the discharge of chlorine to the receiving water. The Discharger is required to update the SOPs as needed and report any changes to the SOPs or change in chlorine usage in the Annual WWTF Report (due March 1st to the Regional Water Board). The Discharger shall report any chlorine spills at the Facility in accordance with section VI.A.2.c of the Order.

5. **Special Provisions for Municipal Facilities (POTWs Only)**

a. **Wastewater Collection Systems**

1. **Statewide General WDRs for Sanitary Sewer Systems.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on May 2, 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

   Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions VI.A.2.b and VI.C.5 of the Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006. The Discharger has enrolled under the General Order as required.

   All NPDES permits for POTWs currently include federally required standard conditions to mitigate discharges (title 40, section 122.41(d)), to report non-compliance (title 40, section 122.41(1)(6) and (7)), and to properly operate and maintain facilities (title 40, section 122.41(e)). This provision is consistent with these federal requirements.

2. **Sanitary Sewer Overflows.** The Order also includes provisions (Provisions VI.A.2.b. and VI.C.5.(a)(ii), and Attachment D

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subsections I.C., I.D., V.E., and V.H.) to ensure adequate and timely notifications are made to the Regional Water Board and appropriate local, state, and federal authorities. In addition, as an Enrollee under General Order No. 2006-0003-DWQ, the Discharger is required to report SSOs to an online SSO database administered through the California Integrated Water Quality System (CIWQS) and via telefax when the online SSO database is not available. Detailed notification and reporting requirements for SSOs and sewage spills are specified in section E of the MRP. The goal of these provisions is to ensure appropriate and timely response by the Discharger to SSOs to protect public health and water quality.

The MRP that is part of the Order establishes oral reporting limits for SSOs. The Discharger is required to orally report all spills, SSOs, and unauthorized discharges. If the spill volume is greater than 1,000 gallons or the spill reaches a drainage channel or surface waters, it must be reported within 2 hours of the Discharger becoming aware of the spill. All other spills must be reported within 24 hours. All SSOs, regardless of volume, must be electronically reported pursuant to State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

b. **Source Control Program (Provisions VI.C.5.b).** Because the average dry weather design flow of the facility is less than 5.0 mgd, the Order does not require the Discharger to develop a pretreatment program that conforms to federal regulations. However, the proposed Order includes requirements for the Discharger to implement a source identification and reduction program. The Discharger's source identification and reduction program will need to address only those pollutants that continue to be detected at levels that trigger reasonable potential.

In addition, the Regional Water Board recognizes that some form of source control is prudent to ensure the efficient operation of the Facility, the safety of Facility staff, and to ensure that pollutants do not pass through the treatment facility to impair the beneficial uses of the receiving water. The Order includes prohibitions against the discharge of pollutants that may interfere, pass through, or be incompatible with treatment operations, interfere with the use or disposal of sludge, or pose a health hazard to personnel.

c. **Sludge Disposal and Handling Requirements (Provisions VI.C.5.c).** The disposal or reuse of wastewater treatment screenings,

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sludges, or other solids removed from the liquid waste stream is regulated by 40 CFR Parts 257, 258, 501, and 503, and the State Water Board promulgated provisions of title 27 of the CCR. The Discharger has indicated that all screenings, sludges, and solids removed from the liquid waste stream are currently disposed of off-site at a municipal solid waste landfill in accordance with all applicable regulations. See Fact Sheet section II.A for more detail.

d. **Operator Certification (Provisions VI.C.5.d).** This provision requires the WWTF to be operated by supervisors and operators who are certified as required by title 23 of the CCR, section 3680.

e. **Adequate Capacity (Provisions VI.C.5.e).** The goal of this provision is to ensure appropriate and timely planning by the Discharger to ensure adequate capacity for the protection of public health and water quality.

f. **Statewide General WDRs for Discharge of Biosolids to Land (Provisions VI.C.5.f).** This provision requires the Discharger to comply with the State's regulations relating to the discharge of biosolids to the land. The discharge of biosolids through land application is not regulated under this Order. Instead, the Discharger is required to obtain coverage under the State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (General Order). Coverage under the General Order, as opposed to coverage under this NPDES permit or individual WDRs, implements a consistent statewide approach to regulating this waste discharge.

6. **Other Special Provisions**

a. **Storm Water Best Management Practices.** All areas within the treatment facility, which encompasses approximately 2.5 acres, drain to the storm drain percolation pond, located just west of the headworks. If the percolation pond is unable to accommodate the runoff in a severe storm event, the storm drain pump station, which is controlled by a level switch, automatically pumps the drainage to one of the Discharger's emergency storage ponds (Pond 2 in the old treatment facility), where it either evaporates or is pumped back to the treatment plant headworks. The State-wide General Storm Water Permit (State Water Board Order No. 97-03-DWQ) does not require facilities to obtain coverage if storm water is captured and treated and/or disposed of with the facility's NPDES permitted process

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wastewater or if storm water is disposed of to evaporation ponds, percolation ponds, or combined sewer systems. Therefore, coverage under the General Storm Water Permit is not required. However, this Order requires the Discharger to develop Best Management Practices (BMPs) in order to ensure that discharges of storm water from the Facility to surface waters do not occur. The Discharger shall annually inspect and maintain storm water BMPs, and report these activities to the Regional Water Board.

7. **Compliance Schedules**

There are no compliance schedules in this Order.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit and a Master Reclamation Permit for the City of Healdsburg Water Reclamation Facility. 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 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. Notification was provided through the following posting on the Regional Water Board's Internet site at: http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml and through publication in the Press Democrat on **August 16, 2010 and September 17, 2010.**

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.

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To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by 5:00 p.m. on **September 17, 2010**.

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:

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Date: October 28, 2010
Time: 8:30 a.m.
Location: Regional Water Board Office, Board Hearing Room
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

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 is http://www.waterboards.ca.gov/northcoast 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 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (707) 576-2220.

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.

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G. Additional Information

Requests for additional information or questions regarding this order should be directed to Cathleen Goodwin at cgoodwin@waterboards.ca.gov or (707) 576-2687.

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ATTACHMENT F-1

			Step 2	Step 3				Step 5					Final Result	
CTR No.	Constituent name	C[1] (µg/L)	Effluent Data Available (Y/N)?	Are all data points ND[2] (Y/N)	If all data points ND, enter the MDL[3] (µg/L)	Enter the pollutant effluent detected maxi conc (µg/L)	Pollutant Concentration[4]	B Available (Y/N)?	Are all B data points ND (Y/N)?	If all data points ND, enter the MDL (µg/L)	Enter the pollutant B detected max conc (µg/L)	If all B is ND, is MDL>C?	RPA Result	Reason[5]
1	Antimony	6	Y	Y	1		1	Y	Y	1		N	**No**	Ud;MEC<C & B is ND
2	Arsenic	50	Y	N		0.78	0.78	Y	N		5		**No**	MEC<C & B<C
3	Beryllium	4	Y	Y	0.3		0.3	Y	Y	0.3		N	**No**	Ud;MEC<C & B is ND
4	Cadmium	2.2	Y	Y	0.4		0.4	Y	Y	0.4		N	**No**	Ud;MEC<C & B is ND
5a	Chromium (III)	183	Y	Y	2		2	N					**No**	Ud;MEC<C & B is ND
5b	Chromium (VI)	11	Y	Y	5		5	Y	Y	5		N	**No**	Ud;MEC<C & B is ND
6	Copper	8.2	Y	N		11	11	Y	N		2.8		**Yes**	MEC>C
7	Lead	2.6	Y	N		1.3	1.3	Y	N		0.8		**No**	B>C, but detected in effluent
8	Mercury	0.050	Y	Y	0.2			Y	Y	0.2		Y	**No**	UD; effluent data and B are ND
9	Nickel	46	Y	Y	2		2	Y	N		6.9		**No**	MEC<C & B<C
10	Selenium	5.0	Y	Y	1		1	Y	Y	1		N	**No**	Ud;MEC<C & B is ND
11	Silver	3.1	Y	Y	3		3	Y	Y	3		N	**No**	Ud;MEC<C & B is ND
12	Thallium	1.7	Y	N		0.5	0.5	Y	Y	0.3		N	**No**	Ud;MEC<C & B is ND
13	Zinc	105	Y	N		78	78	Y	N		6.7		**No**	MEC<C & B<C
14	Cyanide	5.2	N					N					**Ud**	no effluent data & no B
15	Asbestos	7.0	N					N					**Ud**	no effluent data & no B
16	2,3,7,8 TCDD	1.3E-08	N					N					**Ud**	no effluent data & no B
17	Acrolein	320	Y	Y	0.62		0.62	Y	Y	0.62		N	**No**	Ud;MEC<C & B is ND
18	Acrylonitrile	0.06	Y	Y	0.21			Y	Y	0.21		Y	**No**	UD; effluent data and B are ND
19	Benzene	1.0	Y	Y	0.23		0.23	Y	Y	0.23		N	**No**	Ud;MEC<C & B is ND
20	Bromoform	4.3	Y	Y	0.39		0.39	Y	Y	0.39		N	**No**	Ud;MEC<C & B is ND
21	Carbon Tetrachloride	0.25	Y	Y	0.3			Y	Y	0.3		Y	**No**	UD; effluent data and B are ND
22	Chlorobenzene	70	Y	Y	0.41		0.41	Y	Y	0.41		N	**No**	Ud;MEC<C & B is ND
23	Chlorodibromomethane	0.40	Y	Y	0.47			Y	Y	0.47		Y	**No**	UD; effluent data and B are ND
24	Chloroethane	No Criteria	Y	Y	0.25		No Criteria	Y	Y	0.25		N	**Uo**	No Criteria
25	2-Chloroethylvinyl ether	No Criteria	Y	Y	0.93		No Criteria	Y	Y	0.93		N	**Uo**	No Criteria
26	Chloroform	No Criteria	Y	N		0.68	No Criteria	Y	Y	0.41		N	**Uo**	No Criteria

