

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0157  
NPDES NO. CA0083551

WASTE DISCHARGE REQUIREMENTS

FOR

TRUSTEES OF U.A. LOCAL 38 CONVALESCENT TRUST FUND  
KONOCTI HARBOR RESORT & SPA  
LAKE COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

1. The Trustees of U.A. Local 38 Convalescent Trust Fund (hereafter Discharger) submitted a Report of Waste Discharge, dated 17 September 2001, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from the Konocti Harbor Resort & Spa (Resort). Supplemental information to complete filing of the application was submitted on 13 November 2001, 8 January 2002, 3 May 2002, and 13 May 2002.
2. The Discharger owns and operates a private wastewater collection, treatment, and disposal system, which provide sewerage service to the Konocti Harbor Resort & Spa. The Resort and wastewater treatment plant are located in Section 10, T13N, R8W, MDB&M, as shown on Attachments A and B, a part of this Order. There are two separate discharges from the facility permitted under this Order, non-contact cooling water to surface water and domestic waste to land.
3. The surface water discharge of non-contact cooling water is used in the Resort's air conditioning system (Discharge Point 001). This untreated, non-contact cooling water is pumped from Clear Lake, transported through a closed pipe system that passes through a heat exchanger, and is then discharged back to Clear Lake, a water of the United States at the point, latitude 38°, 59', 16" and longitude 122°, 44', 23". Landscape irrigation water for the Resort is also drawn from this pipeline through a one-way valve, with no return flow or backflow into the non-contact cooling water system. Clear Lake discharges to Cache Creek, which flows into the Yolo Bypass, which then drains toward the Sacramento River Delta.

COOLING WATER SURFACE WATER DISCHARGE

4. There are no chemicals, including biocides or antiscalants, added to the non-contact cooling water. This Order prohibits the use of chemical additives to the non-contact cooling water. Freon®22 is the coolant used in the chiller for the Resort air conditioning system. The system is designed so that the cooling water is not in contact with the coolant. To ensure system separation, this Order contains a sampling requirement, in the Monitoring and Reporting Program, and an effluent limitation of non-detect for Freon®22.

5. The Report of Waste Discharge describes the non-contact cooling wastewater discharge (Discharge Point 001) as follows:

Average Daily Flow Rate	0.216	million gallons per day (mgd)
Maximum Daily Flow Rate	0.288	mgd
pH, minimum	6.5	pH units
pH, maximum	8.5	pH units
Average Temperature, Summer	74	°F
Average Temperature, Winter	48	°F

6. The United States Environmental Protection Agency (U.S. EPA) adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this surface water discharge. The State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the *State Implementation Plan* or SIP), which contains guidance on implementation of the NTR and the CTR.
7. The Basin Plan states, on page IV-23.00, “*The Porter-Cologne Water Quality Control Act allows the Regional Water Board to prohibit certain discharges (Water Code Section 13243)...*” and “*Water Bodies for which the Regional Water Board has held that the direct discharge of wastes is inappropriate as a permanent disposal method include sloughs and streams with intermittent flow or limited dilution capacity. The direct discharge of municipal and industrial wastes (excluding storm water discharges) into the following specific water bodies has been prohibited...*” Clear Lake is included on the list of prohibited water bodies on page IV –24.00 of the Basin Plan. The Regional Board determined, by adoption of Order No. 94-288, that the discharge of the Resort’s non-contact cooling water into Clear Lake is considered neither a municipal nor an industrial waste; therefore the prohibition is not considered applicable to this discharge.
8. Non-contact cooling water from the treatment facility is discharged to Clear Lake. Monitoring reports have not been submitted regarding the cooling water discharge and no sampling has been conducted to show that assimilative capacity exists for any constituents discharged to Clear Lake. In addition, there has been no analysis of Clear Lake to show that currents in the lake would provide adequate mixing for either mixing zone or dilution credits. In general, lake and reservoir systems tend to accumulate pollutants. Therefore, dilution has not been considered in establishing discharge limitations. To protect the beneficial uses of Clear Lake, both acute and chronic limitations have been established as end-of-pipe limits.
9. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application and in studies, the Regional Board finds that the discharge does have a reasonable

potential to cause or contribute to excursions above water quality standards and objectives for Mercury, Aluminum, Specific Conductance (EC), and Total Dissolved Solids. These constituents will be discussed below and effluent limitations and/or studies are included in this Order.

10. Mercury is included on the 303(d) list, as a pollutant that causes impairment of Clear Lake. Mercury concentrations in water samples from Clear Lake have exceeded 0.050 µg/l, the Human Health criterion for mercury, for consumption of water and aquatic organisms. Mercury concentrations in tissue from fish and birds, living in and on Clear Lake, have also exceeded health criteria. Therefore, the discharge from the Resort must not cause or contribute to increased mercury levels in fish tissue to meet the requirements of the anti-degradation policy described in Resolution No. 68-16 and the anti-degradation policy described in the Code of Federal Regulations 40 CFR 131.12(a)(1) (included in the Basin Plan as Appendix Items 2 and 39, respectively). The Human Health criterion ( $10^{-6}$  risk for carcinogens) in the CTR for mercury, for consumption of water and aquatic organisms, is 0.050 µg/l. USEPA acknowledges in the Code of Federal Regulations, 40 CFR Part 131, that Human Health criteria may not be protective of some aquatic or endangered species and that “more stringent mercury limits may be determined and implemented through use of the State’s narrative criterion.” In the CTR, the USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date. Clear Lake is known to contain mercury concentrations in excess of water quality standards. The Discharger extracts water from Clear Lake, runs it through the air-conditioning system heat exchanger as non-contact cooling water, and discharges water back into Clear Lake. The non-contact cooling water discharge into Clear Lake may contain mercury in excess of water quality standards and at higher concentrations than the water in Clear Lake. Methylmercury probably also concentrates in the discharge and is the form of mercury of greatest concern. However, there is currently no standard method to translate the fish tissue concentration of methylmercury into a water column concentration. The Code of Federal Regulations, 40 CFR 122.44(d)(1)(iii), states that when a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above allowable numeric criteria for an individual pollutant, the NPDES permit must contain an effluent limit. Clear Lake is a source of drinking water. Therefore, based on the considerations enumerated and discussed above, a concentration-based Effluent Limitation has been established for mercury, in this Order, at the Human Health Criterion of 0.050 µg/l. This Order contains a mass-based Effluent Limitation for mercury, such that the mass of mercury in the discharge shall not exceed the weekly average mass of mercury in water samples from Clear Lake (intake credit). The mass of mercury in the discharge and in lake samples must be calculated for each reporting period. This Order contains a Provision that allows the Board to reopen the Order to add or change the mercury Effluent Limitations based on the adoption of new mercury criteria by USEPA and/or information collected by the Discharger in the monthly monitoring reports.
11. On 8 August 2001, the Discharger sampled the intake water from Clear Lake for Aluminum. The sample contained 390 µg/l of aluminum. Cooling towers tend to concentrate waste constituents as the heat evaporates the water. The cooling tower discharge is reasonably more concentrated than the intake. The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. U.S. EPA has developed ambient water quality criteria for the protection of fresh water aquatic life for

