

## INFORMATION SHEET

ORDER NO.

THE RUMSEY BAND OF WINTUN INDIANS

CACHE CREEK GOLF CLUB WATER RECLAMATION PROJECT

YOLO COUNTY

### **Background**

The Rumsey Band of Wintun Indians owns and operates a wastewater treatment facility (WWTF) that serves the Cache Creek Casino Resort and Hotel near the town of Brooks in western Yolo County. The Discharger is constructing a golf course, clubhouse, and ancillary facilities known as the Cache Creek Golf Club, and plans to use reclaimed tertiary disinfected wastewater to irrigate the golf course.

The WWTF and part of the golf course are on land held in trust for the Discharger by the United States Bureau of Indian Affairs (“trust land”), but the clubhouse, ancillary facilities, and portions of the golf course are on land owned in fee simple by the Discharger (“fee land”). The WWTF and discharges of waste to trust land are regulated by the United States Environmental Protection Agency (USEPA) and are not subject to regulation by the Regional Water Board. However, the Regional Water Board has the authority to enforce applicable laws, regulations, and policies with respect to discharges that occur outside of trust land, and with respect to water quality degradation or pollution that may originate on trust land, but is detectable outside the confines of trust land. Therefore, this Order regulates discharges of waste to the fee land portion of the golf club facility and potential degradation or pollution of surface water or groundwater that may occur outside of trust land as a result of the discharge.

The WWTF design flow is 225,000 gallons per day (gpd) as an average daily flow; 350,000 gpd as a peak weekend daily flow; and 475,000 gpd as a peak holiday daily flow. A microfiltration membrane bioreactor (MBR) system provides tertiary treatment. Tertiary treated wastewater from the MBR system is currently disinfected by ultraviolet light and is then stored or transferred for recycling or land disposal on trust land. The Discharger proposes to modify the disinfection system so that disinfection will be achieved solely by the use of sodium hypochlorite.

Tertiary disinfected effluent will be reclaimed to irrigate the golf course, which is approximately 3,000 feet east of the casino complex along the western bank of Cache Creek. The southern portion of the golf course and the irrigation storage pond (South Lake) are on trust land. The northern portion of the golf course, the driving range, and a large decorative pond (North Lake) are on fee land. A clubhouse and a golf cart barn will also be on fee land.

Reclaimed water will supply approximately 44 percent of the total golf course irrigation demand. During the rainy season, treated effluent will be stored at the WWTF or discharged to a leachfield system on trust land. Additionally, some of the disinfected effluent is used for toilet flushing at the casino.

The treated effluent greatly exceeds applicable water quality limits for electrical conductivity, total dissolved solids, sodium, and chloride due to use of an ion exchange water softening system for the casino complex water supply. Despite the dilution with fresh water for irrigation, based on the high salinity of the treated effluent relative to underlying groundwater, the proposed discharge poses a threat to groundwater quality.

The derivation of selected terms and conditions of the proposed Order is discussed below.

### **Proposed Order Terms and Conditions**

The antidegradation directives of Section 13000 of the California Water Code require that waters of the State that are better in quality than established water quality objectives be maintained “consistent with the maximum benefit to the people of the State.” Waters can be of high quality for some constituents or beneficial uses and not others. Policies and procedures for complying with this directive are set forth in the Basin Plan (including by reference State Water Board Resolution No. 68-16, “Statement of Policy With Respect to Maintaining High Quality Waters in California,” or “Antidegradation” Policy).

Resolution 68-16 is applied on a case-by-case, constituent-by-constituent basis in determining whether a certain degree of degradation can be justified. It is incumbent upon the Discharger to provide technical information for the Regional Water Board to evaluate that fully characterizes:

- All waste constituents to be discharged;
- The background quality of the uppermost layer of the uppermost aquifer;
- The background quality of other waters that may be affected;
- The underlying hydrogeologic conditions;
- Waste treatment and control measures;
- How treatment and control measures are justified as best practicable treatment and control;
- The extent the discharge will impact the quality of each aquifer; and
- The expected degree of degradation.

In allowing a discharge, the Regional Water Board must comply with CWC section 13263 in setting appropriate conditions. The Regional Water Board is required to implement the Basin Plan and consider the beneficial uses to be protected along with the water quality objectives essential for that purpose. The Regional Water Board need not authorize the full utilization of the waste assimilation capacity of the groundwater (CWC 13263(b)) and must consider other waste discharges and factors that affect that capacity.