1 C = the lowest (i.e., most stringent) water quality criterion.
2 ND = non-detect
3 MDL = minimum detection limit
4 Maximum effluent concentration (MEC) is the maximum detected effluent concentration. If all data points are non-detect and the MDL is less than C, then the MEC equals the MDL.
5 UD = undetermined

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CTR No.	Constituent name	C[1] (µg/L)	Step 2	Step 3				Step 5					Final Result	
			Effluent Data Available (Y/N)?	Are all data points ND[2] (Y/N)	If all data points ND, enter the MDL[3] (µg/L)	Enter the pollutant effluent detected maxi conc (µg/L)	Pollutant Concentration[4]	B Available (Y/N)?	Are all B data points ND (Y/N)?	If all data points ND, enter the MDL (µg/L)	Enter the pollutant B detected max conc (µg/L)	If all B is ND, is MDL>C?	RPA Result	Reason[5]
27	Dichlorobromomethane	0.56	Y	Y	0.48		0.48	Y	Y	0.48		N	**No**	Ud;MEC<C & B is ND
28	1,1-Dichloroethane	5.0	Y	Y	0.43		0.43	Y	Y	0.43		N	**No**	Ud;MEC<C & B is ND
29	1,2-Dichloroethane	0.38	Y	Y	0.42			Y	Y	0.42		Y	**No**	UD; effluent data and B are ND
30	1,1-Dichloroethylene	0.057	Y	Y	0.14			Y	Y	0.14		Y	**No**	UD; effluent data and B are ND
31	1,2-Dichloropropane	0.52	Y	Y	0.24		0.24	Y	Y	0.24		N	**No**	Ud;MEC<C & B is ND
32	1,3-Dichloropropylene	0.50	Y	Y	0.21		0.21	Y	Y	0.21		N	**No**	Ud;MEC<C & B is ND
33	Ethylbenzene	300	Y	Y	0.44		0.44	Y	Y	0.44		N	**No**	Ud;MEC<C & B is ND
34	Methyl Bromide	48	Y	Y	0.27		0.27	Y	Y	0.27		N	**No**	Ud;MEC<C & B is ND
35	Methyl Chloride	No Criteria	Y	Y	0.45		No Criteria	Y	Y	0.45		N	**Uo**	No Criteria
36	Methylene Chloride	4.7	Y	Y	0.17		0.17	Y	Y	0.17		N	**No**	Ud;MEC<C & B is ND
37	1,1,2,2-Tetrachloroethane	0.17	Y	Y	0.17			Y	Y	0.17		N	**No**	UD; effluent data and B are ND
38	Tetrachloroethylene	0.80	Y	Y	0.33		0.33	Y	Y	0.33		N	**No**	Ud;MEC<C & B is ND
39	Toluene	150	Y	Y	0.27		0.27	Y	Y	0.27		N	**No**	Ud;MEC<C & B is ND
40	1,2-Trans-Dichloroethylene	10	Y	Y	0.48		0.48	Y	Y	0.48		N	**No**	Ud;MEC<C & B is ND
41	1,1,1-Trichloroethane	200	Y	Y	0.36		0.36	Y	Y	0.36		N	**No**	Ud;MEC<C & B is ND
42	1,1,2-Trichloroethane	0.60	Y	Y	0.49		0.49	Y	Y	0.49		N	**No**	Ud;MEC<C & B is ND
43	Trichloroethylene	2.7	Y	Y	0.47		0.47	Y	Y	0.47		N	**No**	Ud;MEC<C & B is ND
44	Vinyl Chloride	0.50	Y	Y	0.32		0.32	Y	Y	0.32		N	**No**	Ud;MEC<C & B is ND
45	2-Chlorophenol	120	Y	Y	0.66		0.66	Y	Y	0.66		N	**No**	Ud;MEC<C & B is ND
46	2,4-Dichlorophenol	93	Y	Y	0.66		0.66	Y	Y	0.66		N	**No**	Ud;MEC<C & B is ND
47	2,4-Dimethylphenol	540	Y	Y	1.2		1.2	Y	Y	1.2		N	**No**	Ud;MEC<C & B is ND
48	2-Methyl- 4,6-Dinitrophenol	13	Y	Y	0.75		0.75	Y	Y	0.75		N	**No**	Ud;MEC<C & B is ND
49	2,4-Dinitrophenol	70	Y	Y	1.3		1.3	Y	Y	1.3		N	**No**	Ud;MEC<C & B is ND
50	2-Nitrophenol	No Criteria	Y	Y	0.9		No Criteria	Y	Y	0.9		N	**Uo**	No Criteria
51	4-Nitrophenol	No Criteria	Y	Y	0.99		No Criteria	Y	Y	0.99		N	**Uo**	No Criteria
52	3-Methyl 4-Chlorophenol	No Criteria	Y	Y	0.58		No Criteria	Y	Y	0.58		N	**Uo**	No Criteria
53	Pentachlorophenol	0.28	Y	Y	1.4			Y	Y	1.4		Y	**No**	UD; effluent data and B are ND
54	Phenol	21,000	Y	Y	0.46		0.46	Y	Y	0.46		N	**No**	Ud;MEC<C & B is ND
55	2,4,6-Trichlorophenol	2.1	Y	Y	0.74		0.74	Y	Y	0.74		N	**No**	Ud;MEC<C & B is ND
56	Acenaphthene	1,200	Y	Y	0.57		0.57	Y	Y	0.57		N	**No**	Ud;MEC<C & B is ND
57	Acenaphthylene	No Criteria	Y	Y	0.19		No Criteria	Y	Y	0.19		N	**Uo**	No Criteria
58	Anthracene	9,600	Y	Y	0.19		0.19	Y	Y	0.19		N	**No**	Ud;MEC<C & B is ND
59	Benzidine	0.00012	Y	Y	3.4			Y	Y	3.4		Y	**No**	UD; effluent data and B are ND
60	Benzo(a)Anthracene	0.0044	Y	Y	0.19			Y	Y	0.19		Y	**No**	UD; effluent data and B are ND
61	Benzo(a)Pyrene	0.0044	Y	Y	0.19			Y	Y	0.19		Y	**No**	UD; effluent data and B are ND
62	Benzo(b)Fluoranthene	0.0044	Y	Y	0.19			Y	Y	0.19		Y	**No**	UD; effluent data and B are ND
63	Benzo(ghi)Perylene	No Criteria	Y	Y	0.19		No Criteria	Y	Y	0.19		N	**Uo**	No Criteria
64	Benzo(k)Fluoranthene	0.0044	Y	Y	0.19			Y	Y	0.19		Y	**No**	UD; effluent data and B are ND
65	Bis(2-Chloroethoxy)Methane	No Criteria	Y	Y	0.81		No Criteria	Y	Y	0.81		N	**Uo**	No Criteria

