

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0010

CEASE AND DESIST ORDER

FOR  
CITY OF LAKEPORT MUNICIPAL SEWER DISTRICT  
WASTEWATER TREATMENT FACILITY  
LAKE COUNTY

TO CEASE AND DESIST  
FROM DISCHARGING CONTRARY TO REQUIREMENTS

The Regional Water Quality Control Board, Central Valley Region, (hereafter referred to as "Regional Water Board") finds that:

1. Waste Discharge Requirements (WDRs) Order No. 98-207, adopted by the Regional Water Board on 23 October 1998, prescribes requirements for the wastewater system owned and operated by the City of Lakeport Municipal Sewer District (hereafter referred to as "Discharger"). Revised Monitoring and Reporting Program No. 98-207 was issued on 22 April 2004.
2. The Discharger's wastewater treatment and storage system is on the southwestern shore of Clear Lake in Section 1 of T13N, R10W, MDB&M. The facility is southwest of downtown Lakeport on the west side of Highway 29. Assessor's Parcel Numbers for the property are APN 007-003-43 and 46, and 005-035-06, 16 and 18.

**Wastewater Treatment Facility**

3. The WDRs prescribe requirements for the treatment and disposal of a monthly average dry weather flow not exceed 1.05 million gallons per day (mgd) and a maximum daily discharge not to exceed 3.8 million gallons.
4. The Wastewater Treatment Facility (WWTF) is comprised of a domestic wastewater collection system, a treatment facility, a storage reservoir, a tailwater recapture system and disposal fields. The collection system consists of approximately 250,000 linear feet of sewer main and laterals and collects wastewater from approximately 5,150 residents. The treatment system is designed to treat 1.05 mgd of domestic sewage in a baffled pond system. The effluent is disinfected to secondary standards prior to discharge to a 600 acre-foot storage reservoir (at two feet of freeboard) and to a land application area.
5. The Discharger states that the discharge from the storage reservoir is used to irrigate approximately 242 acres of pasture and open areas (land application areas). However, the WDRs state that the land application area consists of 340 acres. The Discharger states that 211 acres are spray irrigated and 31 acres are flood irrigated. The land application area is divided into 31 fields. On a typical irrigation day, between nine and ten fields are irrigated on an alternating schedule over a 12-hour period. A different set of irrigation fields are used each day over a three-day period.

## **Violations of the Waste Discharge Requirements**

### Spill Violations

6. Discharge Prohibition No. A.1 of WDRs Order No.98-207 states: *“Discharge of wastes to surface waters or surface water drainage courses is prohibited.”*
7. Discharge Prohibition No. A.2 of WDRs Order No. 98-207 states: *“Bypass or overflow of untreated or partially treated effluent is prohibited.”*
8. Since adoption of WDRs Order No. 98-207 on 23 October 1998, the Discharger has reported 64 spills from the collection system and 3 spills from the treatment system. Of these spills, 33 entered surface waters. The largest of these spills was partially treated wastewater that occurred over an 11 day period in April 2006 and was estimated between 3.6 and 6.6 million gallons. A description of these spills is presented as Attachment A of this Cease and Desist Order.
9. To prevent unauthorized discharges of wastewater to surface water and surface water drainage courses, it is appropriate to require a Spill Contingency Plan.

### Storage Capacity Violations

10. Discharge Specification No. B.11 of the WDRs Order No. 98-207 states: *“Treatment ponds and the storage reservoir shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation and ancillary inflow and infiltration during the nonirrigating season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. The effluent storage reservoir freeboard shall never be less than two (2.0) feet (measured vertically at the spillway) except during years equaling or exceeding the precipitation of a 100-year return period. Treatment ponds shall never have a freeboard of less than 2.0 feet (measured vertically).”*
11. Monthly self-monitoring reports show that the freeboard in the storage reservoir was less than two feet in April and May 2006.
12. The Discharger’s 18 September 2006 water balance, prepared by a California Registered Engineer, shows that there is adequate storage capacity for an average dry weather flow (ADWF) of 0.57 mgd. However, at the currently permitted ADWF of 1.05 mgd, there is inadequate storage capacity. The water balance is based on 100-year annual precipitation data, 600 acre-feet of storage with two feet of freeboard, a beginning storage volume in October of each year of 100 acre-feet or less, and applying wastewater to 260 acres of disposal area (however, the actual sprayfield area is 242 acres).

Staff and the Discharger discussed how to measure the ADWF, and agreed that it is to be an average of the inflows for the months of August, September, and October each year. The ADWF for the years 2003 through 2006 ranges from 0.37 to 0.41 mgd.

Staff's California Registered Engineer worked with the Discharger to revise the water balance to reflect actual conditions and better model inflow/infiltration rates. Staff's revised water balance shows that there is adequate storage capacity for 0.35 mgd ADWF. Therefore, the Discharger does not have sufficient capacity for its current flows, in violation of the WDRs.

However, the Discharger has the ability to rapidly make two changes to increase its capacity: lower the volume remaining in the storage reservoir to 50 acre feet each October, and increase the sprayfield by 90 acres. When staff's revised water balance was changed to reflect these improvements, it shows that the Discharger has adequate storage capacity for an ADWF of 0.42 mgd.

13. The Discharger's 2006 General Plan and related documents found on 12 March 2007 at <http://www.cityoflakeport.com/docs/Project-contacts-August-2006mxd-726200635900PM.pdf> shows that it has approved projects to build 334 homes, and that it has pending applications for an additional 203 homes. If all of these projects are built, then the ADWF will increase from 0.4 mgd to 0.54 mgd, which is significantly over the calculated capacity.
14. Influent flows are currently measured using pump run times from the Linda Lane Pump Station. It is unknown when this was last calibrated and therefore to ensure that influent flows are accurately measured, it is appropriate to require that a proper flow meter be installed and all flow meters be calibrated.

