

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. 5-01-208

WASTE DISCHARGE REQUIREMENTS  
FOR  
BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE, BEAR VALLEY SKI  
COMPANY, C. BRUCE & ROMA ORVIS AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

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

1. The Bear Valley Water District (hereafter District) submitted a Report of Waste Discharge (RWD), dated 5 April 2001, for updating Waste Discharge Requirements (WDRs) to include 40 additional acres of effluent disposal area. The District owns and operates a wastewater treatment facility that serves the wastewater needs of the community of Bear Valley, Bear Valley Ski Resort, and the Lake Alpine Basin.
2. For the purposes of this Order, the term "wastewater treatment facility" ("WWTF") shall mean the sewage collection and transport system, the wastewater treatment plant, the wastewater storage ponds, and the designated wastewater disposal area. The area serviced by the WWTF is shown on Attachment A, which is attached hereto and made part of this Order by reference.
3. The wastewater treatment plant and wastewater disposal area are south of Bear Valley Village and State Route 4, in Sections 18 and 19, T7N, R18E, MDB&M, as shown in Attachment B, which is attached hereto and made part of this Order by reference.
4. The District currently discharges its treated effluent by spray irrigation. A portion of the disposal area (94 acres) is owned by and leased from C. Bruce & Roma Orvis and James L. & Marianne S. Orvis (Orvis). The remaining 40 acres is secured under a United States Forest Service (USFS) Special Use Permit. The Discharger has recently added 40 additional acres of land to its USFS Special Use Permit for the purpose of increasing its effluent disposal capability.
5. Waste Discharge Requirements (WDRs) Order No. 94-191, adopted by the Board on 24 June 1994, prescribes requirements for effluent disposal to land. However, the Order does not reflect current Board plans and policies or the District's recent increase in disposal area, and is therefore in need of update.
6. The WWTF receives wastes from various domestic, public service (sheriff and rescue station), and commercial sources. One snowmobile maintenance facility exists in the commercial section of the Bear Valley Village area.
7. The wastewater collection systems within the Bear Valley Water District boundaries are owned and operated by three entities. The District owns and has sole responsibility for operation and maintenance of the collection system for the Bear Valley Village. The District owns and is

responsible for the gravity main portion of the Bear Valley Ski Resort collection system, while the ski area laterals, pump station, and force main are owned, operated and maintained by Bear Valley Ski Company (BVSC), and shall be considered the responsibility of BVSC. The Lake Alpine Basin collection system is owned and operated by the District except for a small pump station and force main on the west side of Lake Alpine, which is the responsibility of the USFS. The gravity main, main pump station and the force main south of State Route 4 to the WWTF are owned and operated by the District but are located in a right-of-way on property owned by Toeniskoetter Breeder, Inc. The collection system is shown on Attachment C, which is attached hereto and made part of this Order by reference.

8. Hereafter, responsible entities shall be referred to individually as "District", "USFS", "BVSC", or "Orvis", or collectively as "Discharger". Because the gravity main, main pump station, and force main south of State Route 4 to the WWTF are on a right-of-way and not leased, and because the District owns and has total responsibility for the operation and management of those facilities, Toeniskoetter Breeder, Inc. is not considered a responsible party for the purposes of this Order, and is not named as a Discharger.

#### Existing Discharge

9. The wastewater treatment plant utilizes an aerated pond treatment process. The treatment system consists of a 40 acre-foot aeration pond, which is aerated for 10 to 12 hours per day. The treated wastewater is disinfected as it leaves the aerated pond, and is then pumped to the 346 acre-foot secondary effluent storage reservoir. The design treatment capacity of the plant is 500,000 gallons per day (gpd). However, because the treatment, storage, and disposal system does not have sufficient capacity to contain that volume of wastewater, the flow limit for the facility is lower.
10. The District's limited data from June 2000 and March 2001 characterize the influent as follows:

<u>Constituent</u>	<u>Units</u>	<u>Average Concentration</u>
BOD <sub>5</sub> <sup>1</sup>	mg/l	94
Total Suspended Solids	mg/l	72
Total Coliform Organisms	MPN <sup>2</sup> /100 ml	>2,400
Total Dissolved Solids	mg/l	190
Total Kjeldahl Nitrogen	mg/l	35
Organic Nitrogen	mg/l	14
Ammonia Nitrogen	mg/l	21
Nitrite Nitrogen	mg/l	<0.020
Nitrate-Nitrogen	mg/l	0.60

<sup>1</sup> Five-day, 20°C biochemical oxygen demand

<sup>2</sup> Most probable number

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
 BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
 BEAR VALLEY WASTEWATER TREATMENT FACILITY  
 ALPINE COUNTY

11. Based on the District's RWD, the average effluent strength from January 1998 through December 2000 is:

<u>Constituent</u>	<u>Units</u>	<u>Average Concentration</u>	<u>Maximum Concentration</u>
BOD <sub>5</sub> <sup>1</sup>	mg/L	10	25
Total Suspended Solids	mg/L	<5	25
Total Coliform Organisms	MPN <sup>2</sup> /100 mL	<2	1600
Total Dissolved Solids	mg/L	214	
Total Kjeldahl Nitrogen	mg/L	29	
Organic Nitrogen	mg/L	5.0	
Ammonia Nitrogen	mg/l	24	
Nitrite Nitrogen	mg/L	0.03	
<u>Nitrate-Nitrogen</u>	mg/L	0.17	

<sup>1</sup> Five-day, 20°C biochemical oxygen demand

<sup>2</sup> Most probable number

12. Order No. 94-191 permits the discharge of effluent to disposal fields that occupy approximately 134 acres in Sections 18 and 19, T7N, R18E, MDB&M. Much of that land has features (e.g., trees, rocks, steep slopes) that limit the area that can actually be irrigated. The 40 acres recently added under the USFS Special Use Permit are in Sections 17, 19 and 20, T7N, R18E, MDB&M.
13. Limited monitoring data indicate that the average nitrogen content of effluent is approximately 30 mg/L. However, the total nitrogen content in the storage reservoir is greatly reduced by snowmelt dilution during the spring, and was recently measured at 3.1 mg/l. Because there is no harvesting or removal of the vegetation growing in the disposal area, there is minimal removal of nutrients during the disposal process. This may pose a threat to groundwater.
14. Because of the nature of the population served by the WWTF and a recognized infiltration and inflow (I/I) problem, current monthly average daily influent flows fluctuate greatly. For the year 2000, the monthly average daily flow for the month of October, known to be a period when few visitors are in the area and the influence from I/I is at a minimum, was 37,000 gallons per day (gpd). The monthly average daily influent flow for April, when I/I is typically high, was approximately 230,000 gpd. The total reported influent flow for the year was approximately 30 million gallons, which averages to 82,000 gpd.
15. Because flows fluctuate throughout the year (due to the seasonal nature of the ski resort and campgrounds, and because of the I/I problems), the Discharger has calculated the *annual* average daily flows for the last ten years. The peak annual average influent flow was 138,000 gpd (in 1995) while the minimum annual average influent flow was 76,000 gpd. The average annual influent flow for the ten years between 1990 and 2000 was 103,000 gpd.

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

16. All headworks screenings and grit are landfilled. Approximately every two years, the District retrieves a surface coring of the treatment pond bottom to measure sludge accumulation. During the past 27 years, no noticeable accumulation of sludge has occurred within the treatment pond.

#### **Sanitary Sewer System**

17. The Discharger's sanitary sewer system collects wastewater through the use of sewers, pipes, pumps, and/or other conveyance systems and directs this raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" occurs when there is a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) are part of the sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.
18. Sanitary sewer overflows consist of varying mixtures of domestic sewage, industrial wastewater, and commercial wastewater; this mixture depends on pattern of land use in the sewage collection system tributary to the overflow. The chief causes of sanitary sewer overflows include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.
19. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. Sanitary sewer overflows can cause temporary exceedances of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.
20. The Discharger is expected to take all necessary steps to adequately maintain, operate, and prevent discharges from its sanitary sewer collection system. This Order requires the Discharger to prepare and implement a sanitary sewer operation and maintenance plan, a sanitary sewer overflow prevention plan and a sanitary sewer overflow response plan.

#### **Enforcement Actions**

21. Because of insufficient wastewater disposal capacity, treated wastewater accumulated in the effluent storage pond during the wet years of the 1990's. Because of the inability to dispose of this accumulated wastewater by spray irrigation, the District violated WDR Order No. 94-191 by discharging treated wastewater to Bloods Creek from June to July 1995 (977,000 gallons), May 1996 (4,000,000 gallons), from June to July 1998 (4,000,000 gallons), and from April to June 1999 (7,420,000 gallons).

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

22. In December 1999, the Board issued an Administrative Civil Liability Complaint for \$30,000 against the District for seasonal discharges to Bloods Creek from its effluent storage pond. Following negotiations with the District, the Board reduced the liability to \$5,000, provided that by March 2000 the District submit an analysis of alternatives that would allow it to come into compliance with its WDRs and that it adopt a revenue plan to produce the funds to implement the necessary measures. The District completed the required tasks on time and paid the \$5,000 liability.
23. On 27 January 2000, the Board adopted Cease and Desist (C&D) Order No. 5-00-001 against the District for the same discharges to Bloods Creek from the effluent storage pond. The Order imposed a time schedule for the implementation of both interim and long-term measures to prevent future unauthorized discharges from the storage pond. The C&D also banned the addition of more than four residential connections to the District's WWTF per year.
24. The District has implemented interim measures as required by the C&D and has prevented unauthorized discharges from the storage pond from January 2000 to the present. The District plans to continue some of the interim measures on a long-term basis, in order to prevent potential future unauthorized releases.
25. The District has also implemented some of the long-term measures as required by the C&D. Some of those measures include an aggressive I/I reduction program, increasing the size and efficiency of the effluent disposal system, and pursuit of an NPDES permit for seasonal discharge to Bloods Creek.
26. Water balance calculations provided by the District in its RWD indicate that, even with the addition of the 40 acres of USFS land for effluent disposal, there still may be a three million gallon shortfall in disposal capacity with 100-year annual precipitation. With estimated growth, this shortfall may be approximately five million gallons by 2011. Therefore, the Board will consider issuance of an updated C&D and connection ban at its 27 July 2001 meeting.