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CTR No.	Constituent name	C[1] (µg/L)	Step 2	Step 3				Step 5					Final Result	
			Effluent Data Available (Y/N)?	Are all data points ND[2] (Y/N)	If all data points ND, enter the MDL[3] (µg/L)	Enter the pollutant effluent detected maxi conc (µg/L)	Pollutant Concentration[4]	B Available (Y/N)?	Are all B data points ND (Y/N)?	If all data points ND, enter the MDL (µg/L)	Enter the pollutant B detected max conc (µg/L)	If all B is ND, is MDL>C?	RPA Result	Reason[5]
66	Bis(2-Chloroethyl)Ether	0.031	Y	Y	0.14			Y	Y	0.14		Y	**No**	UD; effluent data and B are ND
67	Bis(2-Chloroisopropyl)Ether	1,400	Y	Y	0.41		0.41	Y	Y	0.41		N	**No**	Ud;MEC<C & B is ND
68	Bis(2-Ethylhexyl)Phthalate	1.8	Y	Y	0.83		0.83	Y	Y	0.83		N	**No**	Ud;MEC<C & B is ND
69	4-Bromophenyl Phenyl Ether	No Criteria	Y	Y	0.43		No Criteria	Y	Y	0.43		N	**Uo**	No Criteria
70	Butylbenzyl Phthalate	3,000	Y	Y	0.64		0.64	Y	Y	0.64		N	**No**	Ud;MEC<C & B is ND
71	2-Chloronaphthalene	1,700	Y	Y	0.57		0.57	Y	Y	0.57		N	**No**	Ud;MEC<C & B is ND
72	4-Chlorophenyl Phenyl Ether	No Criteria	Y	Y	0.93		No Criteria	Y	Y	0.93		N	**Uo**	No Criteria
73	Chrysene	0.0044	Y	Y	0.76			Y	Y	0.19		Y	**No**	UD; effluent data and B are ND
74	Dibenzo(a,h)Anthracene	0.0044	Y	Y	0.19			Y	Y	0.19		Y	**No**	UD; effluent data and B are ND
75	1,2-Dichlorobenzene	600	Y	Y	0.45		0.45	Y	Y	0.45		N	**No**	Ud;MEC<C & B is ND
76	1,3-Dichlorobenzene	400	Y	Y	0.47		0.47	Y	Y	0.47		N	**No**	Ud;MEC<C & B is ND
77	1,4-Dichlorobenzene	5.0	Y	Y	0.48		0.48	Y	Y	0.48		N	**No**	Ud;MEC<C & B is ND
78	3,3 Dichlorobenzidine	0.040	Y	Y	2			Y	Y	2		Y	**No**	UD; effluent data and B are ND
79	Diethyl Phthalate	23,000	Y	Y	0.86		0.86	Y	Y	0.86		N	**No**	Ud;MEC<C & B is ND
80	Dimethyl Phthalate	313,000	Y	Y	0.68		0.68	Y	Y	0.68		N	**No**	Ud;MEC<C & B is ND
81	Di-n-Butyl Phthalate	2,700	Y	Y	0.91		0.91	Y	Y	0.91		N	**No**	Ud;MEC<C & B is ND
82	2,4-Dinitrotoluene	0.110	Y	Y	0.68			Y	Y	0.68		Y	**No**	UD; effluent data and B are ND
83	2,6-Dinitrotoluene	No Criteria	Y	Y	0.54		No Criteria	Y	Y	0.54		N	**Uo**	No Criteria
84	Di-n-Octyl Phthalate	No Criteria	Y	Y	0.65		No Criteria	Y	Y	0.65		N	**Uo**	No Criteria
85	1,2-Diphenylhydrazine	0.040	Y	Y	0.33			Y	Y	0.33		Y	**No**	UD; effluent data and B are ND
86	Fluoranthene	300	Y	Y	0.76		0.76	Y	Y	0.76		N	**No**	Ud;MEC<C & B is ND
87	Fluorene	1,300	Y	Y	0.81		0.81	Y	Y	0.19		N	**No**	Ud;MEC<C & B is ND
88	Hexachlorobenzene	0.00075	Y	Y	0.89			Y	Y	0.89		Y	**No**	UD; effluent data and B are ND
89	Hexachlorobutadiene	0.44	Y	Y	0.84			Y	Y	0.84		Y	**No**	UD; effluent data and B are ND
90	Hexachlorocyclopentadiene	50	Y	Y	0.45		0.45	Y	Y	0.45		N	**No**	Ud;MEC<C & B is ND
91	Hexachloroethane	1.9	Y	Y	0.58		0.58	Y	Y	0.58		N	**No**	Ud;MEC<C & B is ND
92	Indeno(1,2,3-cd)Pyrene	0.0044	Y	Y	0.19			Y	Y	0.19		Y	**No**	UD; effluent data and B are ND
93	Isophorone	8.4	Y	Y	0.81		0.81	Y	Y	0.81		N	**No**	Ud;MEC<C & B is ND
94	Naphthalene	No Criteria	Y	Y	0.66		No Criteria	Y	Y	0.66		N	**Uo**	No Criteria
95	Nitrobenzene	17	Y	Y	0.74		0.74	Y	Y	0.74		N	**No**	Ud;MEC<C & B is ND
96	N-Nitrosodimethylamine	0.00069	Y	Y	1.1			Y	Y	1.1		Y	**No**	UD; effluent data and B are ND
97	N-Nitrosodi-n-Propylamine	0.0050	Y	Y	0.85			Y	Y	0.85		Y	**No**	UD; effluent data and B are ND
98	N-Nitrosodiphenylamine	5.0	Y	Y	0.9		0.9	Y	Y	0.9		N	**No**	Ud;MEC<C & B is ND
99	Phenanthrene	No Criteria	Y	Y	0.19		No Criteria	Y	Y	0.19		N	**Uo**	No Criteria
100	Pyrene	960	Y	Y	0.45		0.45	Y	Y	0.19		N	**No**	Ud;MEC<C & B is ND
101	1,2,4-Trichlorobenzene	5.0	Y	Y	0.59		0.59	Y	Y	0.59		N	**No**	Ud;MEC<C & B is ND
102	Aldrin	0.00013	Y	Y	0.0026			Y	Y	0.026		Y	**No**	UD; effluent data and B are ND
103	alpha-BHC	0.0039	Y	Y	0.0022		0.0022	Y	Y	0.022		Y	**No**	Ud;MEC<C & B is ND
104	beta-BHC	0.014	Y	Y	0.0022		0.0022	Y	Y	0.022		Y	**No**	Ud;MEC<C & B is ND

