CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0021

WASTE DISCHARGE REQUIREMENTS FOR CITY OF VACAVILLE GIBSON CANYON CREEK WASTEWATER TREATMENT PLANT CLOSURE AND CORRECTIVE ACTION SOLANO COUNTY

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

1. The City of Vacaville (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated December 2001, to apply for revised Waste Discharge Requirements (WDRs) for the discharge of treated wastewater at the Gibson Canyon Creek Wastewater Treatment Plant (hereafter Gibson plant) located at 7050 Leisure Town Road in Vacaville.

2. The Discharger owns and operates a wastewater collection and treatment system at the Gibson plant and currently provides utility service to Mariani Packing Company (hereafter Mariani) and Albertson's Distribution Center (hereafter Albertson's). The Gibson plant is located in Solano County in Section 36, T7N, R1W, MDB&M, as shown on Attachment A, a part of this Order. The Solano County Assessor's parcel numbers for the Gibson plant are 106-280-020 and 0106-160-010.

3. The Gibson plant was built in 1965 to treat industrial tomato processing wastewater from International Home Foods, Inc. (IHF) located about 1 mile west of the Gibson Plant. The treated wastewater was discharged to Gibson Canyon Creek which runs through the Gibson plant property. Wastewater flows from a grocery distribution center (currently owned by Albertson's) were added later. Prior to the adoption of this Order, the Gibson plant was regulated under a National Pollutant Discharge Elimination System (NPDES) permit adopted by the Regional Board in 1997 and amended in 2000.

4. The IHF facility ceased operating in December 1998 and was sold to Mariani who began discharging dried-fruit processing wastewater to the Gibson plant in March 2001. Because of the reduced overall flow rate compared to the period when IHF was operating, the treated wastewater at the Gibson plant has since been contained in existing onsite stabilization ponds without discharge to Gibson Canyon Creek. These unlined ponds allow the treated wastewater to evaporate and to percolate to underlying groundwater.

5. On 7 November 2003, Regional Board staff issued tentative revised WDRs for public review. The requirements and schedules in the tentative WDRs were based on information contained in the December 2001 RWD and schedules proposed in a memorandum from the Discharger dated 6 August 2003. The tentative WDRs provided three options for the Discharger to comply with the Basin Plan and the applicable regulations (presented in later Findings herein). These options were:

a. Provide treatment plant modifications and/or plans to reduce wastewater salinity and other constituents-of-concern in ponds to levels less than would require containment as designated waste; or

b. Design and install liner systems in the ponds that will receive designated waste in accordance with the prescriptive standards and performance goals of Title 27, California Code of Regulations (Title 27) for Class II waste management units; or

c. Discontinue wastewater discharge and close the treatment plant and ponds.

6. Following a 19 December 2003 meeting with Regional Board staff, the Discharger submitted a 29 December 2003 letter commenting on the tentative WDRs stating that they intend to close the Gibson plant. The letter stated that the domestic flows from Albertson's and Mariani would be routed to Vacaville's Easterly treatment plant by December 2005. The letter also stated that Mariani anticipates ceasing discharge of dried-fruit processing wastewater to the Gibson plant by December 2004 pending WDRs and a Solano County Use Permit for discharge of their industrial wastewater to land. Therefore, pursuant to the Discharger's request, these WDRs require closure of the Gibson plant following their submittal of a Final Closure Plan by November 2005.

DESCRIPTION OF TREATMENT FACILITIES

7. The treatment system at the Gibson plant generally consists of two aeration basins and two stabilization ponds as described in the RWD and as shown on Attachment B, a part of this Order. The treatment plant includes chlorination and dechlorination facilities that are not currently in use.

8. The RWD describes the two aeration basins. The basins are designated as the West Aeration Basin and the East Aeration Basin. The volume of each basin is 3 million gallons and they are each equipped with six 25 horsepower brush-type aerators. The Discharger reports that the total five-day Biochemical Oxygen Demand (hereafter BOD) loading capacity for both basins is 10,543 pounds per day with one aerator unit out of service. The purpose of the aeration basins is to reduce the BOD of the wastewater. The Discharger has reported that the aeration basins are cement lined.

9. The RWD also describes the two stabilization ponds. The ponds are designated as the North Pond and the South Pond. The maximum operating volume of the North Pond is reported to be 75.6 acre-feet and the maximum operating volume of the South Pond is reported to be 63.6 acre-feet, each at an operating depth of six feet (with an additional 2 feet of freeboard). The stabilization ponds occupy roughly 24 acres combined. The purpose of the stabilization ponds, as described in the RWD, is to function as storage ponds without discharge of effluent to Gibson Canyon Creek. The stabilization ponds are not lined.