#### **Groundwater Considerations**

27. The sources of drinking water for the District's service area are local springs and wells. No information has been provided regarding constituent concentrations of these water sources.
28. Order No. 94-191 does not require the monitoring of groundwater and, except for a soils investigation conducted in the vicinity in 1972, little is known about groundwater below the WWTF area.
29. Based on the 1972 soils investigation report, groundwater was encountered at depths ranging from 2.5 to 11 feet below ground surface at or near the soil/bedrock interface in the vicinity of the ponds and disposal area. The District has assumed a percolation rate of approximately 3 inches/month through the fractured granitic bedrock.

### **Degradation**

30. State Water Resources Control Board (SWRCB) Resolution No. 68-16 (hereafter Resolution 68-16 or the "Antidegradation Policy") requires the Board in regulating the discharge of waste to maintain high quality waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board's policies (e.g., quality that exceeds water quality objectives).
31. The Board finds that some degradation of groundwater beneath the WWTF is consistent with Resolution 68-16 provided that:
  - the degradation is confined to a specified area;
  - the discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures;
  - the degradation is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order; and
  - the degradation does not result in water quality less than that prescribed in the Basin Plan.
32. Some degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of California. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impact on water quality will be substantially less. Degradation of groundwater by constituents (e.g., toxic chemicals) other than those specified in the groundwater limitations in this Order, and by constituents that can be effectively removed by conventional treatment (e.g., total coliform bacteria) is prohibited. When allowed, the degree of degradation permitted depends upon many factors (i.e., background water quality, the waste constituent, the beneficial uses and most stringent water quality objective, source control measures, waste constituent treatability).
33. Economic prosperity of local communities and associated industry is of maximum benefit to the people of California, and therefore sufficient reason exists to accommodate growth and groundwater degradation around the WWTF, provided that the terms of the Basin Plan are met.

### **Treatment and Control Practices**

34. These waste discharge requirements do not allow degradation of groundwater beneath the disposal fields. These requirements do require that the Discharger monitor the groundwater at the disposal fields and if the monitoring data indicate that the discharge of waste to the disposal fields is causing groundwater to contain waste constituents in concentrations statistically greater than

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

background water quality, then the Discharger may be required to submit a report to indicate how such degradation will comply with Resolution 68-16. Upon review of such report, the Board may revise this Order, including the groundwater limitations.

35. The Discharger has a recognized collection system I/I problem, does not have auto dialers or backup storage and backup generators on all pump stations, may not have an adequate collection system maintenance and monitoring program, has unlined wastewater treatment and storage ponds, does not harvest or remove plant material grown in the disposal area, and, therefore, manages the discharge in a manner that may not constitute BPTC as used in Resolution 68-16. In addition, the potential impacts on groundwater and the appropriate level of degradation that complies with Resolution 68-16 has not been evaluated.
36. This Order, therefore, establishes a schedule of tasks to evaluate BPTC for collection, treatment, storage, and disposal components of the WWTF and to characterize groundwater for all waste constituents.
37. This Order establishes interim groundwater limitations for the WWTF that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. This Order contains tasks for assuring that BPTC and the highest water quality consistent with the maximum benefit to the people of the State will be achieved. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution 68-16. Based on the results of the scheduled tasks, the Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution 68-16.

#### **Basin Plan, Beneficial Uses, and Regulatory Considerations**

38. The WWTF is in a moist alpine region. Average annual rainfall in the area is 50 – 60 inches and annual average pan evaporation rate in the area is approximately 43 inches.
39. Surface soils in the vicinity of the WWTF have been identified as fine sandy silt, underlain by clayey sand, sandy silt, and clay. The underlying bedrock is granitic.
40. The WWTF is within the North Fork Stanislaus Hydrologic Area (No. 534), as depicted on interagency maps prepared by the California Department of Water Resources (DWR) in August 1986. Surface water drainage from the WWTF is to Bloods Creek.
41. Bloods Creek collects runoff at certain times of the year and terminates at the North Fork of the Stanislaus River, approximately two miles southwest of the WWTF.
42. The *Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Fourth Edition* (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for protecting all waters of the basin,

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-01-208  
BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

-8-

and incorporates by reference plans and policies of the State Water Resources Control Board. These requirements implement the Basin Plan.

43. The beneficial uses of the North Fork of the Stanislaus River are municipal, domestic, and agricultural supply, power generation, contact and noncontact recreation, warm and cold freshwater habitat, and wildlife habitat.
44. The beneficial uses of groundwater in the area are municipal, industrial, and agricultural supply.
45. The Basin Plan encourages reclamation of wastewater wherever feasible.
46. The Basin Plan establishes numerical and narrative water quality objectives for surface and groundwater within the basin, and recognizes that water quality objectives are achieved primarily through the Board's adoption of waste discharge requirements and enforcement orders. Where numerical water quality objectives are listed, these are limits necessary for the reasonable protection of beneficial uses of the water. Where compliance with narrative water quality objectives is required, the Board will, on a case-by-case basis, adopt numerical limitations in orders, which will implement the narrative objectives to protect beneficial uses of the waters of the state.
47. The Basin Plan identifies numerical water quality objectives for waters designated as municipal supply. These are the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
48. The Basin Plan contains narrative water quality objectives for chemical constituents and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in plants or animals. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses.
49. Section 13241 of the Water Code requires the Regional Board to consider various factors, including economic considerations, when adopting water quality objectives into its Basin Plan. Water Code Section 13263 requires the Regional Board to address the factors in Section 13241 in adopting waste discharge requirements. The State Board, however, has held that a Regional Board need not specifically address the Section 13241 factors when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

water quality objectives. These waste discharge requirements implement adopted water quality objectives. Therefore, no additional analysis of Section 13241 factors is required.

50. Federal regulations for stormwater discharges were promulgated by the U.S. Environmental Protection Agency on 16 November 1990 (40 CFR Parts 122, 123, and 124). The regulations require specific categories of facilities which discharge stormwater associated with industrial activities to obtain NPDES permits. The flow at this wastewater treatment plant is less than 1.0 mgd and therefore the Discharger is not required to apply for a stormwater NPDES permit.
51. The discharge authorized herein and the treatment and storage facilities associated with the discharge, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20380 et seq. (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:
  - a. The waste consists primarily of domestic sewage and treated effluent;
  - b. The waste discharge requirements are consistent with water quality objectives; and
  - c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.
52. 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 proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes 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."
53. California Department of Water Resources standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981), and any more stringent standards adopted by the Discharger or county pursuant to CWC section 13801, apply to all monitoring wells.
54. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27. While the WWTF is exempt from Title 27, the data analysis methods of Title 27 are appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.

55. On 16 July 2001, the District certified a Negative Declaration for this project in accordance with the California Environmental Quality Act (CEQA), (Public Resources Code Section 21000, et seq.) and the State CEQA Guidelines.
56. Pursuant to CWC section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

#### Public Notice

57. The Board considered all the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, in establishing the following conditions of discharge.
58. The Board consulted with the Alpine County Health Department, and considered their recommendations regarding public health aspects for water reclamation on the disposal land.
59. The 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.
60. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED** that Waste Discharge Requirements Order No. 94-191 is rescinded and the Bear Valley Water District, United States Forest Service, Bear Valley Ski Company, C. Bruce Orvis & Roma Orvis, and James L. Orvis & Marianne Orvis, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, shall comply with the following:

*[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991 that are incorporated by reference into this Order.]*

#### A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited, except as allowed by an NPDES permit.
2. Bypass or overflow of untreated or partially treated waste is prohibited.
3. The discharge of sewage from a sanitary sewer system at any point upstream of a wastewater treatment plant is prohibited.

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-01-208  
 BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
 BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
 BEAR VALLEY WASTEWATER TREATMENT FACILITY  
 ALPINE COUNTY

4. Neither the treatment nor the discharge shall cause a nuisance or condition of pollution as defined by the California Water Code, Section 13050.
5. The discharge shall not cause the degradation of any water supply.
6. The discharge of waste classified as 'hazardous,' as defined in Section 20164 of Title 27, CCR, or 'designated,' as defined in Section 13173 of the California Water Code, is prohibited.
7. Surfacing of wastewater outside or downgradient of the ponds is prohibited.
8. The discharge of any wastewater other than that from domestic sources or domestic equivalent is prohibited.
9. Application of wastewater effluent so as to cause runoff to and degradation of any water body or wetland is prohibited.
10. Application of wastewater to areas different than those described in Finding No. 4 and shown on Attachment B is prohibited.
11. Use of wastewater for purposes other than irrigation is prohibited.

**B. Discharge Specifications**

1. The annual average daily inflow into the wastewater treatment plant shall not exceed 100,000 gpd.
2. Objectionable odors originating at this WWTF shall not be perceivable beyond the limits of the wastewater treatment area, effluent ponds, or disposal area.
3. As a means of discerning compliance with Discharge Specification No. 2, the dissolved oxygen content in the upper zone (one foot) of all wastewater ponds shall not be less than 1.0 mg/l.
4. Discharge to the effluent storage pond shall comply with the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD <sub>5</sub> <sup>1</sup>	mg/L	30	60
Total Suspended Solids	mg/L	30	60
<u>Total Coliform Organisms</u>	MPN <sup>2</sup> /100 mL	23	240

<sup>1</sup> Five-day, 20°C Biochemical oxygen demand.