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CTR No.	Constituent name	C[1] (µg/L)	Step 2	Step 3				Step 5					Final Result	
			Effluent Data Available (Y/N)?	Are all data points ND[2] (Y/N)	If all data points ND, enter the MDL[3] (µg/L)	Enter the pollutant effluent detected maxi conc (µg/L)	Pollutant Concentration[4]	B Available (Y/N)?	Are all B data points ND (Y/N)?	If all data points ND, enter the MDL (µg/L)	Enter the pollutant B detected max conc (µg/L)	If all B is ND, is MDL>C?	RPA Result	Reason[5]
105	gamma-BHC	0.019	Y	Y	0.0023		0.0023	Y	Y	0.023		Y	**No**	Ud;MEC<C & B is ND
106	delta-BHC	No Criteria	Y	Y	0.0032		No Criteria	Y	Y	0.032		N	**Uo**	No Criteria
107	Chlordane	0.00057	Y	Y	0.035			Y	Y	0.35		Y	**No**	UD; effluent data and B are ND
108	4,4'-DDT	0.00059	Y	Y	0.0031			Y	Y	0.031		Y	**No**	UD; effluent data and B are ND
109	4,4'-DDE	0.00059	Y	Y	0.0019			Y	Y	0.019		Y	**No**	UD; effluent data and B are ND
110	4,4'-DDD	0.00083	Y	Y	0.0018			Y	Y	0.018		Y	**No**	UD; effluent data and B are ND
111	Dieldrin	0.00014	Y	Y	0.002			Y	Y	0.02		Y	**No**	UD; effluent data and B are ND
112	alpha-Endosulfan	0.056	Y	Y	0.0011		0.0011	Y	Y	0.011		N	**No**	Ud;MEC<C & B is ND
113	beta-Endolsulfan	0.056	Y	Y	0.0035		0.0035	Y	Y	0.035		N	**No**	Ud;MEC<C & B is ND
114	Endosulfan Sulfate	110	Y	Y	0.0035		0.0035	Y	Y	0.035		N	**No**	Ud;MEC<C & B is ND
115	Endrin	0.036	Y	Y	0.0027		0.0027	Y	Y	0.027		N	**No**	Ud;MEC<C & B is ND
116	Endrin Aldehyde	0.76	Y	Y	0.0016		0.0016	Y	Y	0.016		N	**No**	Ud;MEC<C & B is ND
117	Heptachlor	0.00021	Y	Y	0.0028			Y	Y	0.028		Y	**No**	UD; effluent data and B are ND
118	Heptachlor Epoxide	0.00010	Y	Y	0.0025			Y	Y	0.025		Y	**No**	UD; effluent data and B are ND
119-125	PCBs sum	0.00017	Y	Y	0.02			Y	Y	0.2		Y	**No**	UD; effluent data and B are ND
126	Toxaphene	0.00020	Y	Y	0.21			Y	Y	2.1		Y	**No**	UD; effluent data and B are ND
	Nitrate	10	Y	N		5	5	N					**No**	MEC<C
	Phosphorus (as P)	No Criteria	Y	N		5.4	No Criteria	N					**Uo**	No Criteria

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ATTACHMENT G – WATER RECLAMATION REQUIREMENTS AND PROVISIONS

The Discharger's reclamation system includes urban and agricultural use sites. The following Water Reclamation Findings, Water Reclamation Requirements and Reclamation Provisions apply to all recycled water use sites, unless specifically identified as applying to just urban [Urban] or just vineyards with micro-irrigation[1] [Vineyard/Drip].

A. Water Reclamation Findings

1. In 1977, the State Water Board adopted Resolution No. 77-1, titled "Policy with Respect to Water Reclamation in California" (Resolution No. 77-1). Resolution No. 77-1, in part, encourages the use of recycled water in the state.

2. On February 3, 2009, the State Water Board adopted Resolution No. 2009-0011, titled "Adoption of a Policy for the Water Quality Control of Recycled Water" (Recycled Water Policy). The goal of the Recycled Water Policy is to increase the use of recycled water from municipal wastewater sources that meets the definition in Water Code section 13050(n). In accordance with the Recycled Water Policy, activities involving recycled water use that could impact high quality waters are required to implement best practicable treatment or control of the discharge necessary to ensure that pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

3. Streamlined Permitting

   a. Eligibility

      The irrigation elements of the Discharger's proposed reclamation project may meet the criteria for streamlined permitting (Paragraph 7(c) of the Recycled Water Policy) for the following reasons:

i. The reclamation project complies with title 22 regulations identified in Finding 4, below.

ii. The proposed irrigation uses will not exceed agronomic rates and will not occur when soils are saturated. An operations and management plan will be developed describing how appropriate irrigation amounts and rates will be applied and may include, but not be limited to, proper design and maintenance of irrigation systems, accurate monitoring of the amount of water delivered, developing water budgets for use areas,

[1] Micro-irrigation refers to low-pressure irrigation systems that spray, mist, sprinkle or drip the recycled water onto the soil surface very near the plant or below the soil surface directly into the plant root zone.

providing supervisor training, and installing smart controllers. An operations and management plan may be developed to cover multiple sites.

iii. A salt and nutrient management plan has not been prepared for the groundwater basin underlying the recycled water use areas. This Order includes a requirement that the Discharger must comply with any future salt and nutrient management plan adopted by the Regional Water Board.

iv. The Discharger will communicate to users the nutrient levels in the recycled water so that users can appropriately evaluate fertilizer needs.

b. Streamlined Permit Requirements

According to Paragraph 7(b)(4) of the Recycled Water Policy, irrigation projects that qualify for streamlined permitting are not required to conduct project-specific receiving water and groundwater monitoring unless otherwise required by an applicable salt and nutrient management plan. This Order requires the Discharger to comply with any future salt and nutrient management plan adopted by the Regional Water Board. Until a salt and nutrient management plan is adopted, groundwater monitoring could be required as needed for development of the salt and nutrient management plan or if necessary to assess impacts of effluent disposal to the reclamation system.

4. The California Department of Public Health (CDPH) (formerly California Department of Health Services or DHS) has established statewide reclamation criteria in Chapter 3, Division 4, title 22, CCR, sections 60301 through 60355 (hereinafter title 22) for the use of recycled water for irrigation, impoundments, cooling water, and other purposes. The CDPH has also established Guidelines for Use of Reclaimed Water. This Order (Order No. R1-2010-0034, including Attachment G) implements the title 22 recycled water criteria.

5. In 1996, the State Water Board and CDPH set forth principles, procedures, and agreements to which the agencies committed themselves, relative to the use of recycled water in California, in a document titled Memorandum of Agreement between the Department of Health Services and the State Water Resources Control Board on the Use of Reclaimed Water (MOA). This Order is consistent with the MOA.

6. This Order implements section 13523.1 of the California Water Code (CWC) which authorizes issuance of a Master Reclamation Permit to suppliers or distributors, or both, of recycled water in lieu of issuing individual water reclamation requirements to each recycled water user.

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7. The Discharger is required to develop and keep updated, an Engineering Report for the use of recycled water as required by section 60323 of title 22 as required by Water Reclamation Provision D.2 of this Attachment.

8. This Order requires the Discharger to minimize the potential for surface runoff of recycled water, but recognizes that even with diligent implementation of BMPs, incidental runoff events may occur on occasion. Incidental runoff is defined as unintended small amounts (volume) of runoff from recycled water use areas where agronomic rates and appropriate best management practices are being implemented. Examples of incidental runoff include unintended, minimal over-spray from sprinklers that escapes the recycled water use area or accidental breakage of a sprinkler head on a properly maintained irrigation system. Water leaving a recycled water use area is not considered incidental if it is part of the facility design, if it is due to excessive application, if it is due to intentional overflow or application, or if it is due to negligence. Incidental runoff events are typically infrequent, low volume, accidental, not due to a pattern of neglect or lack of oversight, and are promptly addressed. The Regional Water Board recognizes that such minor violations are unavoidable and present a low risk to water quality. All runoff incidents, including incidental runoff, shall be summarized in the Discharger's quarterly recycled water monitoring report. Enforcement action shall be considered for runoff that is not incidental, inadequate response by the Discharger to incidental runoff incidents, repeated runoff incidents that were within the Discharger's control, where incidental runoff directly causes violations of water quality objectives, incidents that create a condition of pollution or nuisance, and discharges that reach surface water in violation of Discharge Prohibitions in section III of the Order and/or Water Reclamation Requirements in Attachment G, section B.4 or B.6.

9. This Order authorizes the Discharger to reuse treated municipal wastewater that complies with effluent limitations contained in section IV of the Order for uses that have been addressed in a title 22 Engineering Report and for which recycled water user agreements have been negotiated.

10. This Order does not authorize the use of recycled water for frost control of vineyards.

11. Effluent Limitations included in Order No. R1-2010-0034 will assure compliance with requirements contained in title 22 and the CDPH (DHS)/State Water Board MOA.

