

STAFF REPORT

**CEASE AND DESIST ORDER
FOR
THE CITY OF DIXON
DIXON WASTEWATER TREATMENT FACILITY
SOLANO COUNTY**

INTRODUCTION

The City of Dixon wastewater treatment facility (WWTF) in Dixon, Solano County is regulated by Waste Discharge Requirements (WDRs) Order No. 94-187. The WWTF serves the City of Dixon, and comprises a headworks, thirteen unlined wastewater treatment/storage ponds covering approximately 140 acres, eight percolation/evaporation ponds on 160 acres, and 120 acres of additional flood irrigation disposal areas. The Discharger relies solely on percolation and evaporation to dispose of all wastewater.

Average daily dry weather flows to the WWTF in 2004 were approximately 1.46 mgd. Infiltration and inflow (I/I) is a recognized problem, with total annual I/I flows ranging from 21 to 91 million gallons between 1999 and 2004. Prior to 1995, the City of Dixon adopted an ordinance that limits residential growth to three percent per year. However, commercial and industrial growth are not limited by ordinance.

The Discharger's effluent is relatively saline due to a saline and hard water supply. The Discharger believes that many residences and businesses use water softeners, and that the discharge of brine from the water softeners accounts for most of the excess salinity in the effluent. The Discharger does not disinfect the wastewater prior to discharge to the 280 acres of disposal ponds and disposal land.

In April 2004, staff issued a draft Cease and Desist Order because the Discharger has violated both the WDRs and Cease and Desist Order No. 97-193, by failing to minimize or control groundwater pollution beneath the wastewater ponds and disposal areas. The Discharger requested a lengthy extension to provide comments on the proposed Order. Because of the nature of the violations, the Discharger's compliance history, and the proposed growth within the City, the extension was not granted. The Discharger has not yet provided written comments, but has arranged to discuss the draft Order with staff the week before the Board meeting. This discussion may result in proposed late revisions.

Previous Enforcement Orders

On 3 May 1996, the Regional Board adopted Cease and Desist (C&D) Order No. 96-152 because of a major I/I problem that caused discharges of wastewater to Dickson Creek in March and April 1995 and February 1996. The 1996 C&D Order required that the Discharger construct capacity improvements in two phases. The discharger completed the first phase expansion project, which provided adequate capacity for 1.31 mgd average daily dry weather flow. However, the 1996 average daily dry weather flow was 1.48 mgd, indicating that the WWTF still did not have adequate capacity to accommodate then-current flows. Additionally, staff determined that the proposed Phase 2 project would not provide adequate wastewater storage and disposal capacity for future growth. Staff was also concerned that the Discharger's groundwater monitoring data indicated that the facility had degraded groundwater quality. The Discharger subsequently withdrew its plans for the Phase 2 project.

Therefore, the Regional Board rescinded C&D Order No. 96-152 and adopted C&D Order No. 97-193 in September 1997. The 1997 C&D Order required that the Discharger:

1. Evaluate groundwater degradation by 15 July 1998;
2. Eliminate the migration of pollutants to groundwater as appropriate by 1 December 2001;
3. Evaluate current and projected future dry weather influent flows by 15 July 1998; and
4. Expand the WWTF to accommodate existing flows and at least five years of projected growth.

VIOLATIONS OF THE WDRs and 1997 C&D ORDER

The City of Dixon has made some effort to comply with the 1997 C&D Order, but has not achieved full compliance, as discussed below.

Groundwater Degradation

The Groundwater Limitations of the WDRs state that the discharge may not cause groundwater degradation nor violate the narrative or numeric water quality objectives for groundwater as set forth in the Basin Plan.

The Discharger submitted a technical report to comply with the 1997 C&D Order, which concluded that groundwater beneath the wastewater treatment ponds contained total dissolved solids at concentrations exceeding background groundwater quality. The report was not adequate and staff requested that the Discharger perform additional monitoring and revise the report. The revised Groundwater Degradation Assessment Report did not present a complete technical evaluation of groundwater quality, but it included an evaluation of several alternatives for reducing or controlling groundwater degradation. The recommended alternative did not comply with State Board Resolution No. 68-16 and was therefore rejected by staff. Since that time, the Discharger has proposed strategies for reducing effluent salinity and/or modifying the discharge to mitigate groundwater pollution. However, despite several informal and formal requests by staff, the Discharger has not implemented any of the proposed control measures.