aluminum at 87 µg/l (4-day average) and 750 µg/l (1-hour average). Based on the concentration of aluminum in the intake water, the discharge may reasonably contain toxic levels of aluminum. Effluent limits for aluminum have been included in this Order.

12. The recycling of cooling tower blowdown can be a major source of salt loadings in a wastestream and is a controllable source. The beneficial uses of the surface water receiving stream and the underlying groundwater include domestic, municipal and agricultural uses. The California Code of Regulations, Title 22, contains secondary Maximum Contaminant Levels (MCL) for TDS and EC. The secondary MCLs for EC and TDS are:

<u>Constituent</u>	<u>Recommended</u>	<u>Upper</u>	<u>Short Term Max</u>
TDS (mg/l)	500	1,000	1,500
EC (µmhos/cm)	900	1,600	2,200

Agriculture is a beneficial use of both surface and groundwater. An EC limitation of 700 µmhos/cm is recommended to protect salt sensitive crops. Water from Clear Lake may be used for irrigation. This Order contains effluent limitations for TDS and EC. It is uncertain whether the discharge will comply with the limitations.

13. This Order contains a Receiving Water Limitation, as required to comply with the Basin Plan's water quality objective for turbidity. The effect of discharging the effluent into the receiving water is likely to be insignificant to the turbidity of Clear Lake and there is no practical method available that would measure turbidity in Clear Lake. This Order requires weekly turbidity monitoring of the non-contact cooling water effluent and a provision with a reopener clause if information becomes available that shows the discharge has an impact on the turbidity of Clear Lake.
14. This Order contains a Receiving Water Limitation, as required to comply with the Basin Plan's water quality objective for temperature. The limitation for temperature requires that the discharge not cause the receiving water temperature to increase by more than 5°F. Temperature data of the intake and effluent non-contact cooling water have not been submitted by the Discharger and Clear Lake temperature is not available either. The non-contact cooling water is passed through the heat exchanger of the air conditioning system and there is reasonable potential that the effluent temperature is elevated compared to the receiving water, which is Clear Lake. The volume of potentially heated effluent discharged to the receiving water is probably not significant enough to cause an increase of more than 5°F in Clear Lake. This Order requires daily sampling of the effluent temperature to be submitted to the Regional Water Board and also summarized annually, and submitted to the California Department of Fish and Game (DFG) for their evaluation and consultation on any thermal impacts to Clear Lake from the Discharger's effluent discharge.
15. The flow of intake water from Clear Lake for the non-contact cooling and irrigation systems and the flow of effluent to Clear Lake were required to be monitored continuously by meter under Order 94-288. The Discharger installed a flow meter at the inlet structure in April 2002, in

response to a request from Regional Water Board staff. The non-contact cooling water effluent is not metered nor measured by the Discharger. This Order requires installation of a continuous flow meter at the non-contact cooling water effluent discharge pipe (Discharge No. 001), and the Monitoring and Reporting Requirements include continuous meter monitoring of the intake and effluent flows.

16. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
17. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. This Order contains provisions that:
  - a. Require the Discharger to conduct a study to provide information as to whether the levels of CTR, NTR, and U.S. EPA priority toxic pollutants in the discharge has the potential to cause or contribute to an in-stream excursion above a water quality standard, including Basin Plan numeric and narrative objectives and NTR and CTR pollutants;
  - b. Require the Discharger to submit information to calculate effluent limitations for those constituents, if the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard; and
  - c. Allow the Regional Water Board to reopen this Order and include effluent limitations for those constituents.

On 10 September 2001, the Executive Officer issued a letter, in conformance with State Water Code, Section 13267, requiring the Discharger to prepare a technical report assessing water quality. This Order is intended to be consistent with the requirements of the technical report in requiring sampling for NTR, CTR, and additional constituents to determine the full water quality impacts of the discharge. The technical report requirements are intended to be more detailed, listing specific constituents, detection levels, and acceptable time frames and shall take precedence in resolving any conflicts.

#### SEWAGE – LAND DISPOSAL DISCHARGE

18. Wastewater to the sewage treatment plant is made up of domestic wastes, the filter backwash from the swimming pools and spa facilities, and the filter backwash from the water treatment plant (Discharge Point 002). The wastewater is first pumped to a primary clarifier, then to a bentonite lined aeration pond, and then to a neoprene lined secondary settling pond (South Pond), where automated chlorine residual measurement and chlorine dosing takes place. There is a third

concrete lined pond (North Pond), which is generally used for flow control. There are two subsurface leach fields located under the three lined ponds. All of the land disposal system is located on the Discharger's property.

19. Order No. 94-288 and Discharger monitoring reports describe the wastewater treatment plant discharge (Discharge Point 002) as follows:

Average Daily Dry Weather Flow	0.115	Mgd
Maximum Daily Flow Rate	0.2	Mgd
Settleable Solids	<0.5	ml/l
Coliform	>2400	MPN/100 ml

20. The Discharger currently has no groundwater monitoring wells installed. This Order requires the Discharger to prepare a groundwater quality assessment report after installing groundwater monitoring wells sufficient to determine the wastewater impacts on groundwater quality. The groundwater study shall also determine if wastewater flows underground into Clear Lake.
21. All three of the wastewater treatment ponds are lined. The chlorine-disinfected effluent is released to leachfields located under the ponds, which are designed to dispose of wastewater by percolation. The intentional disposal of wastewater by percolation presents a reasonable potential that pollutants may migrate to groundwater. In accordance with Resolution 68-16, this Order contains a Limitation requiring no degradation of groundwater.
22. The Effluent Limitations from the final settling pond to the leachfields shall were carried forth from the previous Waste Discharge Requirements, Order No. 94-288.