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BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

5. The discharge shall not have a pH less than 6.0 or greater than 9.0.
6. The WWTF shall be protected to prevent inundation or washout due to floods with a 100-year return frequency.
7. Upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow, the Discharger shall, to the extent necessary to maintain compliance with this Order, take any necessary remedial action to (a) control or limit the volume of sewage discharged, (b) terminate the sewage discharge as rapidly as possible, and (c) recover as much as possible of the sewage discharged (including washdown water) for proper disposal. The Discharger shall implement all remedial actions to the extent they may be applicable to the discharge including the following:
  - a. Interception and rerouting of sewage flows around the sewage line failure;
  - b. Vacuum truck recovery of sanitary sewer overflows and washdown water;
  - c. Use of portable aerators where complete recovery of the sanitary sewer overflows are not practicable and where severe oxygen depletion is expected in surface waters; and
  - d. Cleanup of sewage-related debris at the overflow site.
8. The treatment and storage ponds shall be managed to prevent breeding of mosquitoes. In particular:
  - a. An erosion control plan should assure that small coves and irregularities are not created around the perimeter of the water surface;
  - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides; and
  - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
9. Public contact with wastewater shall be precluded or controlled as appropriate through such means as fences, signs or acceptable alternatives.
10. Freeboard shall never be less than two feet in any pond (measured vertically from the lowest elevation of the pond embankment).
11. Storage ponds should have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter. Design seasonal precipitation should be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
12. On **15 November** of each year, available storage capacity in storage ponds should be at least equal to the volume necessary to comply with Discharge Specification B.10 and B.11.

13. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of Groundwater Limitations.

**C. Land Disposal Specifications**

1. In accordance with the Water Reuse Policy contained in the Basin Plan, the District shall optimize land disposal of treated wastewater.
2. The District may not discharge wastewater 24 hours before precipitation, during periods of precipitation, and for at least 24 hours after cessation of precipitation, or when soils are saturated. This Specification does not apply during unanticipated summer thunderstorms. However, the Discharger must always comply with Discharge Prohibition A.1.
3. Direct or windblown spray shall be confined to the designated disposal area and prevented from contacting outdoor eating areas, drinking water facilities, homes, or surface watercourses.
4. The District may not spray irrigate with treated wastewater when wind velocities exceed 30 mph.
5. The Discharger shall maintain the following setback distances in the spray irrigation disposal area:

<u>Setback Distance (feet)</u>	<u>To</u>
25	Property line
30	Public roads
100	Irrigation wells/Drainage courses
150	Domestic wells

6. The perimeter of the land disposal area shall be graded as necessary to prevent ponding along public roads or other public areas.
7. Application of wastewater to the disposal area shall be at reasonable rates considering the crop, soil, climate, and irrigation management system in accordance with the land disposal management plan required under Provision G.I.c. of this Order.
8. The land disposal area shall be managed to prevent breeding of mosquitoes. More specifically:

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
 BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
 BEAR VALLEY WASTEWATER TREATMENT FACILITY  
 ALPINE COUNTY

- a. There shall be no standing water on the irrigation parcel area 48 hours after effluent application to a parcel ceases;
  - b. Ditches must be maintained essentially free of emergent, marginal, and floating vegetation; and
  - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store effluent.
9. Public contact with disposed wastewater shall be precluded through such means as fences, signs, or other acceptable alternatives.
  10. To alert the public of the disposal of wastewater, signs with the proper wording of sufficient size shall be placed at areas of access and around the perimeter of all areas used for effluent disposal.

#### D. Groundwater Limitations

1. Release of waste constituents from any storage or treatment component associated with the WWTF shall not cause groundwater under and beyond the storage or treatment component, as determined by an approved well monitoring network, to:
  - a. Contain any of the following constituents in concentration greater than as listed or greater than background quality, whichever is greater:

<u>Constituent</u>	<u>Units</u>	<u>Limitation</u>
Boron	mg/L	0.6
Chloride	mg/L	142
Iron	mg/L	0.3
Manganese	mg/L	0.05
Sodium	mg/L	69
Total Coliform Organisms	MPN/100 mL	Nondetect
Total Dissolved Solids <sup>1</sup>	mg/L	450
Total Nitrogen	mg/L	10
Nitrite (as N)	mg/l	1
Nitrate (as N)	mg/L	10
Ammonia (as N)	mg/l	0.5

<sup>1</sup> A cumulative impact limit that accounts for several dissolved constituents in addition to those listed here separately [e.g., alkalinity (carbonate and bicarbonate), calcium, hardness, phosphate, potassium, etc.]

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

- b. Contain any constituent not identified in Groundwater Limitation D.1.a in concentrations greater than background quality (whether chemical, physical, biological, bacteriological, radiological, or some other property or characteristic).
  - c. Exhibit a pH of less than 6.5 or greater than 8.5 pH Units.
  - d. Impart taste, odor, or color that creates nuisance or impairs any beneficial use.
- 2a. Release of waste constituents from any land disposal area associated with the WWTF shall not cause groundwater under and beyond the land disposal area to contain waste constituents in concentrations statistically greater than background water quality, except for coliform bacteria. For coliform bacteria, increases shall not cause the most probable number of total coliform organisms to exceed 2.2 MPN/100 ml over any 7-day period.
  - 2b. If groundwater monitoring shows that waste constituents are present in concentrations greater than background, then upon request of the Executive Officer, the Discharger shall complete the report described in Provision F.3.

#### **E. Solids Disposal Requirements**

Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has undergone sufficient treatment and testing to qualify for reuse pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations.
3. Any storage of residual sludge, solid waste, and biosolids on property of the WWTF shall be temporary and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations.
4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, WWTF, composting site) operated in accordance with valid waste

discharge requirements issued by a regional water quality control board will satisfy this specification.

5. Use of biosolids at the facility as a soil amendment shall comply with General Biosolids Order (State Water Resources Control Board Water Quality Order No. 2000-10-DWQ, *General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities*) or shall comply with individual WDRs. The Discharger must obtain a "Notice of Applicability" of the General Biosolids Order from the Executive Officer prior to discharge of biosolids to any site.
6. Use and disposal of biosolids should comply with the self-implementing federal regulations of 40 CFR 503, which are subject to enforcement by the U.S. Environmental Protection Agency (EPA), not the Board. If during the life of this Order the State accepts primacy for implementation of 40 CFR 503, the Board may also initiate enforcement where appropriate.

#### F. Provisions

1. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code. Except for the report required by Provision F.1.b., all reports shall be prepared and stamped by a California Registered Engineer or Engineering Geologist.
  - a. By **1 October 2001**, the Dischargers (District, USFS, and BVSC) shall submit a *Sanitary Sewer Overflow Response Plan (SSORP)* that describes procedures for responding to sanitary sewer overflows so as to (a) minimize the volume of sewer overflow that enters surface waters, and (b) minimize the adverse effects of sewer overflows on water quality and beneficial uses. This plan shall outline steps to be taken when an overflow or spill occurs, and provide a framework to ensure that all overflows and spills are properly identified, responded to, and reported. The SSORP shall include a posting plan, in which any posting of areas contaminated with sewage is performed at the direction of the local health services agency.

The Dischargers shall maintain the SSORP in an up-to-date condition and shall amend the SSORP as necessary to accomplish the above objectives. The Dischargers shall review and amend the SSORP as appropriate after each sanitary sewer overflow. The Dischargers shall also ensure that the up-to-date SSORP is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it.

- b. By **1 March 2002**, the District shall submit a technical report, proposing a groundwater-monitoring network for both the treatment/storage ponds and the disposal fields. The technical report shall consist of a Monitoring Well Installation Workplan for a network that satisfies the first section of Attachment D, "*Items to be Included in a Monitoring Well Installation Workplan and a Monitoring Well Installation Report of Results*". The network shall consist of one or more background monitoring wells and two or more compliance monitoring wells downgradient of the wastewater ponds and an appropriate

number of background and downgradient monitoring wells for the disposal fields. Every monitoring well shall be constructed to yield representative samples from the uppermost layer of the uppermost aquifer and to comply with applicable Well Standards.\*

- c. By **1 April 2002**, the Dischargers (District, USFS, and BVSC) shall submit a *Sanitary Sewer Overflow Prevention and Maintenance Plan* (SSOPMP) covering all three entities' collection systems. The SSOPMP shall describe (a) actions designed to prevent, or minimize the potential for sanitary sewer overflows, and (b) actions designed to properly maintain the collection system. The first portion of the SSOPMP shall describe how the Dischargers will:
- i. Provide routine inspection and testing of all pipelines, lift stations, valves, and other key system components. The inspection/testing program shall be designed to reveal problems that might lead to accidental spills and ensure that preventive maintenance is completed;
  - ii. Repair or replace old, worn out, or defective equipment;
  - iii. Minimize the need for manual operation of critical systems; and
  - iv. Provide spill alarms or other "fail safe" mechanisms.

The second section of the SSOPMP shall describe how the Dischargers will:

- i. Properly manage, operate and maintain, at all times, all parts of the collection system;
- ii. Provide adequate capacity to convey base flows and peak flows for all parts of the collection system to the WWTF;
- iii. Take all feasible steps to stop and mitigate the impact of sanitary sewer overflows in portions of the collection system; and
- iv. Provide notification to parties with a reasonable potential for exposure to pollutants associated with the overflow event.

The SSOPMP shall contain a detailed map or maps of the sanitary sewer system, identifying sewer mains, manholes, and lift stations; a detailed listing of elements to be inspected; a description of inspection procedures and inspection frequency; and sample inspection forms.

The Dischargers shall maintain the SSOPMP in an up-to-date condition and shall amend the SSOPMP whenever there is a change (e.g. in the design, construction, operation, or maintenance of the sanitary sewer system or sewer facilities) that materially affects the potential for sanitary sewer overflows, or whenever there is a sanitary sewer overflow. The Dischargers shall ensure that the up-to-date SSOPP is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it.

- d. By **1 May 2002**, the District shall submit a technical report describing how it manages its land disposal area such that runoff will be prevented, tailwater will be properly controlled, and public health and safety will be protected. The technical report shall

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-01-208  
BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

-18-

include a map showing locations of all domestic and irrigation wells that are within and near the disposal area, areas of public access, location and wording of public warning signs and setback distances from irrigation/domestic wells, property boundaries, roads, and drainage courses.