12. The Discharger must demonstrate that the storage and use of recycled water complies with the requirements of the California Water Code and title 27 of the CCR.

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13. The Regional Water Board consulted with CDPH, the Sonoma County Health Department, and the local Mosquito Abatement District and considered any recommendations regarding public health aspects for this use of recycled water.

B. Water Reclamation Requirements

1. The use of recycled water shall not result in unreasonable waste of water. Recycled water shall not be applied at greater than hydraulic agronomic rates.

2. The use of recycled water shall not create a condition of pollution or nuisance as defined in CWC section 13050(m).

3. All recycled water provided pursuant to this Order shall be treated and managed in conformance with all applicable provisions of the Recycled Water Policy.

4. Best management practices that are protective of groundwater and surface water quality and human health shall be developed and implemented to achieve a efficient irrigation system. At a minimum, the Discharger shall implement the required BMPs identified in Water Reclamation Requirement B.11 and implement other BMPs as appropriate.

5. The Discharger shall be responsible for ensuring that recycled water meets the quality standards of section IV.C of this Order and that all users of recycled water comply with the terms and conditions of this Order and with any rules, ordinances, or regulations adopted by the Discharger.

6. The Discharger shall discontinue delivery of recycled water during any period in which there is reason to believe that the requirements for use as specified in this Order or the requirements of CDPH or USEPA are not being met. The delivery of recycled water shall not resume until all conditions have been corrected.

7. The Discharger shall notify recycled water users if recycled water that does not meet the recycled water quality requirements of this Permit is released into the reclamation system.

8. The Discharger shall require each recycled water user to report all violations of recycled water regulations identified in this Order, including runoff incidents. All reported violations of recycled water regulations shall be included in the Discharger's quarterly recycled water monitoring report, including incidental runoff events that the Discharger is aware of.

9. Application of recycled water to use areas shall not exceed the nitrogen or hydraulic loading reasonably necessary to satisfy the nitrogen or water uptake needs of the use area considering plant, soil, climate, and nutrient demand (i.e., generally accepted agronomic rates).

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a. Hydraulic loading to any individual recycled water use site shall be at reasonable agronomic rates designed to minimize percolation of wastewater constituents below the evaporative and root zone.

b. The seasonal nutritive loading of use areas, including the nutritive value of organic and chemical fertilizers and of the recycled water, shall not exceed the nutritive demand of the landscape or vegetation receiving the recycled water. The Discharger must communicate to recycled water users the nutrient levels in the recycled water at least monthly during the irrigation season so that the recycled water users can appropriately evaluate fertilizer needs prior to application of fertilizers. If the Discharger demonstrates that the recycled water nutrient concentrations are low and consistent from month to month, then the Discharger may reduce the frequency of notifications upon approval by the Regional Water Board Executive Officer.

10. Recycled water shall not be applied on water-saturated or frozen ground or during periods of precipitation such that runoff is induced.

11. Recycled water shall not be allowed to escape the recycled use area(s) in the form of surface runoff. [CCR title 22, section 60310(e)] However, incidental runoff of recycled water, such as unintended, minimal over-spray from sprinklers that escapes the recycled water use area, is not a violation of this Order. Practices and strategies to prevent the occurrence of runoff shall include, where appropriate, but not be limited to:

    a. All new recycled water use sites shall include a 100 foot setback to all surface waters or provide written documentation describing why a 100 foot setback is infeasibile and the best management practices that will be implemented in order to prevent or minimize the potential for runoff discharging to surface water;

    b. Urban recycled water use sites shall maintain appropriate setbacks to the street gutter and other inlets to the stormdrain system based on site conditions or implement alternative means to prevent the discharge of runoff to surface waters. [Urban]

    c. Implementation of an Operations and Maintenance Plan that provides for detection of leaks (for example, from sprinkler heads), and correction within 72 hours of learning of the runoff, or prior to the release of 1,000 gallons, whichever comes first.

    d. Proper design and aim of sprinkler heads; [Urban/Other Agriculture]

    e. Proper design and operation of micro-irrigation system; [Vineyard/Drip]

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f. Refraining from application during precipitation events;

g. Apply recycled water at an agronomic rate that does not exceed the water or nutrient demand of the crop or vegetation being irrigated;

h. Use of repeat start times and multiple water days to increase irrigation efficiency and reduce runoff potential;

i. Maintenance of recycled water infrastructure (pipelines, pumps, etc) to prevent and minimize breakage and leaks; and

j. Adequate protection of all recycled water reservoirs and ponds against overflow, structural damage, or a reduction in efficiency resulting from a 25-year, 24-hour storm or flood event or greater, and notification of the Regional Water Board Executive Officer, if a discharge occurs.

12. Use areas that are spray irrigated and allow public access shall be irrigated during periods of minimal use. Consideration shall be given to allow maximum drying time prior to subsequent public use. [Urban]

13. Direct or windblown spray, mist, or runoff from irrigation areas shall not enter dwellings, designated outdoor eating areas, or food handling facilities, roadways, or any other area where the public would be accidentally exposed to recycled water. [CCR title 22, section 60310(e)(3)] [Urban]

14. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff. [CCR title 22, section 60310(e)(3)] [Urban]

15. All recycled water equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities.

16. The Discharger shall implement the requirements of the California Health and Safety Code (CHSC), section 116815 regarding the installation of purple pipe. CHSC section 116815 requires that "all pipes installed above or below the ground, on or after June 1, 1993, that are designed to carry recycled water, shall be colored purple or distinctively wrapped with purple tape." Section 116815 also contains exemptions that apply to municipal facilities that have established a labeling or marking system for recycled water used on their premises and for water delivered for agricultural use. The Discharger shall document compliance with this requirement on an annual basis in its annual monitoring report. The Discharger shall continue to implement the requirements of CHSC section 116815 during the term of this Order. [Urban]

17. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs. Only quick

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couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access. [CCR title 22, section 60310(l)] [Urban]

18. Cross-connections shall not occur between any recycled water system and any separate system conveying potable water. [22 CCR, section 60310(h)] Supplementing recycled water with potable water shall not be allowed except through air gap separation [CCR title 22, section 30615]

19. Disinfected tertiary recycled water shall not be irrigated within 50 feet of any domestic water supply well or domestic water supply surface intake, unless the technical requirements specified in CCR title 22, section 60310(a) have been met and approved by CDPH.

20. The use of recycled water shall not cause degradation of any water supply.

21. Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitoes and other disease vectors, and to avoid creation of a public nuisance or health hazard. Irrigation water shall infiltrate completely within a 24-hour period.

22. All areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide that include the following wording in English and Spanish: 'RECYCLED WATER – DO NOT DRINK'. [CCR title 22, section 60310(g)] Each sign shall display an international symbol similar to that shown in CCR title 22, Figure 60310-A. These warning signs shall be posted at least every 500 feet with a minimum of a sign at each corner and access road. CDPH may accept alternative signage and wording, or an educational program, provided that applicant demonstrates to CDPH that the alternative approach will assure an equivalent degree of public notification.

23. DHS (now CDPH) Guidance Memo No. 2003-02: Guidance Criteria for the Separation of Water Mains and Non-Potable Pipelines provides guidance for the separation of new potable water mains and recycled water pipelines which shall be implemented as follows: [Urban]

    a. There shall be at least a four-foot horizontal separation between all pipelines transporting recycled water and those transporting disinfected tertiary recycled water and new potable water mains.

    b. There shall be at least a one-foot vertical separation at crossings between all pipelines transporting recycled water and potable water mains, with the potable water main above the recycled water pipeline, unless approved by the CDPH.

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c. All portions of the recycled water pipeline that cross under a potable water main shall be enclosed in a continuous sleeve.

d. Recycled water pipelines shall not be installed in the same trench as new water mains.

e. Where site conditions make it impossible to comply with the above conditions, any variation shall be approved by CDPH and comply with alternative construction criteria for separation between sanitary sewers and potable water mains as described in the CDPH document titled "Criteria for Separation of Water Mains and Sanitary Sewers", treating the recycled water line as if a sanitary sewer.