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Monthly Median</u>	<u>Daily Maximum</u>
BOD <sub>5</sub>	mg/L	40	--	80
TSS	mg/l	40	--	80
pH	pH units	--	--	6.5 - 8.5
Settleable Solids	m//L	0.2	--	0.5
Total Coliform Organisms	MPN/100 mL	--	23	--

23. The Discharger utilizes ponds for the treatment and disposal of wastewater. Pond levees can fail due to poor maintenance or overtopping due to high water or wave action. Wastewater ponds can also emit significant odors if the dissolved oxygen level drops below 1.0 mg/l. Ponds containing wastewater can also create a significant breeding ground for mosquitoes if not properly maintained. This permit contains limitations that require: proper maintenance of the pond levees; a minimum

dissolved oxygen concentration; and, a minimum freeboard to avoid overflows and unacceptable odors.

#### GENERAL

24. The U.S. Environmental Protection Agency (EPA) and the Regional Water Board have classified the surface water discharge of cooling water as a minor discharge. The domestic wastewater discharge to land is not subject to NPDES regulations.
25. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. These requirements implement the Basin Plan.
26. The Basin Plan states, on page II-1.00, "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...*" and "*disposal of wastewaters is [not] a prohibited use of waters of the state; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*" The existing and beneficial uses that currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1 of the Basin Plan. Clear Lake is hydrologic unit number 513.52 in the Sacramento Hydrologic Basin. The beneficial uses of Clear Lake, as identified in Table II-1 of the Basin Plan, are municipal and domestic supply, agricultural irrigation and stock watering, body contact water recreation, non-contact water recreation, warm and cold freshwater aquatic habitat, warm spawning habitat, wildlife habitat and other aquatic resources. Other beneficial uses identified in the Basin Plan apply to Clear Lake, including navigation, aesthetic enjoyment, groundwater recharge and freshwater replenishment.
27. The beneficial uses of the underlying ground water, as identified in the Basin Plan, are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.
28. The Basin Plan requires the application of the most stringent objective necessary to ensure that groundwater does not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect the domestic drinking water supply, agricultural supply, or any other beneficial use. In addition, Resolution 68-16 requires the Regional Water Board to maintain high quality waters in the State when regulating discharge of waste. This permit requires that the wastewater discharge does not cause pollutants in groundwater to increase when compared to background groundwater quality. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations compared to background levels. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater to above the background level, this permit may be reopened and modified. This Order includes a time schedule requiring the Discharger to install groundwater monitoring wells and includes monitoring requirements in the attached Monitoring and Reporting Program. Groundwater monitoring reports are necessary to

evaluate impacts to waters of the State and to ensure protection of beneficial uses and compliance with State and Regional Water Board plans and policies, including Resolution 68-16.

29. Monitoring is required by this Order for the purposes of assessing compliance with permit limitations and water quality objectives and gathering information to evaluate the need for additional limitations.
30. Section 13267 of the California Water Code states, in part, “(a) A regional board, in establishing...waste discharge requirements...may investigate the quality of any waters of the state within its region” and “(b)(1) In conducting an investigation..., the regional board may require that any person who...discharges...waste...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires.” The attached Monitoring and Reporting Program No. \_\_ is issued pursuant to California Water Code Section 13267 and is necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.
31. Monitoring and Reporting Program No. R5-2002-0157, Attachments A and B, and the Fact Sheet, are a part of this Order.
32. This discharge was previously regulated by Waste Discharge Requirements in Order No. 94-288, adopted by the Regional Water Board on 28 October 1994.
33. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.
34. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, *et seq.*), requiring preparation of an environmental impact report or negative declaration in accordance with Section 13389 of the California Water Code.
35. The Regional Water Board has considered the information in the attached Fact Sheet in developing the Findings of this Order. The attached Fact Sheet is part of this Order.
36. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.



37. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
38. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided U.S. EPA has no objections.

**IT IS HEREBY ORDERED** that Order No. 94-288 is rescinded and the Trustees of U.A. Local 38 Convalescent Trust Fund and the Konocti Harbor Resort & Spa, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

**A. Discharge Prohibitions:**

1. The discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.
2. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision A.13. [See attached “Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)”].
3. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

**B. Effluent Limitations Discharge No. 001 (non-contact cooling water to Clear Lake):**

1. Effluent shall not exceed the following limitations:

<u>Constituents</u>	<u>Units</u>	<u>Average Monthly</u>	<u>4-day Average</u>	<u>Average Weekly</u>	<u>1-hour Average</u>	<u>Daily Maximum</u>
Specific Conductance (EC)	µmhos/cm	900	--	1,600	--	2,200
Total Dissolved Solids (TDS)	mg/l	500	--	1,000	--	1,500
Mercury (total)	µg/l	0.05	--	--	--	0.05
Freon®22 <sup>1</sup>	µg/l	--	--	--	--	Non-detect
Aluminum	µg/l	--	87	--	750	--

<sup>1</sup> Trade name for Chlorodifluoromethane, not included in list of Priority Pollutants

2. The discharge shall not have a pH less than 6.5 nor greater than 8.5.
3. The average dry weather discharge flow shall not exceed 0.288 million gallons.

4. There shall be no biocides, antiscalants, corrosion inhibitors or other chemicals, including chlorine, added to the non-contact cooling water.
5. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:  
 Minimum for any one bioassay - - - - - 70%  
 Median for any three bioassays - - - - - 90%

**C. Discharge Specifications – Discharge No. 002 (wastewater to ponds):**

1. Effluent from the final settling pond to the leachfields shall not exceed the following limitations:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Monthly Median</u>	<u>Daily Maximum</u>
BOD <sub>5</sub>	mg/L	40	--	80
TSS	mg/l	40	--	80
pH	pH units	--	--	6.5 - 8.5
Settleable Solids	m/L	0.2	--	0.5
Total Coliform Organisms	MPN/100 mL	--	23	

2. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the property owned by the Discharger.
3. As a means of discerning compliance with Discharge Specification No. C.2 above, the dissolved oxygen content in the ponds shall not be less than 1.0 mg/L at any time, as measured at a point as far as practical from the pond inlet and within one foot of the water surface.
4. The pond system shall be managed to prevent the breeding of mosquitoes. In particular:
  - a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, and/or herbicides.
  - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
5. The freeboard in all ponds shall never be less than two feet as measured vertically from the water surface to the lowest point of overflow.