- e. By **1 June 2002**, the District shall submit a Revenue Plan that quantifies, to the extent feasible, the costs associated with completing each item of Provisions F.1.f. through F.1.i. and with implementing the preferred options listed in the Land Disposal Maximization Plan required by the C&D. The Revenue Plan shall identify the source of revenue the District intends to use to fund costs. If the District has inadequate funds at the time of the submittal to cover all costs, the Revenue Plan shall also describe actions and schedules the District shall follow to obtain the necessary revenue before it is critical to compliance with the terms of this Order.
- f. By **1 September 2002**, the District shall submit a Monitoring Well Installation Report that satisfies the second section of Attachment D.
- g. After satisfying Provision F.1.f, the District shall continue monitoring in accordance with the groundwater monitoring program described in the MRP for **one full year** at least at the frequency specified in the MRP. By **1 December 2003**, the District shall submit a written technical report that characterizes the groundwater quality of each monitoring well. The report shall indicate for each constituent identified in the MRP, the background concentration in background well(s) and the actual concentration in each compliance-monitoring well. Determinations of background quality shall be made using the methods described in Title 27, section 20415(e)(10). The report shall compare actual concentrations in each compliance monitoring well with the interim numeric limitations found in Groundwater Limitations D.1 and describe the compliance results. For purposes of the report, the District will recommend background limitations for waste constituents listed in Groundwater Limitation D.1 where background concentrations are greater than the limitation. Subsequent use of a concentration as a background limitation will be subject to the discretion of the Executive Officer.
- h. By **1 January 2003**, the District shall submit for Executive Officer approval a written workplan in the form of a technical report that sets forth a schedule for a systematic and comprehensive technical evaluation of each component of the WWTF's and land discharge area's waste treatment and control methods to determine for each waste constituent listed in Groundwater Limitation D.1 the best practicable treatment and control methods as required by Resolution 68-16. The technical report shall contain a preliminary evaluation of each component and propose a time schedule for performing the comprehensive technical evaluation. The report shall include an evaluation of whether surface waters are adequately protected from impact by the treatment and storage ponds. The schedule to complete the comprehensive technical evaluation shall be as short as practicable and not exceed one year.

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

- i. By the schedule approved by the Executive Officer pursuant to Provision F.1.h., but no later than **1 January 2004**, the written comprehensive technical evaluation shall be submitted with the District's written recommendations for WWTF modifications (e.g., component upgrade and retrofit). The report shall include detailed methods the District concludes will provide means to measure continuous process control and assure continuous compliance into the future. The source of funding and proposed schedule shall be identified. In no case shall completion of the necessary improvement exceed four years past the completion date of the comprehensive technical evaluation of a component unless reviewed and specifically approved by Board action. The component evaluation, recommended improvements, and schedule are subject to the Executive Officer's review and approval.
  - j. By **1 January 2005**, the District shall submit a technical report that proposes specific numeric groundwater limitations that reflect full implementation of BPTC, and describe how these were determined considering actual data from compliance monitoring wells, impact reductions through full implementation of BPTC, reasonable growth, etc. The District should submit results of a conceptual groundwater model to support its proposal.
  - k. By **1 January 2008**, the District shall submit a written technical report on the overall status of compliance with implementation of BPTC and compliance with all groundwater limitations.
2. Upon completion of tasks set forth in this Order, the Board shall consider the evidence provided and may revise this Order, including the Groundwater Limitation.
  3. If groundwater monitoring results show that the discharge of waste to the disposal field is causing groundwater to contain waste constituents in concentrations statistically greater than background water quality, then within 120 days of the request of the Executive Officer, the Discharger shall submit a report showing that degradation of the groundwater complies with SWRCB Resolution No. 68-16, i.e., that it is (a) in the best interest of the people of the state, (b) that best practical treatment and control measures have been implemented to reduce the amount of degradation, (c) that the groundwater degradation will not exceed applicable water quality objectives, and (d) that the degradation is confined to a specified area.
  4. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as *Standard Provision(s)*.
  5. The District shall comply with Monitoring and Reporting Program No. 5-01-208, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
  6. At least **90 days prior** to termination or expiration of any lease, contract, or agreement involving the wastewater collection, treatment, or disposal system, used to justify the capacity

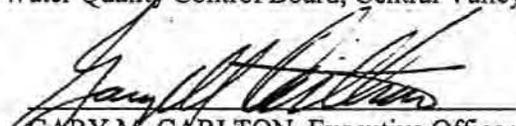
WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-01-208  
BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

-20-

authorized herein and assure compliance with this Order, the Discharger shall notify the Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.

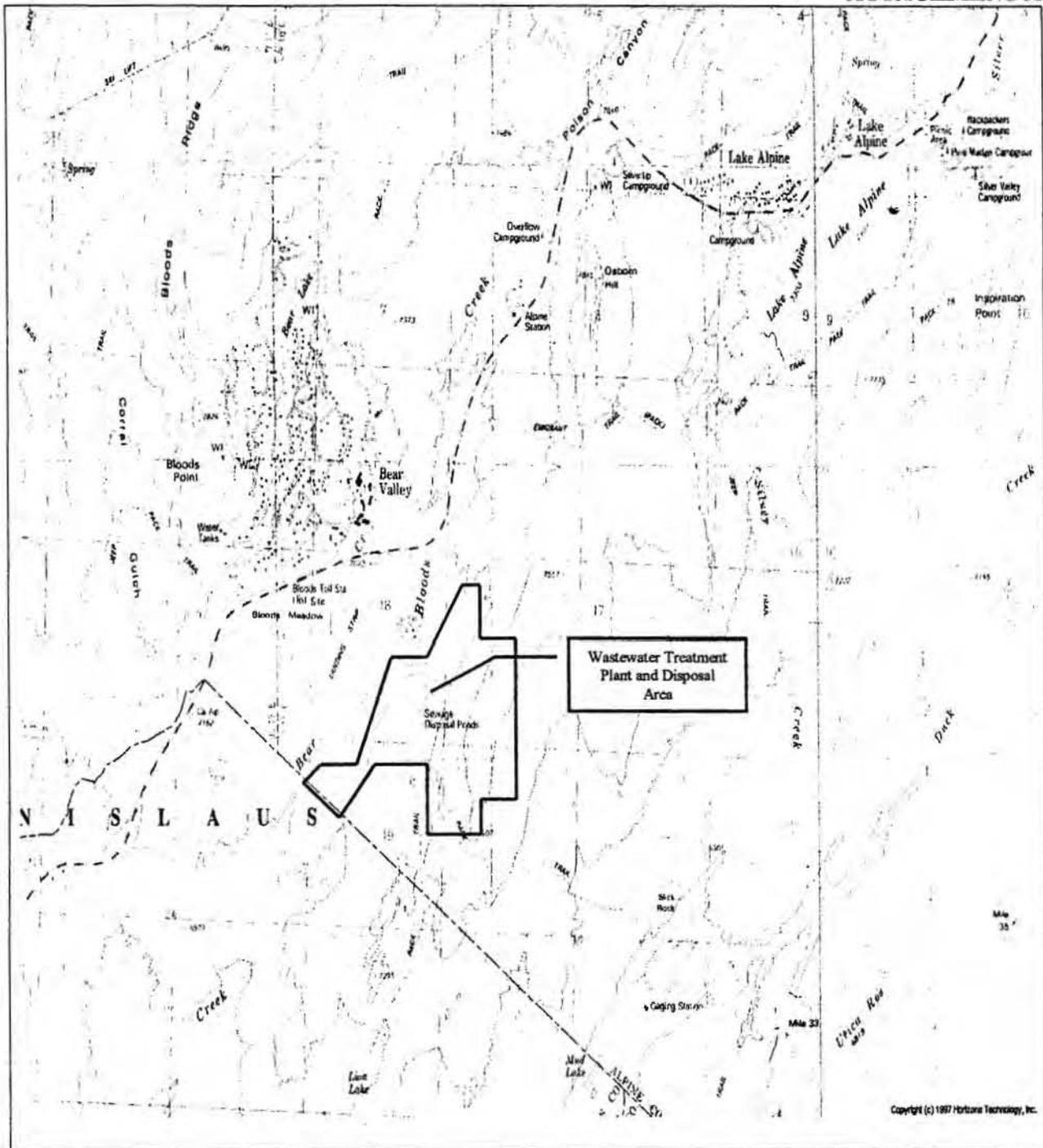
7. The Discharger shall use best practicable treatment or control, including proper operation and maintenance, to comply with terms of this Order.
8. In the event of any change in control or ownership of land or waste discharge facilities described herein, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.
9. The Discharger must comply with all applicable 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 Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
10. A copy of this Order, including its attachments and Standard Provisions, shall be kept at the WWTF for reference by operating personnel. Key operating personnel shall be familiar with its contents.
11. The Board will review this Order periodically and will revise requirements when necessary.

I, GARY M. CARLTON, 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 27 July 2001.