24. A minimum freeboard, consistent with pond design, but not less than two feet, shall be maintained under normal operating conditions in any reservoir or pond containing recycled water. When extraordinary operating conditions necessitate a freeboard of less than two feet, the Discharger will document the variance in the monthly self-monitoring report. The report will include an explanation of the circumstances under which the variance is required, the estimated minimum freeboard during the extraordinary period, and any permit violations occurring as a result of the variance.

25. The use of recycled water for dust suppression shall only occur during periods of dry weather, shall be limited to periods of short duration, and shall be limited to areas under the control of the Discharger.

26. The Discharger shall comply with any salt and nutrient management plan that is adopted by the Regional Water Board in the future.

C. Water Reclamation Technical Report Requirements

1. General Technical Report Requirements

a. Programmatic and Site-Specific Technical Reports, and Public Notice Requirements

i. Prior to initiating delivery of recycled water to a specific use category (e.g., vineyards with micro-irrigation, vineyard with spray irrigation, pasture with spray irrigation, urban, etc.), the Discharger shall submit for Regional Water Board Executive Officer review and approval, a programmatic technical report(s) that provide operation and management details of how agronomic rates will be achieved and best management practices to protect surface and groundwater quality will be required. Details regarding programmatic technical report requirements are further described below in sections C.2 and C.3.

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These technical reports shall be prepared by a California registered or certified professional(s) with demonstrated expertise in irrigation management, hydrogeology and pollution investigation and prevention (e.g., engineer, geologist, hydrogeologist, hydrologist, etc)[2]

The Discharger may opt to combine the required programmatic and site-specific information (see Water Reclamation Technical Report Requirement C.1.a.iii, below) into a single report, in which case the entire document is subject to the public notice requirements identified in Water Reclamation Technical Report Requirement C.1.a.ii, below.

ii. After preliminary review for completeness and adequacy for water quality protection, each programmatic technical report shall be subject to a minimum 30-day public notice period. Because proposed recycled water use sites must be addressed in a certified CEQA document, which includes a process for public comment, the Regional Water Board will limit public comment on the information provided in the technical report to comments on the proposed management practices and hydraulic and nutrient agronomic rates proposed by the Discharger that are related to protection of surface water and groundwater quality and beneficial uses thereof. The Regional Water Board Executive Officer will place a public notice on the Regional Water Board's website. At the end of the 30-day public notice period, the Executive Officer shall provide written notification to the Discharger within 30 days either providing authorization of the recycled water use or identifying any substantial water quality concerns for which the Discharger must provide additional information..

iii. The Discharger shall submit site-specific technical reports that provide specific details for each use site prior to reclaiming water at the new location. The site-specific reports are not subject to the public comment period, unless the Discharger opts to submit a single report addressing programmatic and site-specific requirements (See Water Reclamation Technical Report Requirement C.1.a.i, above). The site-specific reports shall demonstrate that the operation and management of each site is consistent with the approved programmatic technical report. The Executive Officer shall provide written notification to the Discharger within 30 days of receipt of each site-specific report. If the Executive Officer does not notify the Discharger within 30 days of receipt of the site-specific report, the Discharger may proceed with the use.

b. **Training Program Programmatic Technical Report**

[2] All technical reports must contain a statement of the qualifications of the responsible registered professional(s) and bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional for the work.

The Discharger shall submit a programmatic technical report that identifies a training program that includes periodic education for individuals that will manage any portion of the recycled water system[3]. This programmatic technical report is not subject to the public notice requirements identified in Water Reclamation Requirement C.1.a.ii, above. At a minimum, the Training Program Technical Report shall include the following elements:

i. A training program that covers the following elements:

(a) The safe and efficient operation and maintenance of recycled water use facilities, including proper installation, operation and maintenance of irrigation systems;

(b) Prevention of runoff from recycled water use sites;

(c) Matching irrigation rates to the water requirements of the landscape, and not applying recycled water when the soil is saturated;

(d) Means of ensuring that recycled water and other supplemental nutrients (including fertilizers) are used appropriately. This should include a plan to train recycled water users how to take reasonable steps to prevent the over-application of nutrients, including training in how to calculate the need for supplemental nutrient application based on knowledge of the nutrient content of the City's recycled water;

(e) Review of applicable reclamation requirements and general responsibilities to ensure compliance with this Master Reclamation Permit;

(f) Review of BMPs identified as necessary to prevent potential hazards to public health and to protect the environment and how to properly implement those BMPs; and

(g) Prevention of cross-connections with potable water systems.

ii. A copy of an example duty statement for recycled water use supervisors.

iii. Identification of a means to verify that recycled water use supervisors have attended training regarding the safe and efficient operations, maintenance and management of recycled water use facilities.

c. **Other Technical Report Requirements**

[3] Training shall be provided for all persons involved in the operation and/or maintenance of the recycled water system including, but not limited to the Discharger's employees and irrigation managers and other employees that work for the owner of the recycled water use site(s).

i. Where unique, site-specific conditions exist, such as where recycled water is proposed to be used for irrigation over high transmissivity soils and over a shallow (5 feet or less) high quality groundwater aquifer, additional requirements may be required, including a special study to determine the appropriateness of recycled water use and development of appropriate best management practices and operations plans to ensure that recycled water is applied in a manner that is protective of groundwater. The special study may include groundwater monitoring, development of a detailed water balance and/or salt and nutrient management plan.

d. **Approved Recycled Water Use Sites**

i. Recycled water shall only be used on areas identified in the 2005 FEIR and in any future certified environmental document. All mitigation measures identified in the 2005 FEIR and in any future certified environmental document for the protection of water quality shall be implemented. The Discharger's certified FEIR identifies the high quality of treatment provided by its upgraded wastewater treatment plant and the use of agronomic rates for application of recycled water as two key mitigation measures to protect water quality. The final effluent contains low levels of nitrate and ammonia due to the biological nitrogen removal process. In addition, the ultraviolet light disinfection system prevents the production of trihalomethanes. The Discharger is required to identify additional mitigation measures and BMPs in programmatic and/or site-specific technical reports described in Water Reclamation Technical Report Requirements C.2 and C.3, below.

ii. Attachment G-1 to this Order provides a list of recycled water use sites that have been conditionally approved, pending submittal and approval of the programmatic and site-specific technical reports described herein and will be updated by the Regional Water Board Executive Officer as additional recycled water use sites are approved through this process in the future.

2. **Technical Report Requirements for Reclamation on Vineyards with Micro-Irrigation**

a. The Discharger shall submit a programmatic technical report(s) that describes an Agricultural Irrigation Operations and Management Plan for vineyards with micro-irrigation and similar hydrogeology and terrain. The programmatic technical report shall include the following:

i. Identification of the hydraulic and nutrient requirements of the grape crop considering and identifying soil characteristics (e.g., soil type, nutrient content,

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transmissivity, etc), land slope, depth to groundwater and proximity to surface water.

ii. A plan that demonstrates that recycled water will be applied at hydraulic and nutrient agronomic rates and that recycled water use will not result in discharges to surface waters, nor cause adverse impacts to groundwater;

iii. A menu of best management practices from which the recycled water user will select appropriate best management practices for specific sites to minimize the potential for runoff to surface waters to minimize impacts to groundwater.

iv. A plan for maintenance of equipment and emergency backup systems;

v. A plan for detection and correction of leaks;

vi. A description of minimum training requirements for person(s) responsible for managing use sites; and

vii. A sample recycled water user agreement.

b. The Discharger shall submit site-specific technical reports that include the following information for each use site:

i. Map(s) identifying site location(s) and topography, location of irrigation system(s) in relation to all surface waters and wells that are within 200 feet of the boundaries of the irrigation area(s), adjacent property boundaries, locations of structures and utilities that require protection from recycled water (e.g., eating facilities, drinking water fountains, etc).

ii. Site acreage;

iii. County Assessor Parcel number(s);

iv. Name and address of property owner and/or user;

v. Identification of the person(s) responsible for management of the recycled water use site and statement that this person meets minimum training requirements identified in the programmatic Agricultural Irrigation Operations and Management Plan;

vi. Proof of signed user agreements;

vii. Use site inspection schedule, including inspections that will be conducted by the Discharger and the use site owner; and

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viii. Demonstration that the volume of recycled water applied will not cause an exceedance of the hydraulic and nutrient agronomic rates identified in the programmatic technical report.