10. The Discharger has not reported information regarding the geology at Gibson plant.

WASTEWATER CHARACTERISTICS

11. The Discharger submitted data from wastewater samples collected at the Gibson plant in the RWD and in self-monitoring reports. Information reported by the Discharger indicates that the discharge at the Gibson plant is approximately 98% industrial wastewater and 2% sewage. During the period that Mariani has been operating, the average flow rate at the Gibson plant has been 0.130 million gallons per day (MGD) based on monthly averages.

12. The Discharger collects wastewater samples at the influent to the treatment plant; at the discharge to the stabilization ponds following treatment in the aeration ponds; and at a point within the North Pond. The constituents measured or analyzed at these locations include electrical conductivity (EC), total dissolved solids (TDS), BOD, total suspended solids (TSS), ammonia, total Kjeldahl nitrogen (TKN) and phosphorous.

13. The influent wastewater contains high levels of BOD and suspended solids derived from the industrial wastewater flows to the Gibson plant. The BOD concentrations in influent samples average about 6,400 mg/l during the period of December 2001 to September 2003. The BOD in North Pond samples averages about 50 mg/l during the same period. The treatment plant is designed to reduce BOD and suspended solids to acceptable levels due to its historical discharges to surface water.

14. Although not fully characterized, the wastewater also contains constituents that contribute to its salinity. The influent has TDS concentrations that average about 3,400 mg/l during the period of December 2001 to September 2003. TDS data from the ponds is not available. The average EC for the Gibson plant influent is 1,940 umhos/cm. The average EC of wastewater in the North Pond from these data is 1,600 umhos/cm. Table 1 in the Information Sheet attached to this Order presents wastewater EC data submitted by the Discharger since Mariani began discharging wastewater to the Gibson plant in 2001 (previous data is also available). The treatment plant is not currently designed to treat or reduce salinity in the wastewater.

15. Of these two measurements of salinity, EC is less influenced by the presence of organic material in the wastewater and provides a more consistent measure of salinity between the influent wastewater, ponded wastewater, and groundwater. The TDS is also a useful measurement; however, the high BOD in the wastewater complicates the interpretation of the TDS data. Additional wastewater and groundwater characterization is required by this Order as implemented in the Monitoring and Reporting Program (MRP).

16. Other constituents such as ammonia, TKN and phosphorous are also elevated in the influent wastewater. This Order continues to require wastewater analysis for these constituents during the period the Gibson plant will continue operating. This Order does not require continued TSS analysis since there is no longer any discharge to surface water.

17. The Discharger has worked with both Mariani and Albertson's to reduce the salinity of wastewater coming into the Gibson plant. EC measurements of the influent to the North Pond indicate a reduction in salinity during 2003 compared with 2002; however, the EC of wastewater measured

directly in the North Pond continues to be significantly higher than that of the influent to the pond. This may be due to evapoconcentration and salt accumulation in the pond since the wastewater from the North Pond is no longer discharged to Gibson Canyon Creek.

GROUNDWATER MONITORING

18. Groundwater monitoring data indicate that the groundwater table typically occurs between two feet and fifteen feet below ground surface depending on seasonal rainfall. The groundwater flow direction is generally east to southeast with an approximate gradient of 0.003.

19. Six groundwater monitoring wells (MW-1 through MW-6) have been installed by the Discharger to monitor and characterize groundwater quality at the Gibson plant. Groundwater monitoring wells MW-4 through MW-6 were installed as part of a salt accumulation study required by the 1997 NPDES permit and were monitored for only one year, prior to wastewater discharge by Mariani. Locations of monitoring wells are shown on Attachment B. Monitoring well MW-1 is the historical background well, and monitoring wells MW-2 and MW-3 are downgradient from the stabilization ponds. Monitoring well MW-5 is located on adjacent property owned by Pacific Gas & Electric Company (PG&E). In a 24 November 2003 letter from Secor International Inc., a request was made on behalf of PG&E that the Discharger be required secure an access agreement with PG&E to sample this well.

20. The Discharger has monitored MW-1 through MW-3 on a monthly basis for depth to groundwater, EC, TDS and nitrates for several years. Table 2 in the Information Sheet contains EC data for these wells since May 2001. The average EC for the background well from this data is 600 umhos/cm using data from May 2001 to September 2003. The average EC of MW-2 and MW-3 during this period are 1,900 and 1,580 umhos/cm, respectively. Additional groundwater constituents such as ammonia, TKN and phosphorous have been added to the MRP adopted with this Order, but data concerning them is not yet available.

21. Based on data contained in Table 1, the average EC for background well MW-1 is 600 umhos/cm and the average EC of MW-2 and MW-3 are 1,900 and 1,580 umhos/cm, respectively. The data indicate that the groundwater downgradient from the ponds has significantly higher salinity than the background groundwater. Furthermore, the EC measurements from June 2002 through September 2003 in monitoring well MW-2 are increasing and higher than any historical EC measurement in that well. The data indicate that the unlined ponds have degraded underlying groundwater.