#### Land Application Area Violations

15. Wastewater Reclamation Specification No. E.7 of the WDRs Order No. 98-207 states: *"The Discharger may not spray irrigate effluent during periods of precipitation and for at least 24 hours after cessation of precipitation or when winds exceed 30 mph."*
16. Monthly self-monitoring reports show that the Discharger has violated Wastewater Reclamation Specification No. E.7. During April 2006, rainfall occurred a total of four days and the Discharger applied wastewater to the land application areas via spray irrigation on these days. This discharge during precipitation events resulted in the discharge of wastewater to Clear Lake.

#### Groundwater Violations

17. Groundwater Limitations No. G.1 of the WDRs Order No. 98-207 states: *"The Discharger, in combination with other sources, shall not cause underlying groundwater to be degraded."*
18. The provisions of the WDRs and Revised Monitoring and Reporting Program (MRP) No. 98-207 require that the City of Lakeport install groundwater monitoring wells, sample the installed groundwater monitoring wells, and evaluate groundwater conditions related to the discharge of waste at the facility.

19. Five groundwater monitoring wells were installed at the WWTF and land application area in September 2004. Quarterly groundwater monitoring and sampling reports were submitted between November 2004 and December 2006. Review of the groundwater monitoring data shows that the discharge appears to have degraded groundwater when comparing the upgradient background well to the downgradient wells. Concentrations of Total Dissolved Solids (TDS), boron, iron, manganese, magnesium, potassium, sodium, and chloride in the downgradient wells are higher than those in the upgradient background well. The discharge of waste from the City of Lakeport's WWTF has violated the Groundwater Limitations of WDRs Order No. 98-207. Therefore, it is appropriate to require the Discharger to complete a Background Groundwater Quality Study Analysis and to evaluate Best Practicable Treatment Control Measures to reduce degradation to below water quality objectives.

### **Previous Enforcement**

20. Since issuance of the current WDRs in October 1998, Regional Water Board records indicate that four Notices of Violations (NOVs) have been issued for multiple wastewater spills. These NOVs are summarized as follows:
  - a. An NOV was issued on 15 January 2004 for a 66,000 gallon raw sewage spill that occurred on 27 October 2003 and for five other spills ranging from 25 to 100 gallons that occurred in November and December 2003. The NOV required the submittal of a *Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan* (SSS Plan). The SSS plan was received by Regional Water Board staff on 4 June 2004.
  - b. An NOV was issued on 8 February 2006 for a raw sewage spill estimated at approximately 500 gallons that occurred on 31 December 2005 and the Discharger's inability to report the spill as required by the Standard Provisions and Reporting Requirements of the Waste Discharge Requirements. The spill was caused by (i) excessive amounts of rain accompanied with inflow and infiltration (I/I), (ii) fats, oils, and greases in the main sewer line, (iii) privately operated sewer pumps from nearby motels that are connected to the sewer main, (iv) and an undersized section of the sewer main. Because the Discharger did not report the spill as required by the Standard Provisions and Reporting Requirements, the NOV required the submittal of a technical report describing how they will change internal procedures such that all spills will be reported as required by the Standard Provisions. The NOV also required the submittal of a report showing the repairs that had been completed to reduce the I/I in the spill area, a copy of the ordinance submitted to City of Lakeport regarding the reduction of fats, oils, and grease from nearby restaurants connected to the main sewer line, results of the investigation regarding the operation of the privately operated sewer pumps during periods of heavy rains, and a timeline for the replacement of the undersized section of sewer main. The Discharger has submitted the required information.

- c. An NOV was issued on 3 August 2006 for a discharge of wastewater into Clear Lake from the recapture reservoir. The discharge occurred between 13 and 24 April 2006 and was estimated to be between 3,600,000 and 6,600,000 gallons of partially treated wastewater. The Discharger based the estimate spilled on approximately 15 to 25 percent of the total amount of wastewater (24 million gallons) that was discharged to the spray field during this period. The primary causes of the spill were the inflow from the Willow Point area due to the high lake levels and the uncapped sewer cleanouts, the heavy rains that occurred during this period, the lack of storage capacity, and the inability to allow the land application area to dry prior to irrigation. The NOV required the Discharger to submit a water balance prepared by a California Registered Engineer evaluating the wastewater treatment system's capacity and ability of the ponds to maintain two feet of freeboard on a month-by-month basis. The technical report and water balance prepared by a California Registered Engineer were received on 18 September 2006.
- d. On 9 January 2007, an NOV was issued for two raw sewage spills that occurred on 26 October and 9 November 2006. The October spill was estimated to be between 100 and 200 gallons, and was from an overflowing manhole. The spill entered a flowing storm drain and eventually Clear Lake and was caused by a grease blockage in the sewer pipe. The Discharger states that the sewer pipe was cleaned of grease deposits and video surveyed. The Discharger indicates that this section of sewer pipe will be inspected by the 3<sup>rd</sup> quarter 2007. The November spill, estimated at 90 gallons, occurred from an overflowing manhole located near the Clear Lake High School. The spill did not enter a surface water drainage course. The spill was caused by a blockage in the sewer line from a large mass of wet paper products possibly from vandalism. A video inspection conducted by the Discharger on 9 November 2006 indicated that there were no defects within the manhole or sewer mains.

### **Response to April 2006 Spill and Notice of Violation**

21. On 10 August 2006, the Discharger requested a meeting with Regional Water Board staff to discuss the 3 August 2006 NOV and any additional enforcement action under consideration. The meeting with staff was held on 5 September 2006, and a subsequent meeting was held with the Executive Officer on 6 October 2006. The following information was presented at each meeting and in follow-up correspondence.

The Discharger states that the main cause of the April 2006 spill was the continuous rainfall that occurred beginning in December 2005 and the inability to apply wastewater to the land application area. Once the Discharger began irrigating in April, storm water run-on into the tailwater diversion ditch from the surrounding areas contributed to the increased volumes to the storage reservoir. In addition, the Discharger submitted the following information:

- In response to increased flows at Lift Station C, the City of Lakeport staff inspected the Willow Point RV Park on 1 March 2006 and found approximately 20 uncapped

private sewer cleanouts. The RV Park is immediately adjacent to Clear Lake.