Current groundwater monitoring data for the facility show that the groundwater pollution continues unabated, as summarized in the table below.

Constituent	First Quarter 2005 Concentration Range		Water Quality Limit
	Upgradient Wells	Downgradient Wells	
TDS, mg/L	640 to 740	740 to 1,200	450
Sodium, mg/L	67 to 130	110 to 280	69
Chloride, mg/L	10 to 41	110 to 270	106

These data show that that the Discharger has failed to comply with the groundwater limitations of the WDRs and, therefore, has violated C&D Order No. 97-193.

WWTF Capacity

The Discharger completed a timely evaluation of current and projected flows to comply with C&D Order No. 97-193, and performed an I/I study to assess the causes of the excess I/I. The Discharger has also

completed major I/I improvements and installed some pond aerators. These actions have increased the facility treatment, storage, and disposal capacity to 1.55 mgd. The Discharger's water balance shows that the existing wastewater facility can accommodate average daily dry weather flows of at least 1.69 mgd plus approximately 225 million gallons per year of I/I flows. Once the Discharger installs additional aeration equipment (as proposed to increase the treatment capacity to the same level as the hydraulic capacity), the Discharger will have fully complied with the capacity expansion requirements of C&D Order No. 97-193. The facility will then have sufficient excess capacity to accommodate either three years of residential growth at the rate allowed by ordinance or an increase of 230,000 gpd average daily dry weather flow from other projects, such as the planned Dixon Downs Racetrack complex.

On 30 September 2004, the Discharger submitted a RWD, which proposed improvements in two phases:

1. Phase 1 (the "Interim Improvements Project") would increase the treatment capacity to 1.69 mgd, and storage/disposal capacity would be increased by converting the land application area to additional percolation ponds and ripping the treatment and storage ponds to enhance percolation. Two of the secondary treatment ponds would be used to capture excess storm water during the rainy season, percolation of which would partially dilute groundwater pollution beneath the wastewater treatment ponds.
2. Phase 2 (the "Stage 2 Project") would consist of additional aeration capacity at the existing treatment facility and construction of new percolation ponds at an off-site location where underlying groundwater would not be degraded by the effluent discharge. The off-site percolation ponds would provide disposal only for "average year" influent flows, and treatment and disposal would continue in the existing unlined treatment ponds indefinitely.

Staff rejected this proposal because it did not comply with applicable policy and would have allowed continued violation of the 1997 C&D Order.

The Discharger has complied with the intent of C&D Order No. 97-193 with respect to capacity improvements and I/I control. However, if all planned development is considered, the existing WWTF does not have sufficient treatment and disposal capacity to accommodate projected residential, commercial, and industrial growth without relying on increased evaporation and percolation (as proposed in the September 2004 RWD), which will only exacerbate groundwater degradation at the facility.

PROPOSED CEASE AND DESIST ORDER

The primary purpose of the proposed C&D Order is to ensure that the Discharger implements facility and operational improvements to bring the facility into compliance with the Groundwater Limitations of the WDRs. However, although there is currently sufficient capacity, ensuring adequate capacity for planned future development also must be addressed.

Therefore, the proposed Order contains the following new flow limitations and requirements:

1. Effective upon adoption of the proposed Order, the average daily dry weather influent flow will be limited to 1.69 mgd and, to account for the large I/I contribution, the total annual influent flow will be limited to 700 million gallons per year. The new flow limitations will allow a flow increase for new development of up to 230,000 mgd. This increase is sufficient to support a residential growth rate of 3 percent per year through 2008. However, because of planned commercial projects, the Discharger

may be forced to delay those projects or further limit residential growth until capacity improvements are constructed.