    The background well MW-1 also appears to show an increasing trend, indicating that it may not be out of the influence of seepage from the ponds. The background EC data points beginning in February 2003 are all higher than 600 umhos/cm, are higher than any historical levels measured at MW-1, and continuing to increase indicating that degradation is occurring at this location. This Order requires that the Discharger establish a different background monitoring location to characterize groundwater quality out of the influence of waste management activity at the site.

22. The beneficial uses of groundwater established in the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin, Fourth Edition (hereafter Basin Plan) are municipal and domestic, industrial, and agricultural supply. Water quality objectives applicable to protecting these beneficial uses include: chemical constituents, tastes and odors, and toxicity. Chapter 4 of the Basin Plan contains policies and procedures for translating narrative water quality objectives into numeric limitations using numeric limits developed by other organizations to protect specific uses of water. The applicable water quality limitation for electrical conductivity derived from the Basin Plan is based on the most restrictive of the following:

Constituent	Water Quality Limit	Source of Limit
Electrical Conductivity	700 umhos/cm	Agricultural Water Quality Limit
Electrical Conductivity	900 umhos/cm	Secondary MCL (Taste and Odor)

23. The Basin Plan states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. Since the average EC for the currently available background groundwater monitoring data of 600 umhos/cm is less than both of the applicable water quality objectives for EC, and the average EC measurement in the downgradient monitoring wells both significantly exceed those water quality objectives, the discharge has caused degradation and pollution ("pollution" as defined in California Water Code Section 13050(l)(1)) of underlying groundwater and has impaired the beneficial uses of groundwater for municipal, domestic and agricultural supply. The discharge is not consistent with the applicable water quality objectives and is not in compliance with the Basin Plan.

WASTE CLASSIFICATION

24. California Water Code Section 13173 defines a "designated waste" as follows:

> "'Designated waste' means either of the following:
>
> (a) Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.
>
> (b) Nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state as contained in the appropriate state water quality control plan."

Title 27, California Code of Regulations (CCR), Section 20005, et seq. (Title 27) incorporates this definition of a "designated waste".

REGULATIONS APPLICABLE TO THE DISCHARGE OF DESIGNATED WASTE

25. Title 27 contains regulations promulgated by the State Water Resources Control Board that pertain to water quality aspects of discharges of solid waste to land for treatment, storage, or disposal. Title 27 CCR Section 20220(a) defines nonhazardous solid waste as "all putrescible and nonputrescible solid, semi solid, and liquid wastes . . . which contain soluble pollutants in concentrations which exceed applicable water quality objectives, or could cause degradation of waters of the state (i.e., designated waste)". Title 27 provides minimum standards and performance goals for containment of designated wastes.

26. As set forth in preceding findings, the salinity of the wastewater discharged to unlined ponds at the Gibson plant significantly exceeds water quality objectives. The discharge has caused and continues to cause degradation and pollution of underlying groundwater and has caused impairment of beneficial uses of that groundwater. The wastewater is designated waste subject to Title 27.

27. Title 27 CCR Section 20090 contains a list of types of discharges that are exempt from the Title 27 regulations. Among these are an exemption for sewage and an exemption for wastewater which are as follows:

"**§20090**. **SWRCB - Exemptions.** (C15: §2511)
The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

(a) **Sewage—**Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB-promulgated provisions of this division.

(b) **Wastewater—**Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

(1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
(2) the discharge is in compliance with the applicable water quality control plan; and
(3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste."

28. The exemption for sewage under Section 20090(a) applies to facilities that treat domestic sewage. As stated in Finding No. 11, the discharge at the Gibson plant is primarily industrial wastewater with a very small component of sewage. The salinity of the resulting discharge significantly exceeds water quality objectives and background groundwater quality. As determined in Finding No. 23, this has resulted in impairment of the beneficial uses of groundwater. Since the discharge at the Gibson plant has only has a small component of sewage and is not consistent with applicable water quality objectives, the discharge does not qualify for this exemption.

29. Section 20090(b) provides an exemption for discharges of non-hazardous wastewater to land, including evaporation ponds and percolation ponds providing the Regional Board has issued WDRs or reclamation requirements for the discharge or waived issuing requirements and the discharge is in compliance with the applicable Basin Plan. Since the discharge is not in

compliance with the Basin Plan as determined in Finding No. 23, the discharge does not qualify for this exemption.

REGULATIONS, LAWS AND POLICIES RELATED TO GROUNDWATER CLEANUP

30. Section 13304(a) of the California Water Code provides in part:

"Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts."

31. State Water Resources Control Board (State Board) Resolution No. 92-49, the *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section* 13304, sets forth criteria to be used during an investigation or cleanup and abatement of discharges of waste and the effects of discharges of waste subject to Section 13304 of the California Water Code. This Policy requires that cleanup standards be consistent with State Board Resolution No. 68-16 (the Antidegradation Policy).