6. The pond system shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration.
7. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
8. The discharge of treated effluent (Discharge No. 002) shall not cause saturated conditions within 100 feet of any water body.
9. The discharge or use of treated effluent (Discharge No. 002) shall not cause the degradation of groundwater or enter surface waters.
10. Application or impoundment of wastewater (Discharge No. 002) within 100 feet of any domestic water supply well is prohibited.

**D. Receiving Water Limitations:**

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit.

The discharge shall not cause the following in Clear Lake:

1. Biostimulatory substances that promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
2. Aesthetically undesirable discoloration.
3. Concentrations of dissolved oxygen to fall below 7.0 mg/l. The monthly median of the mean daily dissolved oxygen concentration shall not be caused to fall below 85 percent of saturation in the main water mass, and the 95<sup>th</sup> percentile concentration shall not be caused to fall below 75 percent of saturation.
4. Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
5. Oils, greases, waxes, or other materials to accumulate in concentrations that cause nuisance, result in a visible film or coating on the water surface or on objects in the water, or otherwise adversely affect beneficial uses.
6. The ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units. A one-month averaging period may be applied when calculating the pH change of 0.5 units.
7. Deposition of material that causes nuisance or adversely affects beneficial uses.

8. Taste- or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
9. The ambient temperature to increase more than 5°F.
10. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
11. The turbidity to increase as follows:
  - a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
  - b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
  - c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
  - d. More than 10 percent where natural turbidity is greater than 100 NTUs.
12. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

Upon adoption of any applicable water quality standard for receiving waters by the Regional Water Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder, this permit may be reopened and receiving water limitations added.

**E. Groundwater Limitation:**

1. The discharge shall not cause the underlying groundwater to be degraded.

**F. Sludge Disposal:**

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in California Code of Regulations, Title 27, Division 2, Subdivision 1, Section 20005, *et seq.*
2. Any proposed change in sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and U.S. EPA Regional Administrator at least **90 days** in advance of the change.

3. Use and disposal of sewage sludge shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR 503.
4. If the State Water Resources Control Board and the Regional Water Quality Control Boards are given the authority to implement regulations contained in 40 CFR 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR 503 whether or not they have been incorporated into this Order.
5. The Discharger is encouraged to comply with the "Manual of Good Practice for Agricultural Land Application of Biosolids" developed by the California Water Environment Association.

**G. Provisions:**

1. The wastewater treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
2. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater and condensates that are essentially free of pollutants.
3. The Discharger shall install a flow meter on the non-contact cooling water discharge pipe to continuously monitor the effluent flow to Clear Lake. The flow meter shall be installed and operating **within one year of the adoption of this Order.**
4. There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives. The constituents are specifically listed in a technical report requirement issued by the Executive Officer on 10 September 2001 that includes NTR, CTR, and additional constituents, which could exceed Basin Plan numeric or narrative water quality objectives. The Discharger shall comply with the following time schedule in conducting a study of the potential effect(s) of these constituents in surface waters:

<u>Task</u>	<u>Compliance Date</u>
Submit Study Report	<b>1 March 2003</b>
Submit Study Report for dioxins	<b>1 March 2004</b>

This Order is intended to be consistent with the requirements of the 10 September 2001 technical report. The technical report requirements shall take precedence in resolving any

conflicts. The Discharger shall submit to the Regional Water Board on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the time schedule.

On or before each compliance date, the Discharger shall submit to the Regional Water Board the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the time schedule.

If, after review of the study results, it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order will be reopened and effluent limitations added for the subject constituents.

5. The Discharger shall conduct the chronic toxicity testing on the non-contact cooling water effluent (Discharge No. 001) specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Water Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.
6. The Discharger must comply with the following schedule to achieve compliance with the limitations for mercury contained in the Effluent Limitations:

<u>Task</u>	<u>Compliance Date</u>
Submit Workplan and Time Schedule	<b>1 year after permit adoption</b>
Submit annual report	<b>1 March - annually</b>
Achieve full compliance	<b>1 September 2004</b>

The Discharger shall submit to the Regional Board on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in

compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

7. The Discharger shall prepare an annual report of the daily effluent temperatures and must submit it the Department of Fish and Game for their consultation regarding the effect of effluent temperature on Clear Lake. A copy of the Annual Temperature Report shall also be sent to the Regional Water Board. This Order may be reopened to add a temperature limitation or strategy based on recommendations by the DFG.
8. The Discharger shall conduct weekly turbidity monitoring of the non-contact cooling water effluent. If new information is brought forth that indicates this discharge impacts the turbidity of Clear Lake, the Order may be reopened to include turbidity limitations of the effluent.
9. The Discharger shall use the best practicable treatment or control technique currently available to limit mineralization to no more than a reasonable increment.
10. The Discharger shall prepare a groundwater quality assessment report after installing new groundwater monitoring wells sufficient to determine the wastewater impacts on groundwater quality. Within 18-months of the adoption of this Order, the Discharger shall complete a hydrogeologic investigation within the area affected and potentially affected by the wastewater treatment plant and its discharge(s) to land. The technical report documenting the hydrogeologic investigation shall describe the underlying geology, existing wells (active and otherwise), local well construction practices and standards, well restrictions, hydrogeology and assess all impacts of the wastewater discharge on water quality. The groundwater study shall also determine if wastewater flows underground into Clear Lake. The groundwater quality must be monitored at least quarterly for coliform organisms, pH, TDS and EC. At least one sample must be analyzed for U.S. EPA priority pollutants. The technical report must present, for each monitoring event, determinations for the direction and gradient of groundwater flow. The groundwater monitoring network shall include one or more background monitoring wells and sufficient number of designated monitoring wells to determine if the discharge has degraded groundwater. These include monitoring wells immediately down gradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. All wells shall comply with appropriate standards as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981), and any more stringent standards adopted by the Discharger or Lake County pursuant to CWC section 13801.