- Extensive flooding occurred along the shores of Clear Lake and in the Willow Point RV Park from 6 March through 27 April 2006. This flooding allowed approximately 65 acre-feet of excess water to enter the collection system through the uncapped sewer cleanouts.
- The majority of the open sewer cleanouts were brought to grade and capped with watertight covers on 24 March 2006 after utilizing the services of the City of Lakeport Building Department, the California Housing and Community Development, and Lake County Environmental Health Department. Wastewater flows at the nearby Lift Station No. 6 have since been reduced. However, follow-up site investigations on 18 and 22 August 2006 indicate that the Recreation Vehicle (RV) Dump Station cleanout remains open and is subject to future flooding. The inspection also found that large amounts of rock and gravel were placed onsite to prevent future flooding of the area.
- The City of Lakeport will monitor the repairs made to the sewer cleanouts through inspections and take flow measurements both upstream and downstream of the Willow Point RV Park.
- The owner of the Willow Point RV Park has received citations from the Lake County Environmental Health Department and the California Department of Housing and Community Development for the two sewer spills. One of the sewer spills was discovered within five feet of the lake level on 1 March 2006.

The impact to beneficial uses from the millions of gallons of wastewater spilled into Clear Lake was negligible because (a) the wastewater was re-disinfected prior to discharge and (b) the heavy rains diluted any constituents of concern. In addition, the Discharger took action to prevent some wastewater from entering Clear Lake. Approximately 597,000 gallons of partially treated wastewater was transported by sewage pumper trucks to the Southeast Regional Wastewater Treatment Facility during a seven-day period from 13 through 21 April 2006 at a cost of approximately \$96,000.

### **Inflow/Infiltration Assessment**

22. Provision H.3.a of the WDRs requires that, in order to resolve capacity issues related to high inflow and infiltration (I/I), the Discharger was to submit an I/I assessment report by 1 June 1999. The report was not submitted until November 2000.
23. In a 10 May 2000 inspection report, Regional Water Board staff informed the Discharger that the wastewater treatment and disposal facilities appeared well-operated and maintained. However, the report also stated that the collection system had significant inflow/infiltration (I/I) problems (documented in Attachment A to this Order). To address these problems, the Discharger was reminded that the WDRs required submittal of an I/I assessment report, and that it should detail the City's plan and schedule for implementing a program to define the nature and extent of I/I in the collection system, establish cost

effective measures for reduction of I/I sources, and perform ongoing I/I prevention and control. The report was received in November 2000, and included the following:

Task	Target Completion Date	Status
Determine the strategy to mitigate the I/I problem	16 October 2001	Completed
Finalize the analysis of the new sewer rates and coordinate the rate increase with the Lake County Sanitation District rate increase.	10 January 2001	Completed
Implement the rate increase with Proposition 218 requirements.	31 March 2001	Completed
Hire additional staff for I/I issues, and obtain necessary monitoring equipment and provide training.	15 June 2001	Hired two additional staff in March and April 2004.
Conduct initial smoke testing, provide initial update for mapping the sewer collection system, conduct base flow monitoring, sewer testing and miscellaneous repair activities.	15 October 2001	Smoke testing began in June 2004 (as of June 2005 approximately 65 percent of the lines inspected). Geographical Information System (GIS) mapping of sewer manholes (2004/2005).
Issue repair notices and work orders for defective collection system facilities.	30 November 2001	Ongoing
Initiate wet weather flow monitoring	1 December 2001	Magnetic flow meters arrived in June 2004 and have been installed at four lift stations (Lakeshore Blvd., Rose Ave., Martin Street, and C Street). A fifth magnetic flow meter is planned to be installed at the Linda Lane lift station.
Conduct ongoing flow monitoring, mapping, and repair activities to the sewer collection system.	Ongoing	Ongoing

24. The Discharger states that a concerted effort has been made towards an I/I Reduction Program with the following actions having been taken: (a) aerial mapping of the city in 1991, 2002, 2006, (b) GIS mapping of utilities from 1999 to present, (c) inventory of sewer utilities from 2001 to present, (d) creation of the I/I Department in 2003, (e) providing a GIS utility atlas to field crews in 2004, (f) completion of the sewer spillage database in 2005, (g) physical inspection of all sewer manholes from 2001 to present, (h) video inspection of sewers from 2001 to present, (i) purchase of magnetic flow meters for sewage lift stations

in 2004, (j) restoration of 10 sewer manholes in 2004, 21 manholes in 2005, and 20 manholes in 2006, and (k) the installation of 44 sewer manhole covers in 2005.

25. The Discharger's 18 September 2006 technical report states that historically, the wastewater collection system has experienced substantial inflow and infiltration; however, the I/I Reduction Program was created in 2003 to identify the problem areas and repair the collection system. The Discharger states that an average of \$225,000 per year has been spent on the I/I Reduction Program.
26. In addition, the Discharger indicates that it has recently contracted with a consultant to prepare a Sewer Master Plan. The Plan will address both collection system and treatment system improvements. The estimated cost to complete the plan is \$50,000 and the scheduled completion date is 13 August 2007. In summary, the Master Plan will contain the following: (a) development of a service area and system map, (b) an inflow/infiltration flow monitoring program, (c) development of a hydraulic model, (d) an evaluation of, and recommended improvements to the wastewater treatment, storage and disposal system to accommodate the next 20 years of growth, (e) cost estimates associated with those recommended improvements, and (f) development of a sewer master plan map.
27. To ensure that a mechanism is in place to provide adequate funding needed for the treatment, storage and disposal capacity necessary to consistently comply with the permit conditions, it is appropriate for the Discharger to submit a Revenue Plan for existing and future expansion of the City of Lakeport's WWTF.
28. To ensure that adequate staffing is available to perform operation and maintenance of the wastewater treatment and disposal system to comply with the WDRs, it is appropriate that the Discharger submit a Staffing Analysis Report.
29. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements For Sanitary Sewer Systems General Order No. 2006-0003-DWQ (General Order). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the Order. The Discharger's collection system exceeds one mile in length, therefore the General Order is applicable. The Discharger applied for coverage under the General Order on 29 October 2006.