32. Resolution No. 92-49, Section III.F.2.c., provides that the Regional Board shall require actions for cleanup and abatement to implement the provisions of Chapter 15 that are applicable to cleanup and abatement, if technologically and economically feasible, where "cleanup and abatement involves actions other than removal of the waste, such as containment of waste in soil or ground water by physical or hydrological barriers to migration (natural or engineered), or in-situ treatment (e.g., chemical or thermal fixation, or bioremediation) . . . ."

33. Resolution No. 92-49, Section III.G., requires that the Regional Board:

"Ensure that dischargers are required to clean up and abate the effects of discharges in a manner that promotes attainment of either background water quality, or the best water quality which is reasonable if background levels of water quality cannot be restored, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible; in approving any alternative cleanup levels less stringent than background, apply Section 2550.4 of Chapter 15 . . .; any such alternative cleanup level shall:

1. Be consistent with the maximum benefit to the people of the state;
2. Not unreasonably affect present and anticipated beneficial use of such water; and
3. Not result in water quality less than that prescribed in the Water Quality Control Plans and Policies adopted by the State and Regional Water Boards."

34. The provisions of Chapter 15 referenced in the Resolution No. 92-49 that are applicable to cleanup and abatement are now in Title 27. In the event of a release from a unit subject to the provisions of Title 27, Section 20430 requires the Discharger to establish a Corrective Action Program to implement corrective action measures that ensure that constituents-of-concern achieve their respective concentration limits at all Monitoring Points and throughout the zone affected by the release, including any portions thereof beyond the facility boundary, by removing the waste constituents or treating them in place.

SCHEDULE FOR PLANT CLOSURE AND CORRECTIVE ACTION

35. The Discharger submitted a proposed schedule dated 29 December 2003 for closure of the Gibson plant and for corrective action (groundwater cleanup). The schedule includes the submittal of several technical reports between March 2004 and December 2005 to conduct interim measures to further reduce the salinity of influent wastewater to the Gibson plant prior to closure; to conduct further onsite groundwater characterization (including background); to conduct initial characterization of impacts to native soil beneath the ponds; to assess the engineering feasibility of various methods to cleanup groundwater and proposed corrective action; and to develop preliminary and final closure plans for clean closure of the ponds. Provision No. 4 of this Order requires the proposed interim measures, investigation, corrective action and closure of the ponds at the Gibson plant in accordance with the schedule proposed by the Discharger. Provision No. 4 also requires additional technical reports documenting the completion of the interim measures to reduce salinity; documenting the implementation of corrective action; and documenting the completion of clean closure of the ponds.

CEQA AND OTHER CONSIDERATIONS

36. This Order implements the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin, Fourth Edition (the Basin Plan).

37. The action to revise waste discharge requirements for this facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, §15301.

38. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports." The monitoring and reporting program required by this Order and the attached Monitoring and Reporting Program No. R5-2004-0021 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

39. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

40. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

41. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Sections 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, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED that pursuant to Sections 13263 and 13267 of the California Water Code, Order No. 97-159 and Order No. 5-00-172 are rescinded and the City of Vacaville, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. The discharge of hazardous wastes at the Gibson plant is prohibited.

2. The discharge of wastes to surface waters or surface water drainage courses without WDRs that allow such discharge, is prohibited.

3. Discharge of treated wastewater at a location or in a manner different from that described in the Findings is prohibited.

4. The by-pass or overflow of wastes to surface waters is prohibited.

B. Specifications:

1. The treatment, storage or disposal of waste shall not cause pollution or a nuisance as defined in the California Water Code, Section 13050.

2. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal property line.

3. The dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/l.

4. The Discharger shall continue to operate the aeration ponds to provide the maximum removal of BOD from the wastewater prior to discharge to the stabilization ponds.

5. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

6. Ponds shall be managed to prevent breeding of mosquitos by such means as,

   a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.

   b. Weeds shall be minimized through control of water depth, harvesting, or other means.

   c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

7. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.

8. Ponds shall have sufficient capacity to accommodate allowable wastewater flow and 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. Freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).

9. On or about **1 October** of each year, available pond storage capacity shall at least equal the volume necessary to comply with Specification No. 8.

10. Each facility groundwater monitoring well shall be locked to prevent unauthorized access and shall be equipped with a watertight well cap at the top of the well casing to prevent surface water infiltration in the event that the well is submerged during periods of flooding.

C. Ground Water Limitations:

1. The Discharger shall change or discontinue waste discharge practices that cause groundwater degradation and impairment of beneficial uses of groundwater in accordance with the time schedules included in the provisions of this Order and subsequent orders issued by the Regional Board.

2. The Discharger shall return groundwater to background water quality or quality consistent with Resolution 92-49 and consistent with Resolution 68-16, as determined from further technical investigation and reports. Corrective action to achieve compliance with this requirement shall be performed in accordance with the time schedules included in the provisions of this Order and subsequent orders issued by the Regional Board.