The existing well network will be evaluated, and the proposed network should include existing monitoring wells where they will serve to measure compliance or provide other relevant information (e.g., depth to groundwater). The Discharger shall install approved monitoring wells, properly destroy ineffective wells, and commence groundwater monitoring in accordance with this Order's Monitoring and Reporting Program. After the first sampling event, the Discharger shall report on its sampling protocol as specified in this Order's

Monitoring and Reporting Program (MRP). This Order may be reopened and additional groundwater limitations added. The Discharger shall comply with the following time schedule to assure compliance with the groundwater limitations of this Order:

<u>Task</u>	<u>Compliance Date</u>	<u>Report of Compliance Due</u>
Submit Groundwater Monitoring Well Installation Plan		<b>6 months after permit adoption</b>
Complete well network installation	<b>1 year after permit adoption</b>	
Complete groundwater assessment		<b>18 months after permit adoption</b>

11. The Discharger shall report to the Regional Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986".
12. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions".
13. The Discharger shall comply with Monitoring and Reporting Program No. R5-2002-0157, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

When requested by U.S. EPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for discharger self-monitoring reports.

14. Minimum detection levels for monitoring required by this Order shall, unless impracticable, be adequate to demonstrate compliance with permit limitations.
15. This Order expires on **1 September 2007** and the Discharger must file a Report of Waste Discharge in accordance with California Code of Regulations, Title 23, not later than **180 days in advance** of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.
16. Prior to making any change in the discharge points, places of use, or purposes of use of the wastewater, the Discharger shall obtain approval or clearance from, the State Water Resources Control Board (Division of Water Rights).



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

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, THOMAS R. PINKOS, Acting Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 6 September 2002.

Ordered by: \_\_\_\_\_  
THOMAS R. PINKOS, Executive Officer

\_\_\_\_\_  
17 September 2002  
(Date)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2002-0157

NPDES NO. CA0083551

FOR

TRUSTEES OF U.A. LOCAL 38 CONVALESCENT TRUST FUND  
KONOCTI HARBOR RESORT & SPA

LAKE COUNTY

This Monitoring and Reporting Program is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this Program unless and until the Regional Water Board or Executive Officer issues a revised Monitoring and Reporting Program. Specific sample station locations shall be established under direction of the Regional Water Board's staff, and a description of the stations shall be attached to this Order.

**INFLUENT MONITORING – NON-CONTACT COOLING WATER**

Samples shall be collected at approximately the same time as effluent samples and should be representative of the influent for the period sampled. Time of collection of samples shall be recorded. Influent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Meter	Continuous
Temperature	°F	Grab	Daily
Specific Conductance (EC)	µmhos/cm	Grab	Daily

**EFFLUENT MONITORING – NON-CONTACT COOLING WATER**

Effluent samples shall be collected from the sample port in the discharge pipe located before the outfall to Clear Lake. Effluent samples should be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Meter	Continuous
pH	Number	Grab	Daily
Temperature	°F	Grab	Daily
Electrical Conductivity @ 25°C	µmhos/cm	Grab	Weekly
Total Dissolved Solids	mg/l	Grab	Quarterly
Acute Toxicity <sup>1</sup>	% Survival	Grab	Twice Annually
Mercury (total)	µg/l	Grab	Monthly
Aluminum	µg/l	Grab	Monthly
Freon®22	mg/l	Grab	Annually
Priority Pollutants <sup>2, 3</sup>	mg/l	Grab	Annually <sup>4</sup>

<sup>1</sup> The acute bioassay samples shall be analyzed using EPA/600/4-90/027F, Fourth Edition, or later amendment with Regional Water Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. Test species shall be fathead minnows (*Pimephales promelas*), with no pH adjustment unless approved by the Executive Officer.

<sup>2</sup> All peaks are to be reported, along with any explanation provided by the laboratory.

<sup>3</sup> Priority Pollutants are defined as U.S. EPA priority toxic pollutants and the list consists of the constituents in the most recent National Toxics Rule and California Toxics Rule.

<sup>4</sup> Priority Pollutants are defined as U.S. EPA priority toxic pollutants and the list consists of the constituents in the most recent National Toxics Rule and California Toxics Rule.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such

intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

### **EFFLUENT MONITORING – WASTEWATER TREATMENT PLANT**

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted to the outfall. Effluent samples should be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
20°C BOD <sub>5</sub>	mg/l	Grab	Monthly
Suspended Solids	mg/l	Grab	Bi-weekly
Settleable Solids	ml/l	Grab	Weekly
Total Dissolved Solids	mg/l	Grab	Quarterly
Specific Conductance (EC)	µmhos/cm	Grab	Weekly
PH	Number	Grab	Weekly
Total Coliform Organisms	MPN/100 ml	Grab	Monthly
Flow	mgd	Meter	Continuous
Chlorine Residual	mg/l	Grab	Weekly

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

### **RECEIVING WATER MONITORING**

In conducting the non-contact cooling water effluent sampling, a log shall be kept of the receiving water conditions at the same time. Attention shall be given to the presence or absence of:

- a. Floating or suspended matter
- b. Discoloration
- e. Visible films, sheens, or coatings
- f. Fungi, slimes, or objectionable growths

- c. Bottom deposits
- d. Aquatic life
- g. Potential nuisance conditions

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

### **THREE SPECIES CHRONIC TOXICITY MONITORING**

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the receiving water. The testing shall be conducted as specified in EPA 600/4-91/002. Chronic toxicity samples shall be collected from Discharge No. 001, the non-contact cooling water, prior to its entering Clear Lake. A grab sample shall be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. The control water, or standard dilution water, shall be provided by the laboratory or collected from the potable water supply at the facility. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test as soon as possible after being notified by the laboratory, but not later than 14 days. Chronic toxicity monitoring shall include the following:

Species: *Pimephales promelas* (larval stage), *Ceriodaphnia dubia*, and *Selenastrum capricornutum*

Frequency: Semi-annually (every six months)

Dilution Series: None, the tests shall be conducted using 100% effluent

### **SLUDGE MONITORING**

A composite sample of sludge shall be collected when sludge is removed from the ponds for disposal in accordance with U.S. EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for the metals listed in Title 22.

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

Upon removal of sludge, the Discharger shall submit characterization of sludge quality, including sludge percent solids and quantitative results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). All sludge samples shall be a composite of a minimum of twelve (12) discrete samples taken at equal time intervals over 24 hours. Suggested

methods for analysis of sludge are provided in U.S. EPA publications titled "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods" and "Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater". Recommended analytical holding times for sludge samples should reflect those specified in 40 CFR 136.6.3(e). Other guidance is available in U.S. EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989.