  
GARY M. CARLTON, Executive Officer

JRM:7/27/01

ATTACHMENT A

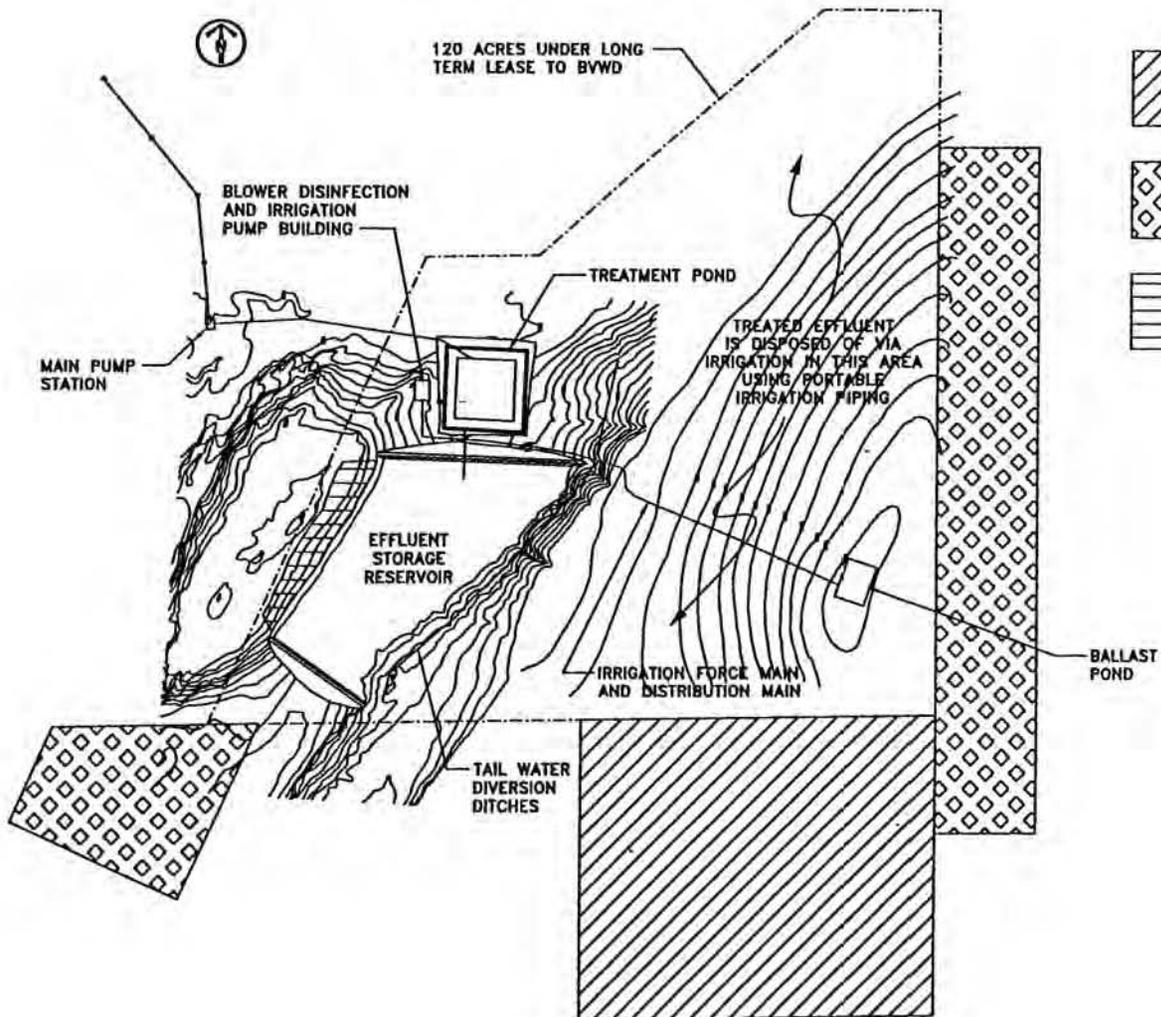


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Drawing Reference:  
 TAMARACK QUADRANGLE  
 U.S.G.S TOPOGRAPHIC MAP  
 7.5 MINUTE QUADRANGLE

**SITE LOCATION MAP**  
 BEAR VALLEY WATER DISTRICT  
 WASTEWATER TREATMENT FACILITY  
 WASTE DISCHARGE REQUIREMENTS  
 ORDER NO.

approx. scale  
 1 in. = 2,500 ft.



**SPRAY FIELD:**

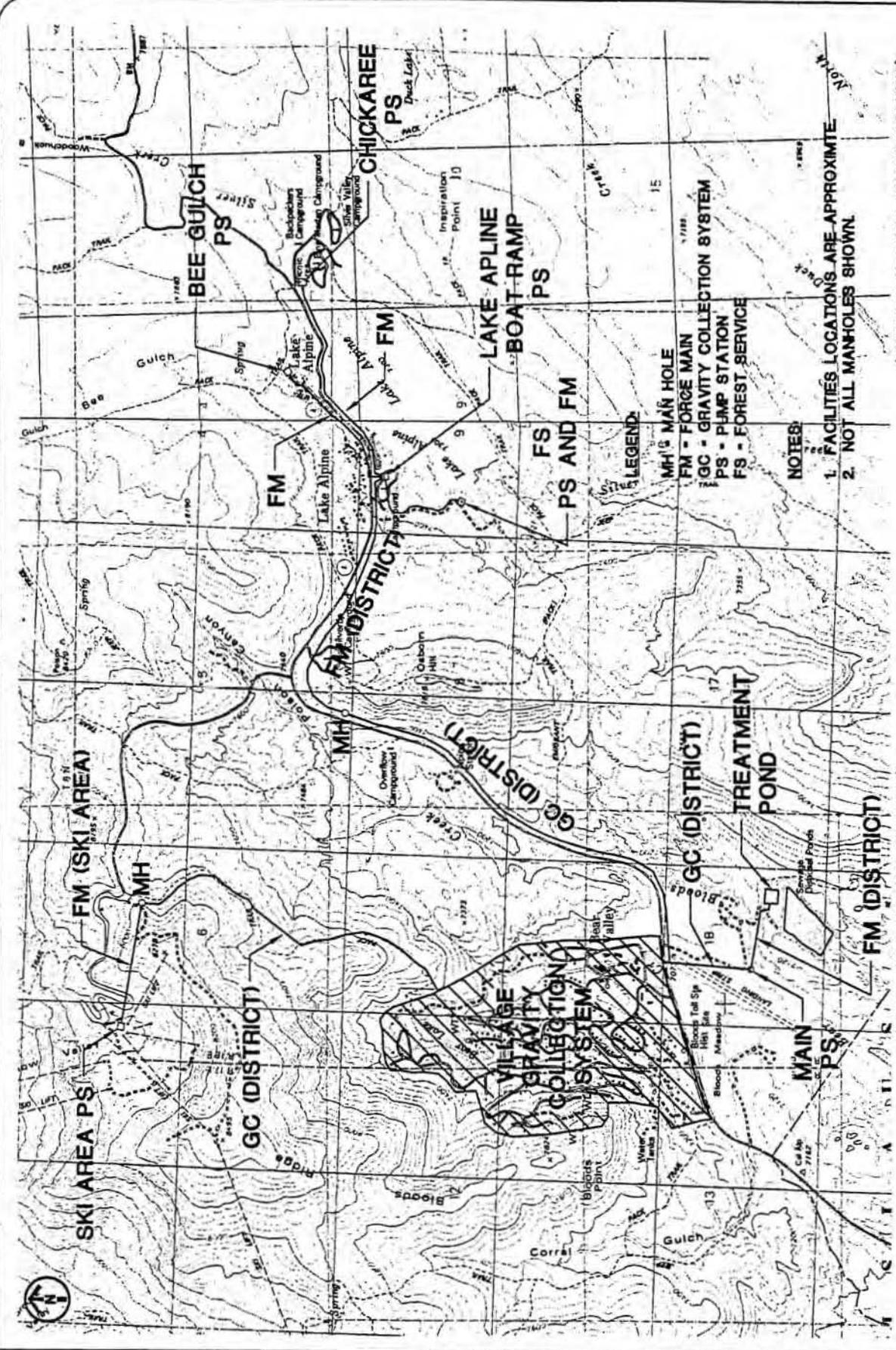
-  CURRENTLY UNDER PERMIT TO USFS AND WDR (40 ACRES)
-  PROPOSED EXPANSION AREAS (40 ACRES)
-  PROPOSED EXPANSION AREAS WITHIN BVWD 120 ACRES

**BEAR VALLEY WATER DISTRICT  
TREATMENT AND DISPOSAL  
FACILITIES MAP**

NOTE: FACILITIES ARE SHOWN APPROXIMATE. SEE USFS SPECIAL USE PERMIT AND LEASE AGREEMENT FOR MORE INFORMATION.

ATTACHMENT B

PL02000 Bear Valley\00313  
Apr 04, 2001 - 1:00pm  
PAGE 3 R.dwg



(SOURCE: USGS SPICER MEADOW QUADANGLE)

(SOURCE: USGS TAMARACK QUADANGLE)

**BEAR VALLEY WATER DISTRICT  
WASTEWATER COLLECTION SYSTEM MAP**

**LEGEND**

- MH - MAN HOLE
- FM - FORCE MAIN
- GC - GRAVITY COLLECTION SYSTEM
- PS - PUMP STATION
- FS - FOREST SERVICE

**NOTES**

1. FACILITIES LOCATIONS ARE APPROXIMATE
2. NOT ALL MANHOLES SHOWN



Winston H. Hickox  
Secretary for  
Environmental  
Protection

# California Regional Water Quality Control Board Central Valley Region

Steven T. Butler, Chair



Gray Davis  
Governor

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## ATTACHMENT D WASTE DISCHARGE REQUIREMENTS NO.

### ITEMS TO BE INCLUDED IN A MONITORING WELL INSTALLATION WORKPLAN AND A MONITORING WELL INSTALLATION REPORT OF RESULTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing the minimum listed information. Wells may be installed after staff approve the workplan. Upon installation of the monitoring wells, the Discharger shall submit a report of results, as described below. All workplans and reports must be signed by a registered geologist, certified engineering geologist, or civil engineer registered or certified by the State of California.

#### Monitoring Well Installation Workplan

##### A. General Information:

Monitoring well locations and rationale (*In areas containing fractured bedrock, selection of monitoring well locations shall be based, in part, on geological field reconnaissance activities to identify the orientation of prominent bedrock fracture sets.*)

Survey details

Equipment decontamination procedures

Health and safety plan

Topographic map showing any existing monitoring wells, proposed wells, waste handling facilities, utilities, and other major physical and man-made features.

##### B. Drilling Details: describe drilling and logging methods

##### C. Monitoring Well Design:

Casing diameter

Borehole diameter

Depth of surface seal

Well construction materials

Diagram of well construction

Type of well cap

Size of perforations and rationale

Grain size of sand pack and rationale

Thickness and position of bentonite seal and sand pack

Depth of well, length and position of perforated interval

##### D. Well Development:

Method of development to be used

Method of determining when development is complete

***California Environmental Protection Agency***

Method of development water disposal

- E. Surveying Details: discuss how each well will be surveyed to a common reference point
- F. Soil Sampling (if applicable):
  - Cuttings disposal method
  - Analyses to be run and methods
  - Sample collection and preservation method
  - Intervals at which soil samples are to be collected
  - Number of soil samples to be analyzed and rationale
  - Location of soil samples and rationale
  - QA/QC procedures
- G. Well Sampling:
  - Minimum time after development before sampling (48 hours)
  - Well purging method and amount of purge water
  - Sample collection and preservation method
  - QA/QC procedures
- H. Water Level Measurement:

The elevation reference point at each monitoring well shall be within 0.01 foot. Ground surface elevation at each monitoring well shall be within 0.1 foot. Method and time of water level measurement shall be specified.
- I. Proposed time schedule for work.