3. **Technical Report Requirements for Urban and Other Agricultural[4] Reclamation**

a. The Discharger shall submit a programmatic and site-specific technical report or technical reports for urban and other agricultural reclamation that clearly demonstrates that recycled water will be applied at hydraulic and nutrient agronomic rates and that recycled water use will not result in a discharge to surface waters or cause adverse impacts to groundwater. The technical report(s) shall contain the following information:

i. An Operations and Management Plan (O&M Plan). The O&M Plan may apply to multiple sites with similar characteristics such as crop, hydrogeology, and terrain, if it contains a sufficient level of detail to characterize each site and identify the practices that will be implemented to ensure that the use of recycled water occurs at appropriate hydraulic and nutrient agronomic rates and that management practices are incorporated to ensure irrigation efficiency and to minimize the potential for surface water runoff or percolation of nutrients, salts, or other constituents to groundwater. The O&M Plan shall contain the following elements:

(a) An Operations Plan. A detailed operations plan for the use areas including methods and procedures for implementation of regulations regarding recycled water use and maintenance of equipment and emergency backup systems to maintain compliance with the conditions of this Order and CDPH requirements (i.e., identification of BMPs implemented to achieve and maintain compliance).

(b) An Irrigation Management Plan. The Irrigation Management Plan shall include measures to ensure that the use of recycled water occurs at an appropriate hydraulic and nutrient agronomic rate and employs practices to ensure irrigation efficiency. The Irrigation Management Plan shall be applicable for the recycled water use site(s) served and shall account for the following:

(1) Soil characteristics (e.g., soil type, nutrient content, transmissivity, etc.);

(2) Depth to groundwater;

[4] Other agricultural reclamation includes irrigation on agricultural use sites that are not vineyards with micro-irrigation. Other agricultural reclamation may include, but not be limited to vineyards with spray irrigation, pastures with spray irrigation, etc.

(3) Recycled water characteristics (e.g., nutrients, including nitrogen and phosphorus content, specific ion toxicity, including chloride, boron, sodium, bicarbonate and other parameters)

(4) Identification of and general requirements of plant species being irrigated (e.g., seasonal water demand, climate, nutrient requirements) and whether the plant species are annual or perennial;

(5) Climatic conditions (e.g., precipitation, evapotranspiration rate, wind);

(6) Other supplemental nutrient additions (e.g., chemical fertilizers) generally used within the use area; and

(c) The Irrigation Management Plan shall include:

(1) Calculation of the amount of recycled water that can be agronomically applied to the use site (considering the factors identified above) and clear demonstration that the application of recycled water at the proposed volume, rate, and timing will not allow the discharge of recycled water to groundwater or surface water, nor cause degradation of groundwater that exceeds water quality objectives or impacts beneficial uses;

(2) A set of reasonably practicable measures to ensure compliance with the agronomic rate requirement, which may include the development of water budgets for the recycled water use site(s), tiered rate structures, the use of smart controllers, or other appropriate measures. The plan may include a menu of BMPs that may be selected from for individual use sites. The description of the recycled water management facilities and best management practices shall demonstrate that recycled water will not be overapplied nor result in a discharge to surface waters or cause adverse impacts to ground water quality. Additional BMPs are identified in section B.11 of this attachment (Attachment G).

(3) The Irrigation Management Plan shall also recognize the possibility of runoff from recycled water use areas and describe measures, including BMPs the Discharger will implement to minimize this possibility of runoff.

(4) A plan for appropriate use of fertilizers that takes into account the nutrient levels in the recycled water. The Discharger shall monitor and communicate to the recycled water users the

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nutrient levels in the recycled water and how to calculate the amount of supplemental nutrients that may be applied.

(5) Identification of the person(s) responsible for management of each recycled water use site (e.g., Recycled Water Use Supervisor) and a description of Recycled Water Use Supervisor responsibilities and training. See Water Reclamation Technical Report Requirement C.1.b, above.

D. Water Reclamation Provisions

1. The Discharger shall manage recycled water, and shall develop, establish and enforce administrative procedures, engineering standards, rules, ordinances and/or regulations governing the design and construction of recycled water systems and use facilities and the use of recycled water in accordance with the criteria established in CCR title 22 and this Order. The Discharger shall develop user agreements requiring user compliance with CCR title 22 and this Order. Water reclamation engineering standards, rules, ordinances and/or regulations shall be approved by the Regional Water Board Executive Officer and CDPH.

2. The Discharger shall submit revised and/or additional engineering report(s) to the Regional Water Board and CDPH, prior to initiating any recycled water use (e.g., new industrial use, recreational surface impoundments, water cooling, new dual-plumbed system, etc.) not addressed in any previously submitted CCR title 22 engineering report(s). The Discharger shall also submit any approval letters prepared by CDPH to the Regional Water Board Executive Officer. Engineering report(s) shall be prepared by a properly qualified engineer registered in California and experienced in the field of wastewater treatment, and shall contain (1) a description of the design of the reclamation system; (2) a contingency plan which will assure that no untreated or inadequately treated wastewater will be delivered to the use areas; and (3) a cross-connection control program (title 17 of the CCR) where a dual-plumbed system is used. Engineering reports shall clearly indicate the means for compliance with CCR title 22 regulations and this Order.

3. The Discharger shall conduct periodic inspections of the recycled water use areas, facilities, and operations to monitor and assure compliance with the conditions of this Order. The Discharger shall take whatever actions are necessary, including termination of delivery of recycled water, to correct any user violations. Where dual-plumbed systems are utilized, the Discharger shall, upon prior notification to the user, conduct regular inspections to assure cross-connections are not made with potable water systems and CDPH approved backflow prevention devices are installed and operable.

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4. The Discharger shall be responsible for ensuring that recycled water meets the quality standards of this Order and for the operation and maintenance of transport facilities and associated appurtenances. The Discharger shall hold the recycled water users responsible for the application and use of recycled water on their designated areas and associated operations and maintenance in accordance with all applicable CCR title 22 requirements and this Order. All persons involved in the operation and/or maintenance of the recycled water system shall attend training regarding the safe and efficient operation of recycled water use facilities.

5. If, in the opinion of the Regional Water Board Executive Officer, recycled water use at proposed new locations cannot be adequately regulated under the Master Reclamation Permit, individual Water Reclamation Requirements may be adopted.

6. Prior to the initial operation of any dual-plumbed recycled water system, and annually thereafter, the Discharger shall ensure that the dual-plumbed system within each facility and use area is inspected for possible cross connections with the potable water system. If the Discharger delivers recycled water to any dual-plumbed recycled water system(s), the recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in the Engineering Report. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection or testing for the prior year shall be submitted to CDPH and the Regional Water Board by March 1 of each year. [CCR title 22, section 60316] [Urban]

7. If the Discharger delivers recycled water to any dual-plumbed recycled water system(s), the Discharger shall notify CDPH and the Regional Water Board of any incidents of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of the discovery of the incident. [Urban]

8. If the Discharger delivers recycled water to any dual-plumbed recycled water system(s), any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with section 7605 of title 17, CCR. [Urban]

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ATTACHMENT G-1: APPROVED RECYCLED WATER USE SITES

The recycled water use sites identified on the attached map and listed below are conditionally approved pending submittal and Regional Water Board Executive Officer approval of the technical report identified in Water Reclamation Technical Report Requirement C.1.a.i (and further described in Water Reclamation Technical Report Requirements C.2 (vineyard) and C.3 (urban)) of Attachment G. The environmental impacts of recycled water use at these recycled water use sites were addressed in the certified 2005 Final Environmental Impact Report.