### **Regulatory Considerations**

30. As a result of the events and activities described in this Order, the Regional Water Board finds that the Discharger has caused or permitted waste to be discharged in such a manner that it has created, and continues to threaten to create, a condition of pollution or nuisance. The Regional Water Board also finds that the Discharger is discharging waste in violation of WDRs No. 98-207 as described in the above Findings.
31. The Regional Water Board's Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan) designates beneficial uses, includes water quality objectives to protect the beneficial uses, and includes implementation plans to implement the water quality objectives.

32. Surface water drainage from the facility is to Clear Lake. The beneficial uses of Clear Lake, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; water contact recreation; noncontact water recreation; warm freshwater habitat, cold freshwater habitat; spawning, reproduction, and/or early development; and wildlife habitat.
33. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.
34. Section 13301 of the California Water Code states in part: "When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action. In the event of an existing or threatened violation of waste discharge requirements in the operation of a community sewer system, cease and desist orders may restrict or prohibit the volume, type, or concentration of waste that might be added to such system by discharges who did not discharge into the system prior to the issuance of the cease and desist order. Cease and desist orders may be issued directly by a board, after notice and hearing, or in accordance with the procedure set forth in Section 13302."
35. Section 13267(b) of the California Water Code states: " In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region 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 burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."
36. The Discharger owns and operates the facility subject to this Order. Monitoring reports and other technical reports required by this Order are necessary to assure compliance with WDRs Order No. 98-207 and revised MRP No. 98-207 to assure protection of public health and safety.
37. The issuance of this Order is an enforcement action by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act, pursuant to Section 15321(a)(2), Title 14, California Code of Regulations.
38. On 15 March 2007, in Rancho Cordova, California, after due notice to the Discharger and all other affected persons, the Regional Water Board conducted a public hearing at which evidence was received to consider a Cease and Desist Order and Connection Restriction.
39. Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board to review the action in accordance with Section 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100,

Sacramento, CA, 95812-0100, within 30 days of the date on which the Regional Water Board action took place. Copies of the law and regulations applicable to filing petitions are available at [www.waterboards.ca.gov/water\\_laws/index.html](http://www.waterboards.ca.gov/water_laws/index.html) and also provided upon request.

**IT IS HEREBY ORDERED** that, pursuant to Sections 13301 and 13267 of the California Water Code, the City of Lakeport Municipal Sewer District, its agents, successors, and assigns, shall implement certain measures, and identify and implement facility improvements, in accordance with the scope and schedule set forth below to ensure long-term compliance with WDRs Order No. 98-207 or any revisions to those WDRs.

Each document submitted under this Order shall bear the following certification signed by the Discharger:

*"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."*

1. The Discharger shall **immediately** comply with all aspects of WDRs Order No. 98-207, and in addition shall comply with all items described in this Order. Where the CDO imposes more stringent conditions than those provided in the WDRs, the Discharger shall comply with the more stringent conditions required by this Order.
2. Effective immediately, the average monthly dry weather inflow to the wastewater treatment plant shall not exceed 0.42 mgd (calculated by averaging the flows from August through October each year), and the annual inflow (measured from October through September) shall not exceed 885 acre-feet (approximately 288 million gallons).
3. Effective **1 November 2007**, the facility shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. The freeboard in the treatment ponds and storage reservoir shall never be less than two feet as measured from the water surface to the lowest point of overflow. By **1 October** of each year, the storage reservoir capacity shall at least equal the volume necessary to comply with the above.
4. Effective **1 April 2007**, irrigation with wastewater shall not be performed within 24 hours before a predicted precipitation event, during precipitation, or within 24 hours after any precipitation event, nor shall it be performed when ground is saturated or when winds exceed 30 mph.

5. By **1 June 2007**, the Discharger shall install a magnetic flow meter to accurately measure the influent wastewater flows into the wastewater treatment facility. By this date, the Discharger shall submit documentation certifying installation of the flow meter.
6. By **1 September 2007**, the Discharger shall submit a *Flow Meter Calibration Report* that demonstrates that all flow meters used for determining compliance with the WDRs and this Order have been independently calibrated by a third party. The report shall also (a) provide standard procedures for plant personnel to use when taking and recording flow measurements and (b) provide a schedule for on-going meter calibration, and (c) shall provide two months of data showing influent flows for the Linda Lane pump station calculated by both pump run times and by the magnetic flow meter, and shall discuss the differences and the impact on the water balance.
7. By **1 October of each year**, the volume of wastewater in the effluent storage reservoir shall not exceed 50 acre-feet.

#### Short Term Storage and Disposal Capacity Improvements

8. By **1 July 2007**, the Discharger shall submit and immediately implement a *Spill Contingency Plan* containing the interim measures necessary for preventing unauthorized discharges to surface water and surface water drainage courses from the WWTF. The Spill Contingency Plan shall remain in effect until all improvements to the WWTF are completed. The Spill Contingency Plan must, at a minimum, consider additional water conservation measures to reduce wastewater flows, provisions for transporting wastewater offsite for disposal, and provisions for increasing the capacity of the storage reservoir. The cost and funding mechanism for each contingency measure must be identified. The Spill Contingency Plan must identify the selected alternatives, and for each alternative, specify all necessary materials, staffing, and equipment required for implementation.
9. By **1 August 2007**, the Discharger shall submit a *Staffing Analysis Report* for the wastewater treatment, storage and disposal system. The analysis shall include a review of current staffing levels, allocation of staff tasks, an analysis of whether current staff allocation is adequate, and if necessary, describe the shortfalls and make recommendations for future staffing needs. If the analysis indicates additional staff are necessary, then the report shall also include a *Staffing Contingency Plan* describing the steps the Discharger shall take in the short term and long term to assure that it has enough staff to perform the necessary operation and maintenance activities associated with the wastewater storage and disposal system. If the analysis indicates additional staff are necessary, then the *Staffing Contingency Plan* shall also contain a proposed timeline for acquiring the necessary staff.
10. By **1 November 2007**, the Discharger shall submit a report demonstrating that it has completed the 90-acre expansion of the spray irrigation disposal fields. The report shall clearly show that tailwater generated on these fields will be captured and returned to the storage reservoir.