**Monitoring Well Installation Report of Results**

- A. Well Construction:
  - Number and depth of wells drilled
  - Date(s) wells drilled
  - Description of drilling and construction
  - Approximate locations relative to facility site(s)
  - A well construction diagram for each well must be included in the report, and should contain the following details:
    - Total depth drilled
    - Depth of open hole (same as total depth drilled if no caving occurs)
    - Footage of hole collapsed
    - Length of slotted casing installed
    - Depth of bottom of casing
    - Depth to top of sand pack*
    - Thickness of sand pack
    - Depth to top of bentonite seal
    - Thickness of bentonite seal
    - Thickness of concrete grout
    - Boring diameter

Monitoring Well Installation Workplan  
Monitoring Well Installation Report

- 3 -

- Casing diameter
- Casing material
- Size of perforations
- Number of bags of sand
- Well elevation at top of casing
- Depth to ground water
- Date of water level measurement
- Monitoring well number
- Date drilled
- Location

B. Well Development:

- Date(s) of development of each well
- Method of development
- Volume of water purged from well
- How well development completion was determined
- Method of effluent disposal
- Field notes from well development should be included in report.

C. Well Surveying: provide reference elevations for each well and surveyor's notes

D. Water Sampling:

- Date(s) of sampling
- How well was purged
- How many well volumes purged
- Levels of temperature, EC, and pH at stabilization
- Sample collection, handling, and preservation methods
- Sample identification
- Analytical methods used
- Laboratory analytical data sheets
- Water level elevation(s)
- Groundwater contour map

E. Soil Sampling (if applicable):

- Date(s) of sampling
- Sample collection, handling, and preservation method
- Sample identification
- Analytical methods used
- Laboratory analytical data sheets

## INFORMATION SHEET

ORDER NO. 5-01-208

BEAR VALLEY WATER DISTRICT, , UNITED STATES FOREST SERVICE, BEAR VALLEY  
SKI COMPANY, C. BRUCE & ROMA ORVIS AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

### **Background**

Bear Valley Water District (District) operates a wastewater treatment facility (WWTF) that serves the community of Bear Valley, Bear Valley Ski Resort, and the Lake Alpine Basin. The WWTF receives wastes from various domestic, public service, and commercial sources. One snowmobile maintenance facility exists in the commercial section of the Bear Valley Village area. The wastewater plant and a portion of the effluent disposal area are south of Bear Valley Village and State Route 4 on property owned by a private landowner (Orvis). The wastewater treatment plant utilizes an aerated pond treatment process which consists of a 40 acre-foot aeration pond, which is aerated for 10 to 12 hours per day. The treated wastewater is disinfected as it leaves the aerated pond, and is then pumped to the 346 acre-foot secondary effluent storage reservoir. The design treatment capacity of the wastewater plant is 500,000 gallons per day (gpd).

The wastewater collection systems within the District boundaries are owned and operated by three entities (besides individual homeowners and commercial users). The District owns and has sole responsibility for operation and maintenance of the collection system for the Bear Valley Village. The District owns and is responsible for the gravity main portion of the Bear Valley Ski Resort collection system, while the ski area laterals, pump station, and force main are owned, operated and maintained by Bear Valley Ski Company (BVSC). The Lake Alpine Basin collection system is owned and operated by the District except for a small U.S. Forest Service (USFS) pump station and force main on the west side of Lake Alpine. The gravity main, main pump station and the force main south of State Route 4 to the WWTF are owned and operated by the District.

Because BVSC, USFS, and Orvis have an ownership and/or management interest in portions of the system or the property that portions of the system are on, they are considered responsible parties and are also named as Dischargers.

### **Effluent Disposal**

The District currently discharges its treated effluent by spray irrigating on approximately 134 acres. Much of that land has features (e.g., trees, rocks, steep slopes) limiting the area that can actually be irrigated. The District has added 40 acres of land to its USFS Special Use Permit for the purpose of increasing its effluent disposal capability. Order No. 94-191, which has regulated this discharge, does not reflect current Board plans and policies or the District's increase in disposal area, and is therefore in need of update. The proposed Order includes requirements for disposal of wastewater on this disposal area.

Because of the nature of the population served by the WWTF and a recognized infiltration and inflow (I/I) problem, current monthly average daily effluent flows fluctuate greatly. For the year 2000, the monthly average daily flow for the month of October, known to be a period when few visitors are in the area and the influence from I/I is at a minimum, was 37,000 gpd. The monthly average daily influent

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ALPINE COUNTY

flow for April of the same year, when I/I is typically high, was approximately 230,000 gpd. The total reported influent flow for the year was approximately 30 million gallons.

Limited monitoring data suggests that the average nitrogen content of effluent is about 29 mg/L. However, total nitrogen content in the storage reservoir is greatly reduced by snowmelt dilution, and was recently measured at 3.1 mg/l. Because there is no harvesting or removal of the vegetation growing in the disposal area, there is minimal removal of nutrients during the disposal process. This may pose a threat to groundwater.

Due to limited effluent disposal capacity and excessive I/I, several unauthorized discharges from the storage pond to Bloods Creek have occurred since 1996. This resulted in the issuance of a Cease and Desist (C&D) Order and connection ban in January 2000. The Board will consider adoption of a revised C&D and connection ban at its 27 July 2001 meeting. In addition, the Discharger has applied for an NPDES permit to allow the discharge of wastewater to Blood's Creek during periods of high flow. The Board will consider that permit at a later date.

#### **Basin Plan, Beneficial Uses, and Regulatory Considerations**

Surface water drainage from the WWTF is to Bloods Creek, a tributary to the North Fork Stanislaus River. The *Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Fourth Edition* (Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin. Beneficial uses often determine the water quality objectives that apply to a water body. For example, waters designated as municipal and domestic supply must meet the maximum contaminant levels (MCLs) for drinking waters. The Basin Plan sets forth the applicable beneficial uses (industrial, agricultural, and domestic supply in this instance) of groundwater, procedure for application of water quality objectives, and the process for and factors to consider in allocating waste assimilation capacity.

#### **Antidegradation**

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

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

- all waste constituents to be discharged, the background quality of the uppermost layer of the uppermost aquifer;

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- the background quality of other waters that may be affected;
- the underlying hydrogeologic conditions;
- waste treatment and control measures;
- how treatment and control measures are justified as best practicable treatment and control;
- the extent the discharge will impact the quality of each aquifer; and
- the expected degradation to water quality objectives.

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

This discharge has been occurring for years. Certain waste constituents in municipal wastewater are not fully amenable to waste treatment and control, and it is reasonable to expect some impact on groundwater. Some degradation for certain constituents is consistent with maximum benefit to the people of California because the technology, energy, water recycling, and waste management advantages of municipal utility service to the State far outweigh the environmental impact damage of a community that would otherwise be reliant on numerous concentrated individual wastewater systems. Economic prosperity of local communities is of maximum benefit to the people of California, and therefore sufficient reason to accommodate increases in wastewater discharge provided terms of reasonable degradation are defined and met. The proposed Order authorizes some degradation consistent with the maximum benefit to the people of the State.

Groundwater monitoring has not been conducted at this site to establish the most appropriate groundwater limits. In addition, certain aspects of waste treatment and control practices have not been and are unlikely to be justified as representative of best practicable treatment and control (BPTC). Reasonable time is necessary to gather specific information about the WWTF and the site to make informed, appropriate, long-term decisions. This proposed Order, therefore, establishes interim receiving water limitations to assure protection of the beneficial uses of groundwater of the State pending the completion of certain tasks and provides time schedules to complete specified tasks. The Discharger is expected to identify, implement, and adhere to BPTC as individual practices are reviewed and upgraded in this process. During this period, degradation may occur from certain constituents, but can never exceed water quality objectives (or background water quality should it exceed objectives) or cause nuisance.

Water quality objectives define the least stringent limits that could apply as water quality limitations for groundwater at this location, except where background quality unaffected by the discharge already exceeds the objective. The values below reflect water quality objectives that must be met to maintain specific beneficial uses of groundwater. Unless natural background for a constituent proves higher, the

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 ALPINE COUNTY

groundwater quality limit established in the proposed Order is the most stringent of the values listed for the listed constituents.

<u>Constituent</u>	<u>Units</u>	<u>Value</u>	<u>Beneficial Use</u>	<u>Criteria or Justification</u>
Ammonia	mg/L	0.5	MUN <sup>1</sup>	Taste and Odor <sup>2</sup>
Boron	mg/l	0.63	MUN	USEPA IRIS Reference Dose
Chloride	mg/L	106	AGR <sup>3</sup>	Chloride sensitivity on certain crops irrigated via sprinklers <sup>4</sup>
		142	AGR <sup>3</sup>	Chloride sensitivity on certain crops <sup>4</sup>
		250	MUN <sup>1</sup>	Recommended Secondary MCL <sup>5</sup>
		500	MUN <sup>1</sup>	Upper Secondary MCL <sup>5</sup>
Iron	mg/L	0.3	MUN <sup>1</sup>	Secondary MCL <sup>6</sup>
Manganese	mg/L	0.05	MUN <sup>1</sup>	Secondary MCL <sup>6</sup>
Nitrate as N	mg/L	10	MUN <sup>1</sup>	Primary MCL <sup>7</sup>
Nitrite as N	mg/L	1	MUN <sup>1</sup>	Primary MCL <sup>7</sup>
Sodium	mg/L	69	AGR <sup>3</sup>	Sodium sensitivity on certain crops <sup>4</sup>
Total Coliform Organisms	MPN/100 ml	2.2	MUN <sup>1</sup>	Basin Plan
Total Dissolved Solids	mg/L	450 <sup>8</sup>	AGR <sup>3</sup>	Salt sensitivity <sup>4</sup>
		500	MUN <sup>1</sup>	Recommended Secondary MCL <sup>5</sup>
		1,000	MUN <sup>1</sup>	Recommended Upper MCL <sup>5</sup>
Total Trihalomethanes	µg/L	100	MUN <sup>1</sup>	MCL <sup>8</sup>
pH	pH Units	6.5 to 8.5	MUN <sup>1</sup>	Secondary MCL <sup>9</sup>

<sup>1</sup> Municipal and domestic supply

<sup>2</sup> Council of the European Union, On the Quality of Water Intended for Human Consumption, Council Directive 98/83/EC (3 November 1998).