### **GROUNDWATER MONITORING**

Prior to construction, plans and specifications for groundwater monitoring wells shall be submitted to Regional Water Board staff for review and approval. Wells shall comply with requirements of the Department of Water Resources.

Prior to sampling, groundwater elevations must be measured to the nearest one-hundredth of a foot. The groundwater quality must be monitored at least quarterly for total coliform organisms, nitrates (N), pH, TDS, and EC. At least one sample must be analyzed for U.S.EPA priority pollutants. The groundwater elevations shall be used to calculate the gradient and direction of groundwater flow, which shall be reported with each quarterly report.

### **REPORTING**

Discharger self-monitoring results shall be submitted to the Regional Water Board monthly. Monitoring results shall be submitted by the **tenth day of the second month** following sample collection. Quarterly, semi-annual, and annual monitoring results shall be submitted by the **tenth day of the second month following each calendar quarter**. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to clearly illustrate whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, should be determined and recorded.

The Discharger shall report minimum levels and method detection limits as defined in and required by the SIP.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **1 February** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

- a.* The names and telephone numbers of persons to contact regarding the Resort for emergency and routine situations.
- b.* A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).
- c.* A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

The Discharger may also be requested to submit an annual report to the Regional Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by: \_\_\_\_\_  
THOMAS R. PINKOS, Executive Officer

\_\_\_\_\_

6 September 2002  
(Date)

## **FACT SHEET**

**ORDER NO. R5-2002-0157**  
**NPDES NO. CA0083551**  
**U.A. LOCAL 38 CONVALESCENT TRUST FUND**  
**KONOCTI HARBOR RESORT & SPA**  
**LAKE COUNTY**

### *SCOPE OF PERMIT*

This renewed Order regulates the discharge of up to 0.288 million gallons per day (mgd) of non-contact cooling water to Clear Lake and up to 0.69 mgd of domestic wastewater to a pond and leachfield system from the Konocti Harbor Resort & Spa. This Order includes separate surface water, land disposal and groundwater limitations.

### *COOLING WATER SURFACE WATER DISCHARGE*

The Discharger intakes water from Clear Lake and discharges a maximum of 0.288 mgd of noncontact cooling water from the Resort air conditioning system. There are no chemicals, including biocides or antiscalants, added to the non-contact cooling water. This Order prohibits the use of chemical additives to the non-contact cooling water. Freon®22 is the coolant used in the chiller for air conditioning system. The system is designed so that the cooling water is not in contact with the coolant. To ensure system separation, the Order contains a sampling requirement, in the Monitoring and Reporting Program, and a non-detectable effluent limitation for Freon®22.

The Basin Plan states, on page IV-23.00, “*The Porter-Cologne Water Quality Control Act allows the Regional Water Board to prohibit certain discharges (Water Code Section 13243)...*” and “*Water Bodies for which the Regional Water Board has held that the direct discharge of wastes is inappropriate as a permanent disposal method include sloughs and streams with intermittent flow or limited dilution capacity. The direct discharge of municipal and industrial wastes (excluding storm water discharges) into the following specific water bodies has been prohibited...*” Clear Lake is included on the list of prohibited water bodies on page IV –24.00 of the Basin Plan. The Regional Water Board determined, by adoption of Order No. 94-288, that the discharge of the Resort’s non-contact cooling water into Clear Lake is considered neither a municipal nor an industrial waste; therefore the prohibition is not considered applicable to this discharge.

Monitoring reports have not been submitted and no sampling has been conducted to show that assimilative capacity exists for any constituents discharged to Clear Lake. In addition, there has been no analysis of Clear Lake to show that currents in the lake would provide adequate mixing for either mixing zone or dilution credits. In general, lake and reservoir systems tend to accumulate pollutants. Therefore, dilution has not been considered in establishing discharge limitations. To protect the beneficial uses of Clear Lake, both acute and chronic limitations have been established as end-of-pipe limits. Based on the above, dilution is not being considered in determining discharge limitations in this Order. Limitations, both acute and chronic, are being established at the end-of-pipe to protect the beneficial uses of the receiving water, which is Clear Lake.



The flow of intake water from Clear Lake for the non-contact cooling and irrigation systems and the flow of effluent to Clear Lake were required to be monitored continuously by meter under Order 94-288. The Discharger installed a flow meter at the inlet structure in April 2002, in response to a request from Regional Water Board staff. The non-contact cooling water effluent is not metered nor measured by the Discharger. This Order requires installation of a continuous flow meter at the non-contact cooling water effluent discharge pipe (Discharge No. 001). The Monitoring and Reporting Requirements include continuous meter monitoring of the intake and effluent flows.

The recycling of cooling tower blowdown can be a major source of salt loadings in a wastestream and is a controllable source. The beneficial uses of the surface water receiving stream and the underlying groundwater include domestic, municipal and agricultural uses. The California Code of Regulations, Title 22, contains secondary Maximum Contaminant Levels (MCL) for TDS and EC. The secondary MCLs for EC and TDS are:

<u>Constituent</u>	<u>Recommended</u>	<u>Upper</u>	<u>Short Term Max</u>
TDS (mg/l)	500	1,000	1,500
EC (µmhos/cm)	900	1,600	2,200

Agriculture is a beneficial use of both surface and groundwater. An EC limitation of 700 µmhos/cm is recommended to protect salt sensitive crops. Water from Clear Lake may be used for irrigation.

### ***Mercury***

The following have been considered in establishing the Mercury limitations in the permit:

a. Water Quality Limited Segments/303(d) List

On page IV-7.00, the Basin Plan defines Water Quality Limited Segments (WQLSs) as “*those sections of lakes, streams, rivers, or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate effluent limitations for point sources.*” The Basin Plan goes on to state on page IV-7.00, “*Additional treatment beyond minimum federal requirements will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*” The Basin Plan contains a list [known as the 303(d) List] of WQLSs in Appendix Item 38.