2. Effective 30 July 2008, the concentration of any waste constituent in water that percolates below the base of any wastewater pond or the ground surface of any land application area cannot exceed background groundwater quality or the applicable water quality limit, which ever is higher. The California Water Code states that a Regional Board cannot prescribe a specific method of compliance in WDRs or enforcement orders. Therefore, these effluent limits serve as a performance standard that ensures compliance with the Groundwater Limitations of the WDRs while allowing the Discharger to choose the specific means of compliance. As a practical matter, the discharger will likely have to prohibit water softener brine disposal, treat the wastewater to remove salts, and/or provide impermeable liners for the ponds.

The proposed Order also includes the following milestone tasks to ensure that the Discharger is progressing towards compliance with the new effluent limitations and completing previously planned improvement projects to control I/I:

3. By 30 August 2005, the Discharger is required to submit a statistical determination of background groundwater quality to allow staff to determine numerical effluent limitations that will implement the proposed Order's new narrative effluent limitations.
4. By 30 December 2005, the Discharger is required to submit a Wastewater Facilities and Financing Plan for a two-phase improvement project. Phase 1 will include all improvements needed to ensure compliance with the effluent limitations of this Order. Phase 2 will include all improvements needed to provide capacity to accommodate all planned growth through 2014. The following tasks represent milestones towards full implementation of the facilities plan:
 - a. A Phase 1 90% Design Report is due by 30 June 2006;
 - b. A Phase 2 Pre-Design Report is due by 30 June 2007;
 - c. A Report of Waste Discharge (RWD) including a Phase 2 90% Design Report is due by 30 December 2007;
 - d. A Phase 1 Completion Report is due by 30 September 2008; and
 - e. A Phase 2 Completion Report is due by 30 July 2009.
5. By 30 December 2006, the Discharger is required to certify completion of its proposed Headworks and Aeration Improvements Project, which includes connecting a new trunk sewer to the WWTF and installation of additional aerators to increase the treatment capacity to at least 1.69 mgd.
6. The proposed Order also requires that the Discharger submit quarterly compliance status reports.

OUTSTANDING ISSUES

The tentative C&D Order was transmitted to the Discharger on 5 May 2005, and comments were due by 23 May 2005. On 11 May 2005, the Discharger informed staff that additional time was needed to allow the City Council to personally consider the C&D Order and direct City staff's comments. City staff stated that the earliest possible City Council hearing date was 14 June 2005, nine days before the planned Regional Board hearing. The City Manager subsequently transmitted a letter to formally request an extension on 18 May 2005. Staff carefully considered this request and concluded that it was appropriate to proceed with the planned 23/24 June hearing date for the following reasons:

1. The groundwater degradation is severe and ongoing;
2. The City has been aware of the groundwater limitations since 1994 when the WDRs were adopted;
3. The City has been aware of the requirement to evaluate groundwater quality and complete improvements as needed to comply with the groundwater limitations since 1997, when the latest C&D Order was adopted;
4. The City has been aware of its failure to comply with the groundwater limitations since 1998;
5. Despite several requests by Regional Board staff between 1998 and 2004, the Discharger has not prioritized compliance with the WDRs or the 1997 C&D, but has instead focused its efforts on correcting I/I and expanding to accommodate growth;
6. On 11 April 2005, staff met with the Discharger to discuss the September 2004 Report of Waste Discharge, and informed them that the proposed plan for continued discharge of wastewater to the existing pond treatment, storage, and disposal system would not ensure compliance with the groundwater limitations, and therefore did not comply with the Basin Plan. The Discharger was informed that revision of the WDRs was not appropriate, and that a revised C&D Order would be proposed for the Regional Board's consideration at the June 2005 meeting; and
7. Because of the two previous C&D Orders, the Discharger should be familiar with the process and could have briefed the City Council after the 11 April meeting and sought authority to act on the Council's behalf.

SUMMARY AND RECOMMENDATION

Staff will continue to be available to meet with the Discharger in the days prior to the Regional Board meeting. A meeting is currently set for 17 June, which is after the date by which the Dixon City Council will discuss the proposed Order. This meeting may result in staff proposing late revisions.

Staff recommends that the Regional Board adopt the proposed Cease and Desist Order for the City of Dixon, with possible late revisions.

23/24 June 2005 Regional Board meeting

ALO: 9-Jun-05