Some degradation of the groundwater for certain constituents is consistent with maximum benefit to the people of California because the technology, energy, and waste management advantages of advanced treatment and water recycling outweigh the environmental impact of a facility that would otherwise rely on percolation for effluent disposal. Economic prosperity of local communities is of maximum benefit to the people of California, and there is therefore sufficient reason to accommodate this wastewater discharge, provided terms of reasonable degradation are defined and met. The proposed Order authorizes some degradation consistent with the maximum benefit to the people of the State.

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***Groundwater Limitations***

The limited groundwater quality information provided in the RWD is not sufficient to determine final groundwater limitations. The interim groundwater limitations of the proposed Order are limited to those constituents known to be present in the waste, except for trihalomethanes, which are expected to be present in the waste because of chlorine disinfection. An interim groundwater limitation for each constituent was selected in accordance with the most stringent limits set forth in the Basin Plan. The values tabulated below reflect water quality objectives that must be met to maintain specific beneficial uses of groundwater. The most stringent value applies unless it has been demonstrated that background groundwater quality exceeds that value or the beneficial use that is it designed to protect could not exist. For instance, the most stringent limit for TDS (450 mg/L) is based on protection of irrigation supply for the most salt-sensitive crops. If it can be shown that salt-sensitive crops will not be grown due to local climate and/or soil conditions, then the next highest limit applies. In general, the burden of making such a demonstration falls on the discharger.

<u>Constituent</u>	<u>Units</u>	<u>Value</u>	<u>Beneficial Use</u>	<u>Criteria or Justification</u>
Arsenic	ug/L	0.004	MUN <sup>1</sup>	California Public Health Goal <sup>10</sup>
Cadmium	ug/L	0.07	MUN <sup>1</sup>	California Public Health Goal <sup>10</sup>
Chloride	mg/L	106	AGR <sup>2</sup>	Chloride sensitivity on certain crops irrigated via sprinklers <sup>3</sup>
		142	AGR <sup>2</sup>	Chloride sensitivity on certain crops <sup>3</sup>
		250	MUN <sup>1</sup>	Recommended Secondary MCL <sup>4</sup>
		500	MUN <sup>1</sup>	Upper Secondary MCL <sup>4</sup>
Chromium, total	ug/L	50	MUN <sup>1</sup>	Primary MCL <sup>5</sup>
Copper	ug/L	170	MUN <sup>1</sup>	California Public Health Goal <sup>10</sup>
Iron	ug/L	0.3	MUN <sup>1</sup>	Secondary MCL <sup>5</sup>
Lead	ug/L	2	MUN <sup>1</sup>	California Public Health Goal <sup>10</sup>
Manganese	ug/L	0.05	MUN <sup>1</sup>	Secondary MCL <sup>5</sup>
Mercury	ug/L	1.2	MUN <sup>1</sup>	California Public Health Goal <sup>10</sup>
Nickel	ug/L	12	MUN <sup>1</sup>	California Public Health Goal <sup>10</sup>
Sodium	mg/L	69	AGR <sup>2</sup>	Sodium sensitivity on certain crops <sup>3</sup>
Zinc	ug/L	2,000	AGR <sup>2</sup>	Irrigation of crops <sup>3</sup>
		2,100	MUN <sup>1</sup>	USEPA Cancer Risk Estimate <sup>6</sup>
Total Dissolved Solids	mg/L	450 <sup>8</sup>	AGR <sup>2</sup>	Salt sensitivity for certain crops <sup>3</sup>
		500	MUN <sup>1</sup>	Recommended Secondary MCL <sup>4</sup>
		1,000	MUN <sup>1</sup>	Upper Secondary MCL <sup>4</sup>
Total Coliform Organisms	MPN/100 ml	Less than 2.2	MUN <sup>1</sup>	Basin Plan