Mercury is included on the 303(d) list, as a pollutant that causes impairment of Clear Lake. Mercury concentrations in water samples from Clear Lake have exceeded 0.050 µg/l, the Human Health criterion for mercury, for consumption of water and aquatic organisms. Mercury concentrations in tissue from fish and birds, living in and on Clear Lake, have also exceeded health criteria. Therefore, the discharge from the Resort must not cause or contribute to increased mercury levels in fish tissue to meet the requirements of the anti-degradation policy described in Resolution No. 68-16 and the anti-degradation policy described in the Code of Federal Regulations 40 CFR 131.12(a)(1) (included in the Basin Plan as Appendix Items 2 and 39, respectively).

b. National Toxics Rule/California Toxics Rule

USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain criteria for priority pollutants and water quality standards applicable to this discharge. The State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan or SIP), which contains guidance on implementation of the NTR and the CTR. The Human Health criterion ( $10^{-6}$  risk for carcinogens) in the CTR for mercury, for consumption of water and aquatic organisms, is 0.050 µg/l. USEPA acknowledges in the Code of Federal Regulations, 40 CFR Part 131, that Human Health criteria may not be protective of some aquatic or endangered species and that “more stringent mercury limits may be determined and implemented through use of the State’s narrative criterion.” In the CTR, the USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

c. California Toxics Rule/Intake Water Credits

On pages 17 and 18, the State Implementation Plan (SIP) for the CTR also contains Section 1.4.4 Intake Water Credits, as follows:

*“A RWQCB may consider priority pollutants in intake water on a pollutant-by-pollutant and discharge-by-discharge basis when establishing water quality-based effluent limitations, provided that the discharger has demonstrated to the satisfaction of the RWQCB that the following conditions are met:*

- (1) The observed maximum ambient background concentration, as determined in section 1.4.3.1, and the intake water concentration of the pollutant exceed the most stringent applicable criterion/objective for that pollutant;*
- (2) The intake water credits provided are consistent with any TMDL applicable to the discharge that has been approved by the RWQCB, SWRCB, and U.S. EPA;*
- (3) The intake water is from the same water body as the receiving water body. The discharger may demonstrate this condition by showing that:*
  - (a) the ambient background concentration of the pollutant in the receiving water, excluding any amount of the pollutant in the facility’s discharge, is similar to that of the intake water;*
  - (b) there is a direct hydrological connection between the intake and discharge points;*
  - (c) the water quality characteristics are similar in the intake and receiving waters; and*

- (d) *the intake water pollutant would have reached the vicinity of the discharge point in the receiving water within a reasonable period of time and with the same effect had it not been diverted by the discharger.*

*The RWQCB may also consider other factors when determining whether the intake water is from the same water body as the receiving water body;*

- (4) *The facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses; and*
- (5) *The timing and location of the discharge does not cause adverse effects on water quality and beneficial uses that would not occur if the intake water pollutant had been left in the receiving water body.*

*Where the above conditions are met, the RWQCB may establish effluent limitations allowing the facility to discharge a mass and concentration of the intake water pollutant that is no greater than the mass and concentration found in the facility's intake water. A discharger may add mass of the pollutant to its waste stream if an equal or greater mass is removed prior to discharge, so there is no net addition of the pollutant in the discharge compared to the intake water. Where proper operation and maintenance of the facility's treatment system results in the removal of an intake water pollutant, the RWQCB may establish limitations that reflect the lower mass and concentration of the pollutant achieved by such treatment...*

*The permit shall specify how compliance with mass- and concentration-based limitations for the intake water pollutant will be assessed. This may be done by basing the effluent limitation on ambient background concentration data. Alternatively, the RWQCB may determine compliance by simultaneously monitoring the pollutant concentration in the intake water and in the effluent. This monitoring may be supplemented by monitoring internal waste streams or by a RWQCB evaluation of the use of best management practices."*

As defined in the SIP in Appendix 1:

*"Best Management Practices (BMPs) are methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from the point and nonpoint source discharges including storm water. BMPs include structural and non-structural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities."*

d. Application of Intake Water Credits

To consider Intake Water Credits when establishing discharge limits for a pollutant, the conditions listed above must be met by the discharge, as follows:

- Condition (1) - Concentrations of mercury in water samples from Clear Lake exceed current water quality standards;
- Condition (2) – There are, as yet, no TMDLs established for Clear Lake;
- Condition (3) – The Discharger extracts water from Clear Lake, runs it through the air-conditioning system heat exchanger as non-contact cooling water, and discharges the untreated water back into Clear Lake.
- Conditions (4) and (5) –Because the only source of non-contact cooling water is Clear Lake, discharging it back into Clear Lake will not increase the mass of mercury discharged. The process does not alter mercury chemically, but mercury may be more concentrated in the discharge than in Clear Lake. Therefore, a mass-based Effluent Limit for mercury qualifies for Intake Water Credits, while a concentration-based Effluent Limit does not.

e. Concentration-Based Effluent Limitation for Mercury

Clear Lake is known to contain mercury concentrations in excess of water quality standards. The Discharger extracts water from Clear Lake, runs it through the air-conditioning system heat exchanger as non-contact cooling water, and discharges water back into Clear Lake. The non-contact cooling water discharge into Clear Lake may contain mercury in excess of water quality standards and at higher concentrations than the water in Clear Lake. Methylmercury probably also concentrates in the discharge and is the form of mercury of greatest concern. However, there is currently no standard method to translate the fish tissue concentration of methylmercury into a water column concentration. The Code of Federal Regulations, 40 CFR 122.44(d)(1)(iii), states that when a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above allowable numeric criteria for an individual pollutant, the NPDES permit must contain an effluent limit. Clear Lake is a source of drinking water. Therefore, based on the considerations enumerated and discussed above, a concentration-based Effluent Limitation has been established for mercury, in this Order, at the Human Health Criterion of 0.050 µg/l.

f. Mass-Based Effluent Limitation for Mercury

This Order contains a mass-based Effluent Limitation for mercury, such that the mass of mercury in the discharge shall not exceed the weekly average mass of mercury in water samples from Clear Lake. The mass of mercury in the discharge and in lake samples must be calculated for each reporting period.

This Order contains a Provision that allows the Board to reopen the Order to add or change the mercury Effluent Limitations based on the adoption of new mercury criteria by USEPA and/or information collected by the Discharger in the monthly monitoring reports.

**pH**

The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the “...pH shall not be depressed below 6.5 nor raised above 8.5.” No reliable dilution is available in the receiving stream, so the Order includes effluent limitations for pH at the Basin Plan objective values.