### Groundwater Evaluation

11. By **1 November 2007**, the Discharger shall submit a *Background Groundwater Quality Study and Degradation Assessment Report*. For each groundwater monitoring parameter/constituent identified in revised MRP No. 98-207, the report shall present a summary of all monitoring data and calculation of the concentration in background monitoring well(s). Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare the measured concentration in each compliance monitoring well with the proposed background concentration.
12. By **1 November 2007**, the Discharger shall submit a *BPTC Evaluation Workplan* that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of the waste constituent(s) to determine which best practicable treatment and control (BPTC) practices are necessary to implement to ensure that groundwater degradation is minimized. The workplan shall contain an evaluation of each component of the wastewater treatment facility and shall propose a comprehensive evaluation of appropriate treatment and control measures for each waste constituent causing degradation.
13. By **1 November 2008**, the Discharger shall submit a *BPTC Evaluation Report* containing the results of the study described in Ordered Item No. 12. The report shall recommend improvements to the WWTF that will result in compliance with the Groundwater Limitations of WDRs Order No. 98-207.

### Sewer System Master Plan

14. By **1 July 2008**, the Discharger shall submit a *Sewer System Master Plan* that describes the facility improvements needed to:
  - a. Increase overall storage and disposal capacity as necessary to comply with a 100-year total annual precipitation event;
  - b. Provide enough wastewater storage and disposal capacity for current flows, as well as growth projected over the next 15 years;
  - c. Prevent sanitary sewer overflows;
  - d. Comply with pond freeboard requirements in the WDRs; and
  - e. Address I/I (shall include items listed in Finding No. 26).

The *Sewer System Master Plan* shall include a water balance for both the current inflow and projected flows through at least the year 2022, and shall clearly show the times of the year when wastewater must be stored versus when it may be applied to land. The water balance shall evaluate the wastewater storage reservoir's ability to provide sufficient capacity to maintain two feet of freeboard on a month-by-month basis. The water balance shall be based on all flows entering the wastewater system, 100-year annual precipitation returns, and compliance with the two-foot freeboard requirement in treatment ponds and storage reservoir, and shall model I/I flows using the method described in the July 2004 State Water Board training manual titled "*Training Handbook for Disposal of Non-Designated Waste to Land Systems*" or other appropriate method if approved by the Executive Officer. All assumptions and calculations used in preparing the water balance

must be clearly identified. The water balance shall include consideration of at least the following:

- a. Wastewater flows from all sources such as subsurface inflows, storm water run-on, and any inflow and infiltration from the collection system;
- b. Local precipitation data (indicate what weather station was used to obtain the data, and indicate what the total annual precipitation is for average and 100 year annual storm events, and show how that value was distributed throughout the year, by months, based on historical rainfall patterns);
- c. Infiltration and inflow;
- d. Local evaporation data;
- e. Measured evaporation data from any enhanced evaporation system;
- f. Projected percolation rates for the effluent storage reservoir; and
- g. Irrigation disposal rates that comply with the requirements of the WDRs.

The *Sewer System Master Plan* shall include a proposed timeline for all improvements.

#### Revenue Plan

15. By **1 September 2008**, the Discharger shall submit a *Revenue Plan* for all work and improvements described in the Sewer System Master Plan. The Revenue Plan shall include the following:
  - a. A detailed description of the scope and schedule of all planning, design, and construction, including improvements to existing facilities and construction of new facilities as needed to accommodate projected future influent flows over the next 15 years. A phased expansion plan may be proposed; and
  - b. A preliminary capital cost estimate and a financing plan describing how the improvement project(s) will be funded.

#### Report of Waste Discharge

16. By **1 April 2009**, the Discharger shall submit a *Report of Waste Discharge* (RWD) to allow the WDRs to be revised to reflect the proposed upgrades in the Sewer System Master Plan. The RWD consists of the Form 200 (*Application for Report of Waste Discharge*) and a technical report that addresses all items listed in Attachment B to this Order, "*Additional Information Requirements for a Report of Waste Discharge*." The Report of Waste Discharge shall clearly reference the groundwater monitoring data collected for the sprayfields and shall demonstrate that the proposed improvements are compliant with State Water Resources Control Board Resolution No. 68-16 (the Antidegradation Policy).

Progress Reports

17. **Beginning with the second quarter 2007**, the Discharger shall submit a *Quarterly Compliance Status Report*. These reports shall describe all work completed during the calendar quarter to comply with this Cease and Desist Order; any new, modified, or renovated component of the collection, treatment, storage, and disposal system and number of new connections authorized during that quarter. The reports shall specifically address work completed to identify and reduce I/I. These reports shall be submitted by the **1st day of the second month after the quarter** (e.g., the first quarterly report is due by 1 May of each year).

In addition to the above, the Discharger shall comply with all applicable provisions of the California Water Code that are not specifically referred to in this Order. As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all technical reports shall be prepared by, or under the supervision of, a California Registered Engineer or Professional Geologist and signed/stamped by the registered professional.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement or may issue a complaint for administrative civil liability.

Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of \$1,000 to \$10,000 per day of violation, depending on the violation, pursuant to the California Water Code, including sections 13268, 13350 and 13385. The Regional Water Board reserves its right to take any enforcement actions authorized by law.

I, PAMELA C. CREEDON, 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 15 March 2007.

- Original Signed by -

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PAMELA C. CREEDON, Executive Officer

Attachment A - Summary of Spills from October 1998 through 2006

Attachment B - Additional Information Requirements for a Report of Waste Discharge

GJC/MRL/WSW: 15 March 2007

**ATTACHMENT A**

**CEASE AND DESIST ORDER NO. R5-2007-0010**

**FOR**

**CITY OF LAKEPORT MUNICIPAL SEWER DISTRICT  
WASTEWATER TREATMENT FACILITY  
LAKE COUNTY**

The following table summarizes the wastewater spills that have occurred (as documented in the Regional Water Board case file) since adoption of the Waste Discharge Requirements in October 1998 through the issuance of this Cease and Desist Order.