<sup>3</sup> Agricultural supply

<sup>4</sup> Ayers, R. S. and D. W. Westcot, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations - Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)

<sup>5</sup> Title 22, California Code of Regulations (CCR), section 64449, Table 64449-B

<sup>6</sup> Title 22, CCR, section 64449, Table 64449-A

<sup>7</sup> Title 22, CCR, section 64431, Table 64431-A

<sup>8</sup> Title 22, CCR, section 64439

Municipal wastewater contains numerous dissolved inorganic waste constituents (i.e., salts, minerals) that together comprise total dissolved solids (TDS). Each component constituent is not individually critical to any beneficial use. Constituents that are critical are individually listed. The cumulative impact from these other constituents, along with the cumulative affect of the constituents that are individually listed can be effectively controlled using TDS as a generic indicator parameter.

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BEAR VALLEY WATER DISTRICT WWTF  
ALPINE COUNTY

Not all TDS constituents pass through the treatment process and soil profile in the same manner or rate. Chloride tends to pass rapidly through soil to groundwater. As chloride concentrations in most groundwaters in the region are much lower than in treated municipal wastewater, chloride is a useful indicator parameter for evaluating the extent to which effluent reaches groundwater. Boron is another TDS constituent that may occur in wastewater in concentrations greater than groundwater depending on the source water, to the extent residents use cleaning products containing boron, and whether any industrial dischargers utilize boron (e.g., glass production, cosmetics). Other indicator constituents for monitoring for groundwater degradation due to recharged effluent include total coliform bacteria, ammonia, total nitrogen, and Total Trihalomethanes (TTHMs), a by-product of chlorination. Dissolved iron and manganese are useful indicators to determine whether components of the WWTF with high-strength waste constituents, such as sludge handling facilities, are ineffective in containing waste. Exceptionally high TDS and nitrogen also typifies this type of release.

### **Treatment Technology and Control**

Given the character of municipal wastewater, secondary treatment technology is generally sufficient to control degradation of groundwater from decomposable organic constituents. Adding disinfection significantly reduces populations of pathogenic organisms, and reasonable soil infiltration rates and unsaturated soils can reduce them further. Neither organics nor total coliform, the indicator parameter for pathogenic organisms, should be found in groundwater in a well-designed, well-operated facility. Hence, the groundwater limit proposed for total coliform organisms is nondetect, which is less than the water quality objective.

Municipal wastewater typically contains nitrogen in concentrations greater than water quality objectives, which vary according to the form of nitrogen. Degradation by nitrogen can be controlled by an appropriate secondary treatment system (e.g., oxidation ditch), tertiary treatment for nitrogen reduction, and agronomic reuse on harvested crops. The effectiveness varies, but generally best practicable treatment and control should be able to control nitrogen degradation at a concentration well below the water quality objectives. The proposed interim limitation reflects water quality objectives.

Waste constituents that are forms of salinity pass through the treatment process and soil profile and effective control of long-term impacts relies upon effective source control and pretreatment measures. In the best of circumstances, long-term land discharge of treated municipal wastewater will degrade groundwater with salt (as measured by TDS and EC) and the individual components of salts (e.g., sodium, chloride). The proposed Order sets water quality objectives for the interim while site-specific, constituent-specific limits are developed in conjunction with a BPTC evaluation of source control and pretreatment. The next Order will likely contain effluent limits for salt components other than sodium and chloride that, if met, assure groundwater quality will be controlled to an acceptable level.

Other constituents in treated municipal waste that may pass through the treatment process and the soil profile include recalcitrant organic compounds (e.g., ethylene glycol, or antifreeze), radionuclides, and pharmaceuticals. Hazardous compounds are not usually associated with domestic wastes and when present are reduced in the discharge to inconsequential concentrations through dilution with domestic

INFORMATION SHEET - ORDER NO. 5-01-208

-6-

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE, BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WATER DISTRICT WWTF  
ALPINE COUNTY

waste, treatment, and the implementation of effective pretreatment programs. It is inappropriate to allow degradation of groundwater with such constituents, so proposed limitations are nondetect.

A discharge of wastewater that overloads soils with nutrients and organics can result in anaerobic conditions in the soil profile, which in turn creates organic acids and decreases soil pH. Under conditions of low soil pH (i.e., below 5), iron and manganese compounds in the soil can solubilize and leach into groundwater. Discharge of residual sludge to land may also lead to increases in groundwater alkalinity and hardness to concentrations that impair the water's beneficial uses and contribute to an overall increase in TDS. Overloading is preventable. Though iron and manganese limits are set at the water quality objective, groundwater pH is expected to remain the same as background.

### **Title 27**

Title 27, CCR, section 20380 et seq. ("Title 27"), contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent is acceptable.

Discharges of domestic sewage and treated effluent can be treated and controlled to a degree that will not result in unreasonable degradation of groundwater. For this reason, they have been conditionally exempted from Title 27, except for residual sludge and solid waste generated as part of the treatment process [section 20090(a) of Title 27]. The condition requires that the discharge not result in violation of any water quality objective in groundwater.

Treatment and storage facilities for sludge that are part of the WWTF are considered exempt from Title 27 under section 20090(a), under the condition that the facilities not result in a violation of any water quality objective. However, residual sludge (for the purposes of the proposed order, sludge that will not be subjected to further treatment by the WWTF) is not exempt from Title 27. Solid waste (e.g., grit and screenings) that results from treatment of domestic sewage and industrial waste also is not exempt from Title 27. This residual sludge and solid waste are subject to the provisions of Title 27.

Accordingly, the municipal discharge of effluent and the operation of treatment or storage facilities associated with a municipal wastewater treatment plant can be allowed without requiring compliance with Title 27, but only if resulting degradation of groundwater is in accordance with the Basin Plan. This means, among other things, degradation of groundwater must be consistent with Resolution 68-16 and in no case greater than water quality objectives. The conditions for sludge, solid waste, and biosolids management proposed in this Order are intended to assure this, and must all be evaluated along with other aspects of BPTC.

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE, BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WATER DISTRICT WWTF  
ALPINE COUNTY

## **Proposed Order Terms and Conditions**

### **Discharge Prohibitions and Specifications**

The proposed Order establishes an influent flow limitation of 100,000 gpd. The proposed Order's discharge specifications for BOD<sub>5</sub> and TSS are based on the Basin Plan and are carried over from the previous Order. As in the previous Order, the proposed Order requires the Discharger to disinfect effluent and prescribes maximum and monthly limits on total coliform organisms. The discharge specifications regarding dissolved oxygen and freeboard are consistent with Board policy for the prevention of nuisance conditions, and are applied to all such facilities.

In order to protect public health and safety, the proposed Order requires the Discharger to comply with many of the provisions of Title 22 and to implement best management practices with respect to effluent disposal (e.g., to dispose of effluent at reasonable rates considering the vegetative cover, soil, climate, and irrigation management plan.).

The proposed Order requires that storage, use and disposal of sludge and solid waste comply with the self-implementing federal regulations of 40 CFR 503, which are subject to enforcement by the U.S. Environmental Protection Agency not the Board, and the Statewide General Order for the Discharge of Biosolids (Water Quality Order No. 2000-10-DWQ) (or any subsequent document which replaces Order No. 2000-10-DWQ).

### **Monitoring Requirements**

Section 13267 of the CWC authorizes the Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment civil administrative liability where appropriate.

The proposed Order increases the previous Order's influent and effluent monitoring requirements, and adds wastewater pond, disposal area, and groundwater monitoring requirements. To determine the efficiency of the Discharger's operation, the Discharger is required to monitor influent monthly for BOD and TSS. In order to adequately characterize its wastewater effluent, the Discharger is required to monitor weekly for settleable solids, BOD, and coliform; monthly for TDS, nitrate-nitrogen, and ammonia. To ensure that disposal ponds do not create nuisance conditions, the Discharger is required to monitor freeboard available, dissolved oxygen content and pH levels weekly.

The Title 27 zero leakage protection strategy relies heavily on extensive groundwater monitoring to increase a discharger's awareness of, and accountability for, compliance with the prescriptive and performance standards. With a high volume, concentrated, uncontained discharge to land, monitoring takes on even greater importance. The proposed Order includes monitoring of applied waste quality, application rates, and groundwater.

BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE, BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS AND JAMES & MARIANNE ORVIS  
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ALPINE COUNTY

Title 27 regulations pertaining to groundwater monitoring and the detection and characterization of waste constituents in groundwater have been in effect and successfully implemented for many years. No regulation currently specifies similar criteria more suitable for a situation where extensive infiltration into groundwater occurs. However, where, as here, such infiltration occurs, it is appropriate that the Title 27 groundwater monitoring procedures be extended and applied on a case-by-case basis under Water Code section 13267.

The proposed Order requires installation of an effective monitoring network that includes monitoring points represented by wells forming a vertical line that extends from the soil surface into the uppermost layer of water in the uppermost aquifer. One or more wells will monitor the quality of groundwater unaffected by the discharge and serve as 'background.' Other monitoring wells will be for determining compliance with the Groundwater Limitations.

The Discharger must monitor groundwater for constituents present in the discharge and capable of reaching groundwater and violating groundwater limitations if its treatment and control, and any dependency of the process on sustained environmental attenuation, proves inadequate. As some groundwater limitations are based on background water quality, it is essential that the Discharger install wells in a location that can provide groundwater quality representative of the discharge area but unaffected by both the discharge and other waste sources. The proposed Order requires the Discharger to install such well(s) and characterize background water quality over a one-year period of quarterly groundwater sampling events. For each constituent where no increase in concentration is authorized over background, the Discharger must, as part of each monitoring event, compare concentrations of constituents found in each monitoring well to the background concentration or to prescribed numerical limitations to determine compliance.