D. Provisions:

1. The Discharger shall comply with all the items of the Standard Provisions and Reporting Requirements, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)".

2. The Discharger shall comply with Monitoring and Reporting Program No. R5-2004-0021, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.

3. The Discharger shall submit all reports required by this Order pursuant to Section 13267 of the California Water Code.

4. The Discharger shall complete the following activities and submit the following technical reports by the required dates:

   a. By **15 March 2004**, submit a technical memorandum that provides information on actions that have been taken and will be taken to reduce the salinity of incoming wastewater to the Gibson plant, including but not limited to reductions in the concentrations of EC, ammonia, sulfate and phosphorous.

   b. By **15 March 2004**, submit a site investigation work plan to characterize salt levels in the stabilization pond bottoms and underlying native soils; to determine unimpacted upgradient groundwater quality; to conduct additional groundwater investigation to characterize the horizontal and vertical extent of onsite impacts to groundwater; and to conduct a pumping test to obtain estimates of aquifer characteristics, well yield, and capture zone.

   c. By **17 May 2004**, submit a technical report documenting the completion of the measures taken to reduce the salinity of incoming wastewater to the Gibson plant, including but not limited to reductions in the concentrations of EC, ammonia, sulfate and phosphorous.

   d. By **7 February 2005**, submit an Engineering Feasibility Study (EFS) that assesses the feasibility and effectiveness of various remedial options to return impacted groundwater for all elevated constituents to background levels. The EFS shall include groundwater extraction options developed from data collected during the additional groundwater investigation and pumping test with cost estimates for partial, incremental and complete cleanup.

   e. By **7 February 2005**, submit a Preliminary Closure Plan that assesses options for closure of the ponds. This plan may be included as part of the EFS.

   f. By **1 July 2005**, submit a Corrective Action Plan (CAP) that provides an implementation plan for the best remedy selected from the EFS and the Preliminary Closure Plan.

   g. By **28 November 2005**, submit a Final Closure Plan to complete clean closure of the stabilization ponds, aeration basins, and related infrastructure. The final closure plan shall include an interpretation of data collected from samples of the stabilization pond bottoms and underlying native soils in order to determine what waste and impacted soil removal actions will be necessary for effective clean closure. If clean closure of one or more ponds or basins is determined to be infeasible, the Discharger shall submit an

amended RWD by this date to obtain Regional Board approval for closure as a landfill pursuant to Title 27.

h. By **1 December 2006**, submit a technical report documenting the completion of actions necessary to implement the Corrective Action Plan and documenting the completion of clean closure of the ponds in accordance with the Final Closure Plan. If closure of one or more ponds or basins as a landfill is necessary, the technical report required by this Provision (4.h) will also be required under a revision of these WDRs that provide Regional Board approval of the requirements for closure of the pond(s) or basin(s) as a landfill.

5. The Discharger may be required to submit technical reports as directed by the Executive Officer.

6. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the state Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with MRP No. R5-2004-0021, as required by Section 13750 through 13755 of the California Water Code.

7. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

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

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

10. The Regional Board will review this Order periodically and will revise requirements when necessary.

11. A copy of this Order shall be kept at the facility for reference.

I, THOMAS R. PINKOS, 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 30 January 2004.

Original signed by

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THOMAS R. PINKOS, Executive Officer

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-0021

FOR
CITY OF VACAVILLE
GIBSON CANYON CREEK WASTEWATER TREATMENT PLANT
CLOSURE AND CORRECTIVE ACTION
SOLANO COUNTY

The Discharger shall submit reports required by this Monitoring and Reporting Program (MRP) and the Standard Provisions and Reporting Requirements dated 1 March 1991 pursuant to Section 13267 of the California Water Code. Failure to submit the required reports can result in the imposition of civil monetary liability. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

GROUNDWATER MONITORING

The Discharger shall sample groundwater monitoring wells MW-1 through MW-6 at the facility, as well as any additional monitoring wells installed at the treatment plant following the adoption of this Order. The Discharger shall collect samples from the groundwater monitoring wells as specified in Table 1. Sample collection shall follow standard EPA protocol.

TABLE 1 - GROUNDWATER MONITORING PROGRAM

Parameter	**Units**	**Frequency**
Field Parameters		
Groundwater Elevation	Feet (100ths), MSL	Quarterly
Electrical Conductivity	µmhos/cm	Quarterly
pH	Number	Quarterly
Turbidity	Turbidity Units	Quarterly
Monitoring Parameters		
Ammonia	mg/l	Quarterly
Bicarbonate as $CaCO_3$	mg/l	Quarterly
Chloride	mg/l	Quarterly
Nitrate as Nitrogen	mg/l	Quarterly
Phosphorous	mg/l	Quarterly
Sulfate	mg/l	Quarterly
Total Kjeldahl Nitrogen	mg/l	Quarterly
Total Dissolved Solids	mg/l	Quarterly
Total Organic Carbon	mg/l	Quarterly
Total coliform organisms	MPN/100 ml	Semiannually

The Discharger shall measure the water level in each monitoring well (in feet and hundredths, MSL) and determine groundwater gradient and direction at least quarterly, including the times of expected highest and lowest water level elevations for the respective groundwater body. Groundwater elevations shall be measured for a given groundwater body within a period of time short enough to avoid temporal groundwater flow variations which could preclude accurate determination of groundwater gradient and direction.