<b>Date of Spill</b>	<b>Volume Discharged (Gallons)</b>	<b>Discharge to Surface Water Drainage Course?</b>	<b>Type of Waste</b>	<b>Location of Spill</b>	<b>Cause of Spill<sup>1</sup></b>
29 Oct 1998	>325,900	Yes	Partially Treated Effluent	2400 Linda Lane & Parallel Drive	Recapture pond gate partially open because pond was full and overflowing due to storm water flow into the pond
23 Nov 1998	400	Yes	Partially Treated Effluent	Disposal Site	Overflow from recapture pond caused during installation of plastic pipe in earthen berm
29 Dec 1998	100	Yes	Raw Sewage	420 2 <sup>nd</sup> Street	Blockage in sewer lateral
30 Dec 1998	75	No	Raw Sewage	375 High Street	Plugged sewer lateral
16 Jan 1999	30	No	Raw Sewage	975 Armstrong and Russell Street	Blockage in sewer lateral
28 Jan 1999	50	No	Raw Sewage	635 11 <sup>th</sup> and Main Streets	Blockage in sewer lateral
31 Jan 1999	20	No	Raw Sewage	40 <sup>th</sup> and South Main Street	Plugged sewer service lateral
17 Feb 1999	50	Yes	Raw Sewage	475 Third Street and Tunis Ave.	Blockage in main sewer line
4 Mar 1999	30	Yes	Raw Sewage	825 Forbes	Roots in sewer lateral
13 Mar 1999	25	No	Raw Sewage	450 Hillcrest and Forest	Plugged sewer lateral
19 Apr 1999	30	Yes	Raw Sewage	480 Third Street and Tunis Ave.	Blockage in sewer lateral
23 June 1999	1,500	Yes	Raw Sewage	1940 Lakeshore Drive and Giselman	Blockage in main sewer line
18 Nov 1999	20	No	Raw Sewage	2235 Heaton Circle	Plugged sewer lateral

<b>Date of Spill</b>	<b>Volume Discharged (Gallons)</b>	<b>Discharge to Surface Water Drainage Course?</b>	<b>Type of Waste</b>	<b>Location of Spill</b>	<b>Cause of Spill<sup>1</sup></b>
19 March 2000	75 to100	No	Raw Sewage	Tunis Street between 2 <sup>nd</sup> and 3 <sup>rd</sup> Streets	Plugged sewer main
24 March 2000	25	No	Raw Sewage	480 3 <sup>rd</sup> Street	Plugged sewer main
13 April 2000	50	No	Raw Sewage	475 3 <sup>rd</sup> Street	Plugged sewer main
21 April 2000	50	No	Raw Sewage	210 11 <sup>th</sup> Street	Plugged sewer lateral
16 May 2000	200	No	Raw Sewage	16 <sup>th</sup> and 17 <sup>th</sup> Streets	Debris blockage in sewer manhole
30 May 2000	30	No	Raw Sewage	Pecham Street	Blockage in sewer main
5 June 2000	25	Yes	Raw Sewage	1824 Via Del Cabana	Plugged sewer lateral
8 Sept 2000	50	No	Raw Sewage	155 South Forbes	Plugged sewer line cleanout
15 Nov 2000	100	Yes	Raw Sewage	Via Delago & Via Del Cabana	Blockage in sewer main
15 Nov 2000	150	Yes	Raw Sewage	1880 High Street	Blockage in sewer main
25 Dec 2000	50	No	Raw Sewage	224 2 <sup>nd</sup> Street	Blockage in sewer main
9 Jan 2001	25	Yes	Raw Sewage	Peckham & South Main	Blockage in sewer main
9 Feb 2001	25	No	Raw Sewage	Parallel & Craig	Blockage in sewer main
23 Feb 2001	25	Yes	Raw Sewage	426 2 <sup>nd</sup> Street	Plugged sewer main
23 Feb 2001	30	Yes	Raw Sewage	2019 South Main	Plugged sewer main
23 July 2001	30	Yes	Raw Sewage	Via Delago & Del Cabana	Blockage in sewer main
8 Oct 2001	10	No	Raw Sewage	425 3 <sup>rd</sup> and Tunis Street	Plugged sewer main
9 Oct 2001	25	Yes	Raw Sewage	975 North Brush Street	Plugged sewer lateral
26 Nov 2001	25	Yes	Raw Sewage	1130 Mellor Street	Root blockage in sewer lateral
28 Feb 2002	40	Yes	Raw Sewage	475 Tunis Street	Blockage in sewer main

<b>Date of Spill</b>	<b>Volume Discharged (Gallons)</b>	<b>Discharge to Surface Water Drainage Course?</b>	<b>Type of Waste</b>	<b>Location of Spill</b>	<b>Cause of Spill<sup>1</sup></b>
11 Mar 2002	25	No	Raw Sewage	480 3 <sup>rd</sup> Street	Blockage in sewer main
30 April 2002	25	No	Raw Sewage	475 Tunis Street	Plugged sewer main
12 May 2002	20	No	Raw Sewage	1264 Craig Ave	Plugged sewer lateral
12 May 2002	10	No	Raw Sewage	1155 North Forbes	Plugged sewer lateral
25 June 2002	100	Yes	Raw Sewage	1425 North Main Street	Power failure to the pumps and controls
7 July 2002	50	No	Raw Sewage	1264 Craig Street	Plugged sewer lateral
17 July 2002	25	No	Raw Sewage	1155 North Forbes Street	Plugged sewer lateral
13 Sept 2002	15	No	Raw Sewage	2235 Heaton Circle	Plugged sewer main
4 Oct 2002	20	Yes	Raw Sewage	100 North Main Street	Plugged sewer main
29 Oct 2002	50	No	Raw Sewage	992 19 <sup>th</sup> Street	Blockage in sewer main
1 Nov 2002	50	No	Raw Sewage	1021 24 <sup>th</sup> Street	Blockage in sewer main
8 Nov 2002	5	No	Raw Sewage	360 Third Street	Blockage in sewer lateral
13 Nov 2002	25	No	Raw Sewage	210 11 <sup>th</sup> Street	Plugged sewer cleanout
18 Dec 2002	10	No	Raw Sewage	15 <sup>th</sup> and High Street	Blockage in sewer main
10 Jan 2003	20	No	Raw Sewage	785 6 <sup>th</sup> Street	Roots in sewer lateral
27 Jan 2003	300	Yes	Raw Sewage	755 11 <sup>th</sup> Street	Blockage in sewer main
29 Jan 2003	25	Yes	Raw Sewage	Clearlake Ave & Main Street	Leaking valve cover
20 Feb 2003	500	Yes	Raw Sewage	6 <sup>th</sup> Street	Grease blockage in sewer main
24 Feb 2003	50	Yes	Raw Sewage	High and 20 <sup>th</sup> Streets	Grease blockage in sewer main
18 Oct 2003	15	Yes	Raw Sewage	195 South Main Street	Plugged sewer line
18 Oct 2003	15	Yes	Raw Sewage	235 South High Street	Plugged sewer line