### Reopener

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

JRM:7/27/01



# California Regional Water Quality Control Board Central Valley Region



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20 June 2002

Mr. William Voreyer, District Manager  
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**REVISED MONITORING AND REPORTING PROGRAM NO. 5-01-208, BEAR VALLEY WATER DISTRICT, ALPINE COUNTY**

In a letter transmitted to you on 1 May 2002, staff proposed revising Monitoring and Reporting Program (MRP) No. 5-01-208 in order to track ongoing implementation of your *Land Disposal Maximization Plan*. Staff included the draft version of the proposed revised MRP and requested comments by 30 May 2002. We received no comments regarding the proposed MRP. Therefore, as of 1 July 2002, this MRP is effective. Enclosed please find a copy of the revised MRP.

If you have any questions, please contact Jim Martin at (916) 255-3385.

WENDY WYELS, Chief  
Waste Discharge to Land Unit  
San Joaquin River Watershed

Enclosure

- cc: Ben del Villar, United States Forest Service, Sonora
- Joseph Spano, Department of Health Services, Stockton
- James Goodloe, Alpine County Environmental Health Department, Markleeville
- C. Bruce Orvis, Bear Valley
- Jeanette Thomas, Stockton East Water District, Stockton
- Neil Calwell, ECO:LOGIC Engineering, Roseville
- Central Sierra Environmental Resource Center, Twain Harte

**California Environmental Protection Agency**



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM NO. 5-01-208

FOR  
BEAR VALLEY WATER DISTRICT, UNITED STATES FOREST SERVICE, BEAR VALLEY SKI  
COMPANY, C. BRUCE & ROMA ORVIS AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring domestic wastewater, treated effluent, wastewater ponds, the effluent disposal area, surface water, and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. Regional Board staff shall approve specific sample station locations prior to implementation of sampling activities.

Bear Valley Water District shall be responsible for implementation of this program.

All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

**INFLUENT MONITORING**

Influent samples shall be collected at the inlet of the headworks and at approximately the same time as effluent samples. Influent samples shall be representative of the influent for the period sampled. Influent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Daily Flow	mgd	Meter	Continuously	Monthly
Monthly Average Daily Flow	mgd	Calculated	Monthly	Monthly
BOD <sub>5</sub> <sup>1</sup>	mg/l	Grab	Monthly	Monthly
Total Suspended Solids	mg/l	Grab	Monthly	Monthly

<sup>1</sup> Five-day, 20° Celsius biochemical oxygen demand

**EFFLUENT MONITORING**

Effluent samples shall be collected before entering the effluent storage pond and shall be representative of the volume and nature of the discharge. Effluent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
BOD	mg/l	Grab	Bi-weekly <sup>1</sup>	Monthly
Total Suspended Solids	mg/l	Grab	Bi-weekly <sup>1</sup>	Monthly
Total Coliform Organisms <sup>1</sup>	MPN <sup>2</sup> /100 ml	Grab	Bi-weekly <sup>1</sup>	Monthly
Settleable Solids	ml/l	Grab	Monthly	Monthly
Total Dissolved Solids	mg/l	Grab	Monthly	Monthly
Nitrate-Nitrogen	mg/l	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/l	Grab	Monthly	Monthly

- <sup>1</sup> Once every two weeks  
<sup>2</sup> Method No. 9221E, using a minimum of three dilutions or 15 tubes  
<sup>3</sup> Most Probable Number

### POND MONITORING

The treatment pond and effluent storage pond shall each be sampled for the parameters specified below:

<u>Constituent/Parameter</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Freeboard	0.1 Feet	Measurement	Weekly	Monthly
Dissolved Oxygen (DO) <sup>1</sup>	mg/l	Grab	Weekly	Monthly
pH	pH units	Grab	Weekly	Monthly
Total Nitrogen <sup>2</sup>	mg/l	Grab	Monthly	Monthly
Total Dissolved Solids <sup>2</sup>	mg/l	Grab	Monthly	Monthly
General Minerals <sup>3</sup>	mg/l	Grab	Annually <sup>3</sup>	Annually <sup>3</sup>

- <sup>1</sup> Samples shall be collected at a depth of one foot from each pond in use, opposite the inlet. Samples shall be collected between 0700 and 0900 hours. If DO results for any pond in use indicate noncompliance with the effluent limit, the Discharger shall implement corrective measures and monitor said pond daily until its DO stabilizes above 1.0 mg/L.  
<sup>2</sup> Effluent storage reservoir only, and only in months when application to the disposal area occurs.  
<sup>3</sup> Minerals to be analyzed: boron, chloride, iron, manganese, and sodium

### DISPOSAL AREA MONITORING

Monitoring of the disposal area shall be conducted daily (during operation) and the results shall be included in the monthly monitoring report. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. Effluent shall also be monitored to ascertain loading rates at the disposal area. Monitoring of the effluent and the disposal fields shall include the following:

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<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	Gallons	Continuous	Daily	Monthly
Rainfall	Inches	Measurement	Daily	Monthly
Acreage Applied <sup>1</sup>	Acres	Calculated	Daily	Monthly
Application Rate <sup>2</sup>	Gal/acre/day	Calculated	Daily	Monthly
Total Nitrogen <sup>2</sup>	lbs/month	Calculated	Monthly	Monthly
Total Dissolved Solids <sup>2</sup>	lbs/month	Calculated	Monthly	Monthly

<sup>1</sup> Disposal fields shall be identified

<sup>2</sup> For each disposal field

### GROUNDWATER MONITORING

Prior to construction and/or sampling of any groundwater monitoring wells, the District shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the MRP and shall be sampled and analyzed according to the schedule below.

Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged at least three well volumes until temperature, pH and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Samples shall be collected using standard EPA methods. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling and Reporting Frequency</u>
Groundwater Elevation	Feet	Measurement	3 times per year <sup>1</sup>
Total Dissolved Solids	mg/l	Grab	3 times per year <sup>1</sup>
Nitrate-nitrogen	mg/l	Grab	3 times per year <sup>1</sup>
pH	pH units	Grab	3 times per year <sup>1</sup>
Total Coliform Organisms <sup>2</sup>	MPN/100 ml	Grab	3 times per year <sup>1</sup>
Ammonia	mg/l	Grab	3 times per year <sup>1</sup>
Total Kjeldahl Nitrogen	mg/l	Grab	3 times per year <sup>1</sup>
General Minerals <sup>3</sup>	mg/l	Grab	1 time per year

<sup>1</sup> Immediately after spring snowmelt, in the middle of summer, and in the fall (shortly before wells become inaccessible due to snow cover.)

<sup>2</sup> Method No. 9221E, using a minimum of three dilutions or 15 tubes

<sup>3</sup> Minerals to be analyzed: boron, chloride, iron, manganese, and sodium. Samples to be collected during the fall.

### WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the water supply serving Bear Valley can be obtained. Water supply monitoring shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Sampling and Reporting Frequency</u>
Total Dissolved Solids	mg/l	Annually <sup>1</sup>
<u>General Minerals<sup>2</sup></u>	mg/l	Annually <sup>1</sup>

<sup>1</sup> Concurrent with annual pond samples and fall groundwater samples.  
<sup>2</sup> Minerals to be analyzed: boron, chloride, iron, manganese, and sodium.

### SLUDGE MONITORING

A composite sample of any sludge removed from the aeration pond shall be collected in accordance with the EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for the following metals:

Cadmium	Copper	Nickel
Chromium	Lead	Zinc

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

### REPORTING

In reporting monitoring data, the District shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Regional Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Engineer or Geologist and signed by the registered professional.

**A. Monthly Monitoring Reports**

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly reports shall be submitted to the Regional Board on the 1<sup>st</sup> day of the second month following sampling (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. Results of influent, effluent, pond, and disposal area monitoring;
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
3. If requested by staff, copies of laboratory analytical report(s).

**B. Groundwater Monitoring Reports**

The District shall establish a sampling schedule for groundwater monitoring such that samples are obtained during the spring, summer, and fall. Groundwater monitoring reports shall be submitted to the Board by the 1<sup>st</sup> day of February, July, and September of each year. The Groundwater Report shall include the following:

1. Results of groundwater monitoring;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater, parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);

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BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

5. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
6. Summary data tables of historical and current water table elevations and analytical results;
7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum;
8. Copies of laboratory analytical report(s) for groundwater monitoring.

**C. Annual Report**

An Annual Report shall be submitted to the Regional Board by 1 February each year. In addition to the data normally presented in a monthly report, the Annual Report shall include the following:

1. The contents of the regular groundwater monitoring report for the last sampling event of the year;
2. If requested by staff, tabular and graphical summaries of all data collected during the year;
3. An evaluation of the groundwater quality beneath the wastewater treatment facility;
4. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;
5. A summary of water conservation activities conducted during the year;
6. A summary of Inflow/Infiltration (I/I) reduction activities conducted during the year;
7. A hydraulic capacity evaluation, which includes flow into and out of the system during the past year, projected flow into and out of the system for upcoming year, a comparison of water levels in the storage reservoir on 1 October of current year vs. water levels in the storage reservoir on 1 October of previous ten years, and a projected water balance for upcoming year, based on 100-year annual precipitation.
8. A summary of activity conducted during the past year related to the purchase of, or permits, leases, contracts, or agreements for wastewater application lands, and a discussion of the results of that activity.

BEAR VALLEY WATER DISTRICT, U.S. FOREST SERVICE,  
BEAR VALLEY SKI COMPANY, C. BRUCE & ROMA ORVIS, AND JAMES & MARIANNE ORVIS  
BEAR VALLEY WASTEWATER TREATMENT FACILITY  
ALPINE COUNTY

9. A summary of information on the disposal of sludge and/or solid waste;
10. If biosolids were disposed onsite, then the annual report shall include information as contained in the Statewide General Order for the Discharge of Biosolids (Water Quality Order No. 2000-10-DWQ) (or any subsequent document which replaces Order No. 2000-10-DWQ); and
11. A discussion of whether the Discharger anticipates removing sludge and/or solid waste in the coming year, and if so, the anticipated schedule for cleaning, drying, and disposal.
12. The results from annual monitoring of the ponds and water supply.
13. The results from any sludge monitoring.

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

Ordered by:

Thomas R Pinkos  
THOMAS R. PINKOS, Acting Executive Officer

20 June 02  
(Date)