WASTE DISCHARGE MONITORING

The Discharger shall monitor the wastewater at the following locations (Sampling Points):

1. at the influent to the treatment plant;
2. at a location within one of the active aeration ponds;
3. at the influent to the stabilization ponds; and
4. at a location within one of the active stabilization ponds.

The Discharger shall collect weekly, monthly and quarterly samples from the wastewater in accordance with Table 2.

TABLE 2 – WASTEWATER MONITORING PROGRAM

Parameter	Units	Frequency
Influent Wastewater Flow Rate [1]	gallons/day	Continuous
Electrical Conductivity	umhos/cm	Weekly
Ammonia	mg/l	Monthly
Bicarbonate as $CaCO_3$	mg/l	Monthly
Chloride	mg/l	Monthly
Nitrate as N [3]	mg/l	Monthly
Phosphorous	mg/l	Monthly
20^oC BOD_5 [2]	mg/l, lbs/day	Monthly
Sulfate [3]	mg/l	Monthly
Total Kjeldahl Nitrogen	mg/l	Monthly
Total Dissolved Solids	mg/l	Monthly
Total Organic Carbon [3]	mg/l	Monthly
Odors [4]	Observation	Monthly
Freeboard [4]	feet	Monthly

[1] Sampling Point 1 only
[2] Sampling Points 1, 3 and 4 only
[3] Sampling Point 4 only
[4] Aeration and stabilization ponds only

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the water supply can be obtained. Water supply monitoring shall be conducted in accordance with Table 3:

TABLE 3 – WATER SUPPLY MONITORING PROGRAM

Parameter	Units	Frequency
Electrical Conductivity	umhos/cm	Quarterly
Total Dissolved Solids	mg/l	Quarterly

REPORTING

The Discharger shall report field and laboratory test results in quarterly monitoring reports. The Discharger shall submit the quarterly monitoring reports to the Board by **15 January, 15 April, 15 July** and **15 October** of each year. The Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. A discussion of the monitoring results shall precede the tabular summaries.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional engineer or geologist (or their subordinate) and signed by the registered professional.

Each quarterly report is to include the following information:

(a) a discussion of the monitoring results and compliance with this MRP and the WDRs;

(b) tabulated **cumulative** monitoring data including depth to groundwater measurements, groundwater elevations above mean sea level, groundwater analytical data, wastewater analytical data, and wastewater flow rates in gallons per day;

(c) tabulated **cumulative** monitoring data in electronic format on a 3.5 inch floppy diskette or compact disk;

(d) a groundwater contour map prepared using groundwater elevation data for the current quarter that shows the hydraulic gradient, flow direction and estimated flow velocity;

(e) a copy of the laboratory analytical reports and chain of custody; and

(f) the status of interim measures and other tasks required by this Order.

The results of any monitoring done more frequently than required at the locations specified in the MRP shall also be reported to the Board.

The Discharger shall implement the above monitoring program on the effective date of this Order.

Ordered by: Original signed by

THOMAS R. PINKOS, Executive Officer

30 January 2004
Date

WLB

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2004-0021
CITY OF VACAVILLE
GIBSON CANYON CREEK WASTEWATER TREATMENT PLANT
CLOSURE AND CORRECTIVE ACTION
SOLANO COUNTY

The Gibson Canyon Creek Wastewater Treatment Plant (hereafter Gibson plant) is owned and operated by the City of Vacaville (hereafter Discharger). The Gibson plant accepts wastewater from Mariani Packing Company (hereafter Mariani) and Albertson's Distribution Center (hereafter Albertson's). The Gibson plant was formerly regulated under an NPDES permit to discharge treated wastewater to Gibson Canyon Creek. The Gibson plant no longer discharges to the creek due to a significant reduction in influent flow rate that allows the Discharger to hold all treated wastewater in existing stabilization ponds where it evaporates and percolates. The information reported by the Discharger indicates that the discharge at the Gibson plant is approximately 98% industrial wastewater and 2% sewage.