<b>Date of Spill</b>	<b>Volume Discharged (Gallons)</b>	<b>Discharge to Surface Water Drainage Course?</b>	<b>Type of Waste</b>	<b>Location of Spill</b>	<b>Cause of Spill<sup>1</sup></b>
27 Oct 2003	66,000	Yes	Raw Sewage	2485 Parallel Drive	Power failure and standby generator running out of fuel
18 Nov 2003	1,400	Yes	Raw Sewage	320 16 <sup>th</sup> Street	Grease blockage in sewer line
24 Nov 2003	25	No	Raw Sewage	470 2 <sup>nd</sup> Street	Plugged sewer main
30 Nov 2003	30	No.	Raw Sewage	867 14 <sup>th</sup> Street	Plugged sewer lateral
15 Dec 2003	100	Yes	Raw Sewage	180 6 <sup>th</sup> Street	Partially blocked sewer main
18 Dec 2003	100	Yes	Raw Sewage	180 6 <sup>th</sup> Street	Partially blocked sewer main
29 Dec 2003	100	Yes	Raw Sewage	1005 North Main	Heavy rains and I/I problems
13 Mar 2004	15	No	Raw Sewage	975 Armstrong Ave.	Blockage in sewer lateral
19 July 2004	20	No	Raw Sewage	1155 North Forbes Street	Blockage in sewer lateral
31 Dec 2005	500	Yes	Raw Sewage	1100 North Main	I/I problems, grease blockage, undersized section of sewer pipe
13 – 24 April 2006	3,600,000 to 6,623,250	Yes	Partially Treated Effluent	Land Application Area	Excessive rains, I/I and storage capacity problems, flooding of sewer cleanouts at Willow Point RV Park
26 Oct 2006	200	Yes	Raw Sewage	Villa Del Lago and Via Del Cabana	Grease blockage in sewer line
9 Nov 2006	90	No	Raw Sewage	Lakeport Unified School District	Backup in manhole due to vandalism

<sup>1</sup>Based on Discharger's spill reports.

**ATTACHMENT B**

**ADDITIONAL INFORMATION REQUIREMENTS  
FOR A REPORT OF WASTE DISCHARGE**

**CEASE AND DESIST ORDER NO. R5-2007-0010  
FOR  
CITY OF LAKEPORT MUNICIPAL SEWER DISTRICT  
WASTEWATER TREATMENT FACILITY**

Provide a technical report prepared by a California Registered Civil Engineer that presents the following information:

1. A narrative description of all wastewater conveyance, treatment, and disposal systems currently existing at the facility.
2. A narrative description of all planned physical improvements, their purpose, and anticipated completion dates. If phased build out is planned provide scope and completion dates for each phase.
3. A process flow diagram, scaled treatment plant site plan, and scaled map(s) showing all existing and proposed effluent disposal areas (including conveyance and tailwater control systems).
4. For each pond and other waste containment structure, provide the following information. Discuss both existing and proposed ponds:
  - a. Identification (name) and function of the pond;
  - b. Surface area, depth, and volumetric capacity at two feet of freeboard;
  - c. Height (relative to surrounding grade), crest width, interior slope, and exterior slope of each berm or levee;
  - d. Materials used to construct each berm or levee;
  - e. Description of engineered liner, if any;
  - f. Estimated steady state percolation rate for each unlined pond;
  - g. Depth to shallow groundwater below the planned base of the ponds;
  - h. Overfilling/overflow prevention features; and
  - i. Operation and maintenance procedures.
5. For each reclamation site, provide:
  - a. Complete ownership information.
  - b. A scaled map showing the topography, property boundary, streets, residences, surface waters, etc. A USGS topo map may be sufficient as a base map.

- c. A scaled map showing the limits of the reclamation areas, reclaimed water conveyance systems, other irrigation water conveyance systems, on-site drainage, tailwater systems, and runoff controls (existing and proposed).
  - d. Net irrigation area.
  - e. Method(s) of irrigation, including typical frequency and depths of application for each month when irrigation will occur.
  - f. Typical cropping practices (crops grown, rotation cycles, use of fertilizers and pesticides, etc.).
  - g. Typical storm water management practices.
6. A description of the sources and types of wastewater flowing into the wastewater treatment system, design flow rates, and the design capacity of the system (existing and proposed). Include projected infiltration/inflow rates and peaking factors used in design calculations.
  7. A description of emergency wastewater storage facilities or other means of preventing system bypass or failure during reasonably foreseeable overload conditions (e.g., power failure, sewer blockage, and illicit sewer discharges). Consider both potential problems at the plant and within the community sewer system.
  8. A description of the community sewer system: materials, age, infiltration/inflow estimate, and lift station details (type, location, capacity, backup systems, and alarm features).
  9. Chemical characterization of influent wastewater quality, including biochemical oxygen demand, total suspended solids, total dissolved solids, and nitrogenous compounds. Include a discussion of seasonal variations, if any, and supporting analytical data.
  10. A description of all known or anticipated industrial dischargers whose individual BOD, total dissolved solids and/or hydraulic loads will be greater than 2% of the plant's total daily influent loading, including the following:
    - a. Name;
    - b. Industry;
    - c. Nature of waste stream;
    - d. Average daily flow (gpd and percentage of total plant loading);
    - e. Peak daily flow;
    - f. Average daily BOD loading (lb/day and percentage of total plant loading);
    - g. Peak daily BOD loading;
    - h. Salinity (e.g., total dissolved solids, electrical conductivity, major ions);
    - i. Nitrogen (all forms);
    - j. Nature of seasonal or diurnal variations in influent flow or quality, if any; and