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<u>Constituent</u>	<u>Units</u>	<u>Value</u>	<u>Beneficial Use</u>	<u>Criteria or Justification</u>
Trihalomethanes	ug/L	80	MUN <sup>1</sup>	Federal MCL <sup>9</sup>
Bromoform	ug/L	4	MUN <sup>1</sup>	USEPA Cancer Risk Estimate <sup>6</sup>
Bromodichloromethane	ug/L	0.27	MUN <sup>1</sup>	Cal/EPA Cancer Potency Factor <sup>7</sup>
Chloroform	ug/L	1.1	MUN <sup>1</sup>	Cal/EPA Cancer Potency Factor <sup>7</sup>
Dibromochloromethane	ug/L	0.37	MUN <sup>1</sup>	Cal/EPA Cancer Potency Factor <sup>7</sup>
pH	pH Units	6.5 to 8.5	MUN <sup>1</sup>	USEPA Secondary MCL <sup>8</sup>
		6.5 to 8.4	AGR <sup>2</sup>	Irrigation of crops <sup>3</sup>

- 1 Municipal and domestic supply.
- 2 Agricultural supply.
- 3 Ayers, R. S. and D. W. Westcot, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985).
- 4 Title 22, California Code of Regulations (CCR), Section 64449, Table 64449-B.
- 5 Title 22, CCR, Section 64449, Table 64449-A.
- 6 USEPA Integrated Risk Information System.
- 7 Cal/EPA Toxicity Criteria Database (OEHHA).
- 8 40 Code of Federal Regulations, 143.3.
- 9 40 Code of Federal Regulations, 141.64.
- 10 Negligible cancer risk level for drinking water (OEHHA).

Groundwater upgradient of the golf course may be of high quality relative to the mixture of fresh water and treated effluent to be used for golf course irrigation. Therefore, groundwater monitoring is required. If determination of background concentrations supports this empirical observation, then the most stringent limits cited in the table above will be the final groundwater limitation for those constituents. Otherwise, the statistically determined background groundwater concentration will be the final groundwater limitation for those constituents (and any others whose background groundwater concentrations exceed applicable water quality limits).

***Discharge Prohibition A.1 and Provision G.1.a***

Although the California Department of Health Services (DHS) has approved the Discharger’s Title 22 Engineering Report and related design submittals, the Discharger has not yet completed a tracer study to demonstrate that the new effluent disinfection systems meets DHS’ reliability requirements. Therefore, Discharge Prohibition A.1 prohibits irrigation with recycled water until DHS approves the tracer study report, and Provision G.1.a specifies the required contents and time schedule for submittal of the report.

***Effluent Limitations***

The effluent limitations for BOD, settleable solids, and total nitrogen are technology-based, and the discharger should be able to consistently comply with these limits if influent flows do not exceed the design criteria and the WWTF is well operated and maintained.

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Because of the high salinity of the effluent and the potential for groundwater pollution due to salinity, it is appropriate to limit the salinity of the discharge unless it can be shown that effluent limits are not needed to ensure full compliance with the Groundwater Limitations and State Board Resolution No. 68-16. The proposed effluent limitations for salinity constituents are structured as follows:

1. The interim effluent salinity limitations, which are effective upon adoption of this Order, are intended only to ensure that the salinity of the treated effluent does not increase above current levels.
2. The final effluent salinity limitations, which become effective on 30 June 2008, require that the Discharger significantly reduce TDS, sodium, and chloride concentrations to ensure that reclamation will not cause unreasonable degradation of groundwater quality.

Interim Effluent Salinity Limitations: The interim effluent limitations for total dissolved solids and chloride were established based on analytical results for 29 effluent samples obtained between 23 January and 5 April 2006. The samples were analyzed for TDS and chloride only. Because the data exhibited significant temporal variability during that period, it is not practical to impose meaningful effluent limitations based on a 30-day average and/or a monthly maximum concentration. Therefore, interim effluent limitations were established for the flow-weighted mean concentration using the available data. A flow-weighted mean is appropriate because it allows for temporal variability (which the Discharger may not be able to readily control) while ensuring that the variability does not cause excess overall salinity loading rates to the reclamation area.

For TDS, the arithmetic mean of the 29-sample data set was rounded up to the nearest 100 mg/L to establish the limit for the 30-day flow weighted average concentration. For chloride, the arithmetic mean of the 29-sample data set was rounded up to the nearest 10 mg/L to establish the limit for the 30-day flow weighted average concentration. Because sodium was not routinely analyzed, the effluent limitation for sodium was established based on the results for a single effluent sample. However, the corresponding chloride result for that sample was similar to the average chloride concentration of the other 29 samples, so the single sodium result was assumed to be representative of the effluent. The single sodium result was also rounded up to the nearest 10 mg/L to establish the limit for the 30-day flow weighted average concentration.