The Discharger has submitted a substantial amount of wastewater analytical data as required by the previous NPDES permit. For purposes of groundwater protection, the primary threat presented by the wastewater is high salinity. The wastewater also contains high levels of Biochemical Oxygen Demand (BOD) and suspended solids; however, since the treated wastewater is no longer discharged to surface water, salinity becomes the primary threat to water quality. The Discharger has collected wastewater samples at the influent to the Gibson plant and at the stabilization ponds following treatment in the aeration ponds. The constituents measured or analyzed at these locations are electrical conductivity (EC), total dissolved solids (TDS), BOD and total suspended solids. EC and TDS are typically good indicators of the salinity of wastewater. Of these measurements of salinity, EC is less influenced by the presence of organic material in the wastewater and provides a more consistent measure of salinity between the influent wastewater, ponded wastewater, and groundwater. The TDS is also a useful measurement; however, the high BOD in the wastewater complicates the interpretation of the TDS data. Additional wastewater and groundwater characterization is required by this Order as implemented in the Monitoring and Reporting Program.

Table 1 (below) presents the average EC measurements for influent wastewater to the Gibson plant and for wastewater in the northern stabilization pond (North Pond) that has been submitted by the Discharger. The average EC of wastewater in the North Pond from this data is 1,600 umhos/cm.

Table 1 - Wastewater Electrical Conductivity and Flow Data

Date	Average Monthly Plant Influent (umhos/cm)	Average Monthly North Pond (umhos/cm)	Average Plant Influent Flow Rate (MGD)
May 2001	1530	NS	0.097
June 2001	1353	NS	0.015
July 2001	1157	NS	0.145
August 2001	1252	NS	0.178
September 2001	1873	NS	0.127

Date	Average Monthly Plant Influent (umhos/cm)	Average Monthly North Pond (umhos/cm)	Average Plant Influent Flow Rate (MGD)
October 2001	1873	NS	0.127
November 2001	2434	NS	0.105
December 2001	1434	1120	0.098
January 2002	2380	985	0.096
February 2002	2388	1025	0.133
March 2002	2072	1140	0.096
April 2002	2458	1290	0.139
May 2002	2000	1574	0.096
June 2002	2655	1665	0.120
July 2002	2808	2120	0.090
August 2002	2016	2120	0.122
September 2002	1377	2550	0.132
October 2002	2166	2642	0.127
November 2002	1148	2153	0.136
December 2002	2020	1605	0.163
January 2003	1934	1154	0.143
February 2003	1455	1098	0.164
March 2003	2188	1060	0.158
April 2003	1878	1114	0.171
May 2003	1963	1193	0.129
June 2003	1730	1378	0.167
July 2003	1656	1540	0.153
August 2003	1163	1683	0.195
September 2003	1445	1745	---
AVERAGE (rounded)	**1940**	**1600**	**0.130**

Table 2 (following page) presents groundwater monitoring data from three monitoring wells placed around the stabilization ponds. The average EC for the current background well from this data is 600 umhos/cm. The average EC of MW-2 and MW-3 are 1,900 and 1,580 umhos/cm, respectively. The data in Table 2 indicate that the groundwater downgradient from the ponds has significantly higher salinity than the background groundwater. The most recent data from June 2002 until September 2003 in monitoring well MW-2 appears to be on an increasing trend.