Map ID	Owner	Type of Use	Acres
1	Foreman Lane Area	Existing Vineyard	262.23
2	Tayman Park	Turf	57.65
3	Badger Park	Turf	2.37
4	Recreation Park	Turf	2.39
5	East of Foss Creek	Existing Vineyard	171.58
6	West of Foss Creek	Existing Vineyard	307.84
7	North of Foreman Lane	Existing Vineyard	21.45
8	Syar[5]	Existing Vineyard	95.68
9	Syar	Existing Vineyard	9.91
10	Abbe	Potential Vineyard/Pasture	4.88
11	Abbe	Existing Vineyard	25.69
12	Abbe	Potential Vineyard/Pasture	4.88
13	Abbe	Potential Vineyard/Pasture	11.46
14	Abbe	Existing Vineyard	3.30
15	Abbe	Existing Vineyard	7.02

[5] Additional Syar vineyard property may be approved upon certification of the Discharger's mitigated negative declaration.

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Map ID	Owner	Type of Use	Acres
16	Passalacqua	Existing Vineyard	13.34
17	Passalacqua	Existing Vineyard	76.08
18	Passalacqua	Existing Vineyard	15.53
19	Passalacqua	Potential Vineyard/Pasture	6.46
20	Passalacqua	Potential Vineyard/Pasture	0.98
21	Passalacqua	Potential Vineyard/Pasture	9.31
22	Westside Road/Foreman Lane	Existing Vineyard	213.30
23	Cemetery	Turf	0.23
24	Cemetery	Turf	1.83
25	Cemetery	Turf	1.09
26	Cemetery	Turf	0.73
27	Cemetery	Turf	1.00
28	Healdsburg Junior High Field	Turf	3.32
29	Healdsburg High School Field	Turf	11.77
30	Fitch Mountain Elementary School Field	Turf	2.85
31	Healdsburg Elementary School Field	Turf	3.6

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Site ID	Model Junction	Owner	Crop Type	Area, ac
1	J-2-1, J-2-2, J-2-3	Foreman Lane Area	Vineyard	262.2
2	J-1-14	Tayman Park	Turf	57.7
3	J-1-13	Badger Park	Turf	2.4
4	J-1-17	Recreation Park	Turf	2.4
5	J-1-9, J-1-10	East of Foss Creek	Vineyard	171.6
6	J-1-5, J-1-6, J-1-7	West of Foss Creek	Vineyard	307.8
7	J-1-3	North of Foreman Lane	Vineyard	21.5
8	J-3-2	Syar	Vineyard	95.7
8a		Syar	Vineyard	214.0
9	J-3-1	Syar	Vineyard	9.9
10	J-2-5	Abbe	Vineyard	4.9
11	J-2-5	Abbe	Vineyard	25.7
12	J-2-5	Abbe	Vineyard	4.9
13	J-2-5	Abbe	Vineyard	11.5
14	J-2-5	Abbe	Vineyard	3.3
15	J-2-4	Passalacqua	Vineyard	7.0
16	J-2-6	Passalacqua	Vineyard	13.3
17	J-2-6	Passalacqua	Vineyard	76.1
18	J-2-6	Passalacqua	Vineyard	15.5
19	J-2-6	Passalacqua	Vineyard	6.5
20	J-2-6	Passalacqua	Vineyard	1.0
21	J-2-6	Passalacqua	Vineyard	9.3
22	J-2-7, J-2-5	Westside Road/Foreman Lane	Vineyard	213.3
23	J-1-15	Oak Mound Cemetery	Turf	0.2
24	J-1-15	Oak Mound Cemetery	Turf	1.8
25	J-1-15	Oak Mound Cemetery	Turf	1.1
26	J-1-15	Oak Mound Cemetery	Turf	0.7
27	J-1-15	Oak Mound Cemetery	Turf	1.0
28	J-1-19	HJH Field	Turf	3.3
29	J-1-20	HHS Field	Turf	11.8
30	J-1-21	FMS Field	Turf	2.9
31	J-1-16	HES Field	Turf	3.6
Total				1,563.8

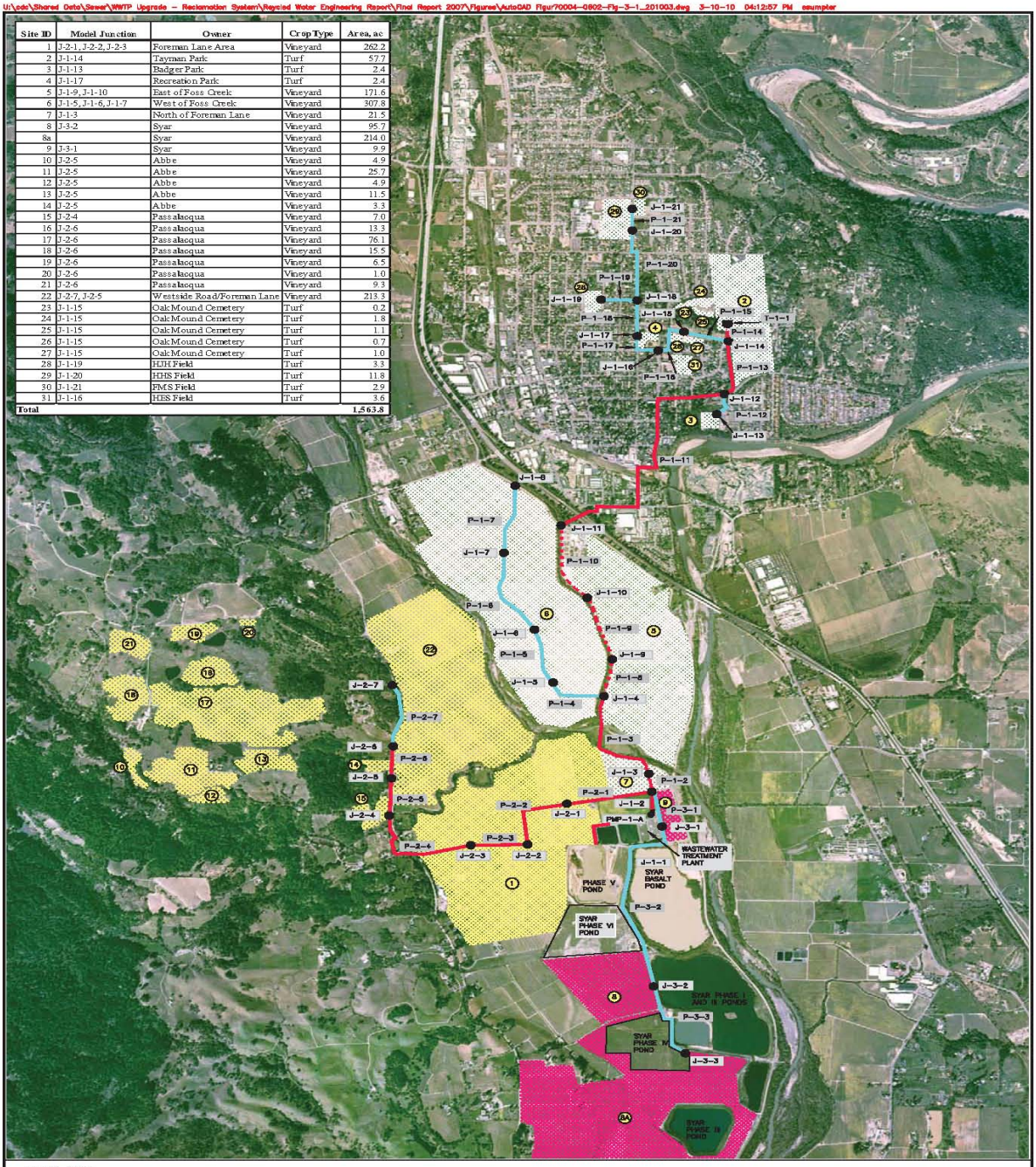

Figure 3-1

City of Healdsburg
Recycled Water Engineering Report
MODELED RECYCLED WATER DISTRIBUTION SYSTEM AND USE AREAS

WEST YOST ASSOCIATES Consulting Engineers