Final Effluent Salinity Limitations: Reclaimed water will be approximately 44 percent of the total water supply for the golf course, and the remainder will be supplied from Cache Creek. Therefore, the salinity of the reclaimed water will be diluted, and it is reasonable for the final effluent salinity limitations to consider the effects of dilution. However, the true extent of the dilution is not known because the RWD did not provide sufficient salinity monitoring data for the Cache Creek water supply, so it is not possible to determine protective limits based on effluent quality alone. Therefore, the final salinity effluent limitations were established for the flow-weighted mean concentration of the blended irrigation water (reclaimed water plus Cache Creek water) as follows.

For TDS, a 330 mg/L domestic use allowance was added to the highest reported TDS result for the casino water supply (320 mg/L) to establish the limit for the 30-day flow weighted average

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concentration of 650 mg/L. Based on the limited data available, the TDS concentration in groundwater underlying the golf course is no lower than 600 mg/L on average, so this limit should be protective. For chloride and sodium, the applicable water quality limits for protection of the beneficial uses of groundwater were assigned as limits for the 30-day flow weighted average concentration.

If the results of the *Background Groundwater Quality Report*, or any subsequent technical or monitoring report, show that the discharge of reclaimed water has caused, or is likely to cause, exceedance of any applicable water quality limit outside the boundary of trust land, Provision G.2 requires that Discharger submit an *Antidegradation Policy Compliance Report* at the request of the Executive Officer. The *Antidegradation Policy Compliance Report* must propose a detailed plan and schedule for achieving full compliance with the Antidegradation Policy.

The effluent limitations for turbidity and total coliform organisms are consistent with the Title 22 regulations for disinfected tertiary effluent recycled for use at golf courses.

#### ***Other Discharge Specifications***

Most of the Discharge Prohibitions and Discharge Specifications are identical, or at least similar to, those prescribed for similar Publicly Owned Treatment Works (POTWs). However, because of the Discharger's special status as a Native American tribe operating a WWTF on land held in trust for the tribe, prohibitions and specifications that are typically included in WDRs to regulate the design, operation, and maintenance of the WWTF are not applicable to the Discharger. Therefore, the Prohibitions and Specifications of this Order are generally limited to performance standards that must be met outside of tribal lands (i.e., on the fee portions of the golf course and waters of the State outside of trust land).

#### ***Monitoring Requirements***

Section 13267 of the CWC authorizes the Regional Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. The proposed Order requires monitoring of tertiary effluent, the reclaimed water storage lake on the golf course, golf course reclamation areas, the golf course's fresh water supply, and groundwater. In order to adequately characterize its wastewater effluent, the Discharger is required to monitor for settleable solids, BOD, coliform, TDS, nitrogen, sodium, and chloride. Monitoring of additional minerals is required on an annual basis. To ensure that the reclaimed water storage ponds do not create nuisance conditions, the Discharger is required to monitor freeboard available and dissolved oxygen content weekly.

Title 27 regulations pertaining to groundwater monitoring and the detection and characterization of waste constituents in groundwater have been successfully implemented for several years. No regulation currently specifies similar criteria for discharges of non-designated waste to land. However, because of the character of the reclaimed water and the shallow depth to groundwater, it is appropriate that the Title 27 groundwater monitoring and evaluation procedures be applied to this discharge.

The Discharger must monitor groundwater for constituents present in the discharge and capable of reaching groundwater and violating groundwater limitations. The Discharger's existing network of

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groundwater monitoring wells is not adequate to fully characterize background water quality and potential groundwater impacts beyond the boundaries of trust land for the wastewater treatment facility and reclamation areas.

### **Reopener**

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. However, information is presently insufficient to develop final groundwater limitations, so the proposed Order contains interim limitations. Additional information must be developed and documented by the Discharger as required by the Monitoring and Reporting Program of the proposed Order. As this additional information is obtained, decisions will be made concerning the best means of assuring the highest water quality possible and that could involve substantial cost. It may be appropriate to reopen the Order if applicable laws and regulations change, but the mere possibility that such laws and regulations may change is not sufficient basis for reopening the Order. The CWC requires that waste discharge requirements implement all applicable requirements.

ALO:10/12/06