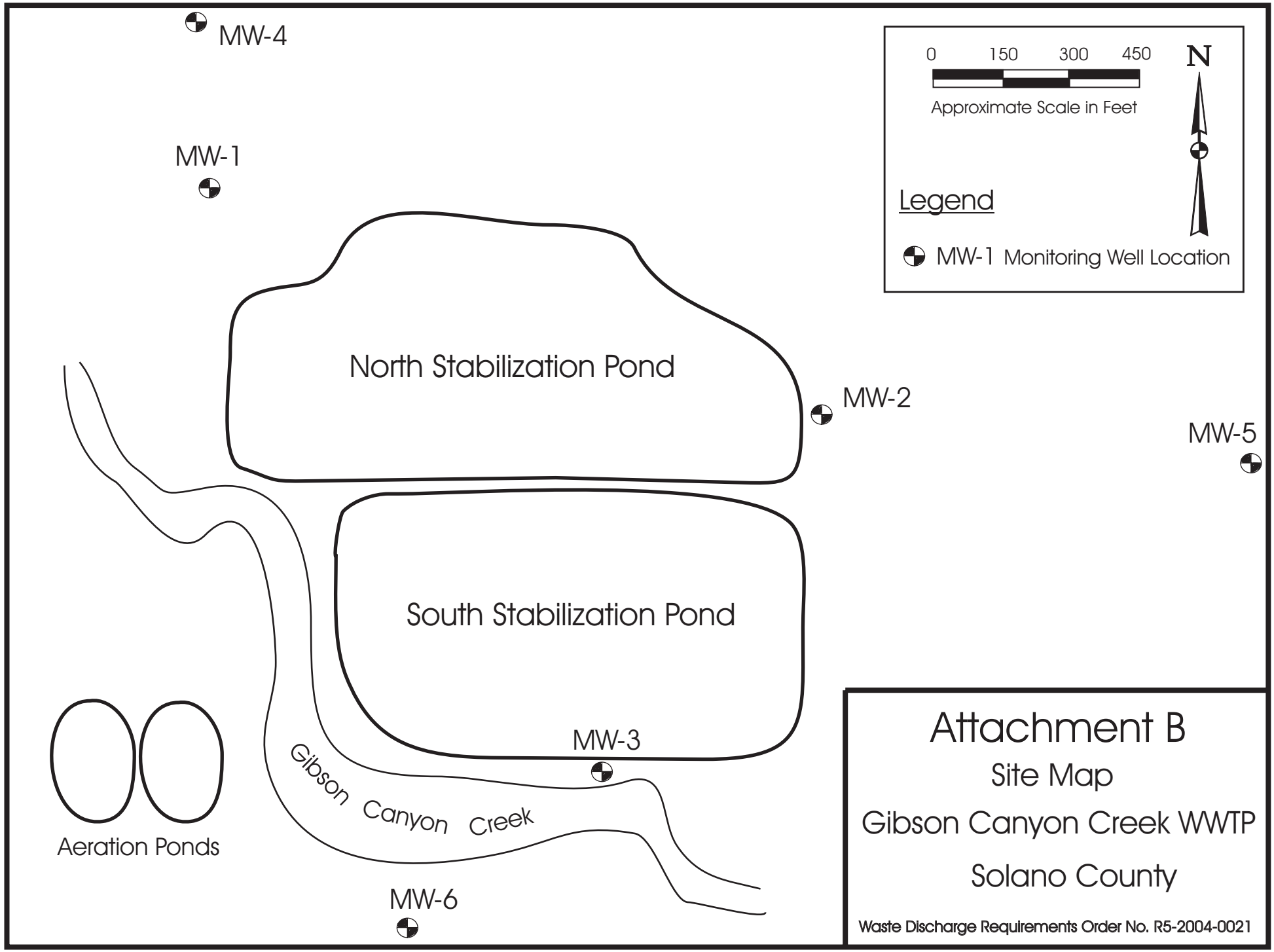
Table 2 - Groundwater Electrical Conductivity Data (umhos/cm)

Date	MW-1 (background)	MW-2 (detection)	MW-3 (detection)
May 2001	562	1670	1510
June 2001	560	1680	1490
July 2001	569	1715	1512
August 2001	572	1730	1530
September 2001	569	1710	1520
October 2001	572	1700	1520
November 2001	576	1700	1530
December 2001	575	1670	1510
January 2002	572	1640	1500
February 2002	557	1600	1550
March 2002	558	1640	1630
April 2002	549	1660	1640
May 2002	551	1680	1630
June 2002	549	1710	1640
July 2002	562	1830	1590
August 2002	570	1910	1440
September 2002	576	1950	1540
October 2002	582	1660	1530
November 2002	580	2020	1530
December 2002	585	2010	1560
January 2003	593	2100	1600
February 2003	609	2140	1650
March 2003	622	2140	1710
April 2003	641	2210	1750
May 2003	679	2300	1730
June 2003	667	2310	1700
July 2003	730	2330	1540
August 2003	762	2320	1560
September 2003	840	2330	1530
AVERAGE (rounded)	**600**	**1900**	**1580**

The Basin Plan states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The applicable EC limits to apply the narrative water quality objectives for Chemical Constituents are 700 umhos/cm for agricultural use and 900 umhos/cm for domestic and municipal supply. The 900 umhos/cm also applies the narrative water quality objective for Tastes and Odors. Since the average EC measurement at the background groundwater monitoring well of 600 umhos/cm is less than both of the applicable water quality limits for EC, and the average EC measurement in the downgradient monitoring wells both significantly exceed those water quality limits, this Order finds that discharge has caused both degradation and pollution of underlying groundwater and has impaired the beneficial uses of groundwater for municipal, domestic and agricultural supply. This Order finds the discharge is not consistent with the applicable water quality objectives and is not in compliance with the Basin Plan. Background well MW-1 also appears to show an increasing trend, indicating that it may not be out of the influent of the ponds.

As proposed by the Discharger, this Order requires the Discharger to conduct interim measures to reduce wastewater salinity, to develop a Corrective Action Plan to address groundwater impacts, and to clean close the ponds. This Order also requires the Discharger to submit several technical reports between March 2004 and November 2006 that address these tasks including interim measures to further reduce the salinity of influent wastewater to the Gibson plant prior to closure; further onsite groundwater characterization (including background); initial characterization of impacts to native soil beneath the ponds; the engineering feasibility of various methods to cleanup groundwater and proposed corrective action; preliminary and final closure plans for clean closure of the ponds; and documentation of the completion of the implementation of corrective action and completion of clean closure of the ponds.

WLB
5 January 2004



Attachment B

Site Map

Gibson Canyon Creek WWTP

Solano County

Waste Discharge Requirements Order No. R5-2004-0021