**Toxicity**

The Basin Plan states that “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.” The Basin Plan requires that “As a minimum, compliance with this objective...shall be evaluated with a 96-hour bioassay.” Order No. \_\_\_ requires both acute and chronic toxicity monitoring to evaluate compliance with this water quality objective.

The Basin Plan further states that “...effluent limits based upon acute biotoxicity tests of effluents will be prescribed...”. Effluent limitations for acute toxicity have been included in the Order.

**Temperature**

Clear Lake has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that “At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature.” The Order includes a receiving water limitation based on this objective.

The permit contains a Receiving Water Limitation, as required to comply with the Basin Plan’s water quality objective for temperature. The limitation for temperature requires that the discharge not cause the receiving water temperature to increase by more than 5°F. Temperature data of the intake and effluent non-contact cooling water has not been submitted by the Discharger and Clear Lake temperature is not available either. The non-contact cooling water is passed through the heat exchanger of the air conditioning system and there is reasonable potential that the effluent temperature is elevated compared to the receiving water, which is Clear Lake. The volume of potentially heated effluent discharged to the receiving water is probably not significant enough to cause an increase of more than 5°F in Clear Lake. The permit requires daily sampling of the effluent temperature to be submitted to the Regional Water Board and also summarized annually, and submitted to the California Department of Fish and Game (DFG) for their evaluation and consultation on any thermal impacts to Clear Lake from the Discharger’s effluent discharge.

**Turbidity**

The Basin Plan includes the following objective:

*“Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:*

- *Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.*
- *Where natural turbidity is between 5 and 10 NTUs, increases shall not exceed 20 percent.*
- *Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU.*
- *Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.”*

The permit contains a Receiving Water Limitation, as required to comply with the Basin Plan’s water quality objective for turbidity. The effect of discharging the effluent into the receiving water is likely to be insignificant to the turbidity of Clear Lake and there is no practical method available that would measure in turbidity in Clear Lake. The permit requires weekly turbidity monitoring of the non-contact cooling water effluent and a provision with a reopener clause if information becomes available that shows the discharge has an impact on the turbidity of Clear Lake.

#### ***Narrative Limitations***

The Basin Plan contains narrative Water Quality Objectives for Inland Surface Waters, beginning on page III-2.00. In the proposed NPDES permit, Receiving Water Limitations Nos. 1 (biostimulatory substances), 2 (color), 4 (floating material), 5 (oil and grease), 7 (settleable material), 8 (tastes and odors), and 10 (toxicity), are based on narrative Basin Plan objectives.

#### **RECEIVING WATER BENEFICIAL USES**

The receiving water body is Clear Lake, which discharges to Cache Creek, which flows into the Yolo Bypass and drains toward the Sacramento River Delta. Based on the available information, the worst-case dilution is assumed to be zero, to provide protection for the receiving water beneficial uses. The impact of assuming zero dilution within the receiving water is that discharge limitations based on acute and chronic toxicity are end-of-pipe limits with no allowance for dilution within the receiving water.

The Basin Plan states, on page II-1.00, “*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...*” and “*disposal of wastewaters is [not] a prohibited use of waters of the state; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*” The existing and potential beneficial uses that currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1 of the Basin Plan. As designated in the Basin Plan, Clear Lake is in the Clear Lake Hydrologic Subarea (513.52), Upper Cache Creek Hydrologic Area (513.50), and Cache Creek Hydrologic Unit (513.00), in the Sacramento Hydrologic Basin. The beneficial uses of Clear Lake, as identified in Table II-1 of the Basin Plan, are municipal and domestic supply, agricultural irrigation and stock watering, body contact water recreation, non-contact water recreation, warm and cold freshwater aquatic habitat, warm spawning habitat, wildlife habitat and other aquatic resources. Other beneficial uses

identified in the Basin Plan apply to Clear Lake, including navigation, aesthetic enjoyment, groundwater recharge and freshwater replenishment.

The beneficial uses of the underlying ground water, as identified in the Basin Plan, are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

State Water Resources Control Board Resolution No. 88-63 "Sources of Drinking Water" provides that *"All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Water Boards..."*

#### SEWAGE – LAND DISPOSAL DISCHARGE

Wastewater to the sewage treatment plant is made up of domestic wastes, the filter backwash from the swimming pools and spa facilities, and the filter backwash from the water treatment plant (Discharge Point 002). The wastewater is first pumped to a primary clarifier, then to a bentonite lined aeration pond, and then to a neoprene lined secondary settling pond (South Pond), where automated chlorine residual measurement and chlorine dosing takes place. A third concrete lined pond (North Pond) is generally used for flow control. Two subsurface leach fields are located under the three lined ponds. All of the land disposal system is located on the Discharger's property.

The chlorine-disinfected effluent is released to the leach fields under the ponds, which are designed to dispose of wastewater by percolation. The intentional disposal of wastewater by percolation presents a reasonable potential that pollutants may migrate to groundwater. In accordance with Resolution 68-16, this Order contains a Limitation requiring no degradation of groundwater.

The Discharger currently has no groundwater monitoring wells. This permit requires the Discharger to prepare a groundwater quality assessment report after installing groundwater monitoring wells sufficient to determine the wastewater impacts on groundwater quality. The groundwater study shall also determine if wastewater flows underground into Clear Lake.

The Discharger uses ponds for the treatment and disposal of wastewater. Pond levees can fail due to poor maintenance or overtopping due to high water or wave action. Wastewater ponds can also emit significant odors if the dissolved oxygen level drops below 1.0 mg/l. Ponds containing wastewater can also create a significant breeding ground for mosquitoes if not properly maintained. This permit contains limitations that require: proper maintenance of the pond levees; a minimum dissolved oxygen concentration; and, a minimum freeboard to avoid overflows and unacceptable odors.



**ATTACHMENT A**

Vicinity Map  
 Konocti Harbor Resort & Spa  
 Lake County

USGS 7.5 Minute Topographic Series  
 Clearlake Highlands Quadrangle  
 and Vicinity





ATTACHMENT B  
Site Map

Konocti Harbor Resort & Spa  
Lake County

USGS 7.5 Minute Topographic Series  
Clearlake Highlands Quadrangle



Section 10,  
T13N, R8W, MDB&M



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