- k. Pre-treatment or self-monitoring programs, if any.
11. A description of the following for the both existing system and each phase of the proposed expansion:
    - a. Average dry weather flow;
    - b. Peak wet weather flow; and
    - c. Effluent quality at the point of discharge to the disposal system (BOD, total suspended solids, settleable matter, nitrogenous compounds, electrical conductivity, pH, and total coliform organisms).
  12. Narrative description of expected solids generation rates and handling/storage procedures:
    - a. Debris;
    - b. Grit and screenings; and
    - c. Biosolids.
  13. Narrative description of proposed solids disposal practices for debris, grit, screenings, and biosolids:
    - a. Method of disposal;
    - b. Frequency of disposal;
    - c. Disposal site/area name(s) and location(s); and
    - d. For biosolids (if beneficial re-use is proposed for reclamation sites):
      - Land application rates (dry tons per unit area per application, number of applications per year);
      - Soil incorporation practices;
      - Vegetation grown;
      - Runoff controls, if any; and
      - Public access controls.
  14. A description of the types of soil underlying any planned ponds and effluent disposal areas (include a copy of the geotechnical report).
  15. Projected monthly water balance for each phase of buildout demonstrating adequate containment capacity for the 100-year return period total annual precipitation, including consideration of at least the following.
    - a. A minimum of two feet of freeboard in each pond at all times;
    - b. Historical local evaporation data (monthly average values);
    - c. Local precipitation data with the 100-year return period annual total distributed monthly in accordance with mean monthly precipitation patterns;

- d. Proposed wastewater loading rates distributed monthly in accordance with expected seasonal variations;
  - e. Projected long-term percolation rates (including consideration of percolation from unlined ponds and the effects of solids plugging on all ponds); and
  - f. Projected irrigation usage rates (if recycling is proposed).
16. Proposed flow limits and basis for the limit for the current facility and each phase of the planned expansion. Consider dry weather flows vs. peak flows and seasonal variations associated with major industrial dischargers. Include the technical basis for the proposed flow limit (e.g., design treatment capacity; hydraulic capacity of a main lift station, headworks, or other system element; and demonstrated effluent disposal capacity).
17. A narrative description of plant operation and maintenance procedures to be employed, including those associated with effluent storage and disposal.
18. A description of any policies or facility design features that reduce the potential for groundwater degradation (best practicable treatment and control or BPTC measures). Such features might include industrial discharger effluent quality limits, prohibitions on discharge of certain types of waste, advanced treatment, disinfection, concrete treatment structures, and pond lining systems.
19. Provide a technical report prepared by a Professional Geologist or Certified Hydrogeologist that provides an assessment of the following:
- a. Baseline groundwater quality at each new disposal or reclamation site.
  - b. Groundwater degradation, if any, that has resulted from the existing operation; and
  - c. The potential for the proposed effluent disposal expansion to degrade groundwater quality (at the plant and at reclamation/disposal sites).

This assessment must be made based on site-specific data and must provide technically-based answers to the following questions based on historical data and supplemental data to be collected for the purpose of this study:

- ◆ What is the groundwater elevation and gradient at the existing facility? At least one new well will be required to better define background groundwater quality outside the influence of any mounding around the ponds and at least one more well will required downgradient of the existing ponds.
- ◆ What is background shallow groundwater quality for typical municipal waste constituents? Compare to established water quality objectives for protection of the beneficial uses of groundwater.<sup>1</sup>

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<sup>1</sup> Include analyses for the following: BOD, total coliform organisms, total dissolved solids, ammonia (as N), total Kjeldahl nitrogen, nitrate (as N), nitrite (as N), and a complete anion/cation scan with ion balance. Total coliform organisms shall be determined using the 15- or 25- tube method.

- ◆ What is the groundwater quality data downgradient of the existing WWTP and application areas.
- ◆ For each monitored constituent, has the existing facility degraded groundwater quality? If so:
  - What constituents exceed the applicable water quality objective?
  - What constituents exceed background concentrations?
  - Based on site hydrogeology, is the degradation contained within a defined area (or one that could be defined by additional investigation)?
  - What Best Practicable Treatment and Control (BPTC) methods will be utilized to minimize the degradation?
- ◆ What are subsurface conditions at the proposed new disposal sites?<sup>2</sup>
- ◆ What is the character of groundwater quality at the proposed new disposal sites?<sup>2</sup>
- ◆ Based on site hydrogeology, the nature of the waste, and the proposed disposal method, what level of degradation is expected to result from the expansion (if any)?
- ◆ If the proposed expansion will cause degradation, how will the degradation be confined or controlled?
- ◆ At a minimum, the report shall include the following:
  - Rationale for field investigation approach.
  - Description and documentation of all proposed investigational methods and activities.
  - Description of the site hydrogeology including stratigraphy, hydraulic conductivity of the soils, capillary rise, groundwater elevation and gradient, transmissivity, and influence of all recharge and pumping sources (i.e., a site conceptual model)
  - A detailed map showing locations of all water wells including springs and isolated wetlands within one mile of the WWTP and land application areas.
  - Description of fate and transport mechanisms for all monitored constituents.
  - Description of data reduction/analysis techniques and results.
  - Presentation of historical and supplemental site-specific soil and groundwater data.
  - Comparison of groundwater quality data to background groundwater quality and water quality objectives for each constituent.
  - An analysis of all data and conclusions regarding each of the above questions.

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<sup>2</sup> This must be based on subsurface investigation at the proposed disposal site including soil borings and/or cone penetrometer tests and groundwater analyses. Groundwater samples may be obtained using a one-time sampling method such as Hydropunch®.