CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER NO. R6T-2003-0032
WDID NO. 6A090033000

UPDATED WASTE DISCHARGE REQUIREMENTS

FOR

HEAVENLY SKI RESORT

El Dorado and Alpine Counties

The California Regional Water Quality Control Board, Lahontan Region (Regional Board) finds:

1. Dischargers

The Heavenly Valley Limited Partnership (Heavenly), a subsidiary acquired by Vail Resorts, Inc. in 2002, operates the Heavenly Ski Resort and support facilities on lands owned or administered by the United States Department of Agriculture Forest Service-Lake Tahoe Basin Management Unit (LTBMU) and Heavenly. Nearly all of the ski area is located on Federal land administered by LTBMU. Heavenly Ski Resort operates under a Special Use Permit issued by LTBMU in 2002, and as it may be amended from time to time. Heavenly owns the California Base lodge and parking lots, a small portion of the adjacent ski lifts and slopes, and the Gondola Base station. The City of South Lake Tahoe (CSLT) owns and maintains a water quality treatment site originally constructed by Heavenly to treat runoff from the California Base parking lots. The CSLT owns and maintains the roads providing access to the California Base, except for a portion of Wildwood Avenue owned by Heavenly. For the purpose of this Order, Heavenly and the USDA Forest Service-Lake Tahoe Basin Management Unit (LTBMU) are the "Dischargers".

2. Facility Location

Heavenly Ski Resort is located in the States of California and Nevada on the south shore of Lake Tahoe. More than 90% of the California portion of the ski area lies within El Dorado County; the remaining portion is in Alpine County. The Gondola Base Station lies within the CSLT. The California Base lodge and parking lot, and the portion of Wildwood Avenue owned by Heavenly, lie within El Dorado County, but outside of the city limits. The Facility is located in the South Tahoe Hydrologic Area of the Lake Tahoe Hydrologic Unit and the Woodfords Hydrologic Area of the West Fork Carson River Hydrologic Unit in Section 1, T.12N., R.18E., Sections 6 and 7, T.12N., R. 19E. and Sections 27, 35, and 36, T.13N., R. 18E., MDB&M (USGS South Lake Tahoe 7.5 minute quadrangle map), as shown in Attachment "A", which is made a part of this Order. The California Base is located south of Saddle Road, between Wildwood Avenue and Keller Road. The Gondola Base Station is south of Highway 50 approximately 500 feet from the California-Nevada state line. The off-site Stream Environment Zone (SEZ) treatment area is just south of Tamarack Avenue near Blackwood Road. Heavenly deeded the SEZ treatment site, along with the obligation to maintain percolation improvements in perpetuity, to CSLT in 1994. The "Facility" covered by this Order is defined in Finding 7 of this Order below.

3. History of Previous Regulation by the Regional Board

The Regional Board previously adopted Board Order No. 6-70-19 for Heavenly Ski Area on August 13, 1970, Board Order No. 6-81-66 for Heavenly Valley Parking, Lodge and Base of Lifts Area on September 17, 1981. Board Order No. 6-88-112 for the Heavenly Valley Ski Area, Parking Lots and Lodge on July 14, 1998 provided Updated Waste Discharge Requirements for discharge of surface water from the ski area and storm water and waste earthen materials for the Parking, Lodge and Base of Lifts Area. The Regional Board issued revised waste discharge requirements for the Heavenly Valley Ski Area (now Heavenly Ski Resort) under Board Order No. 6-91-36, adopted on May 9, 1991. Board Order No. 6-91-36 allowed partial treatment of runoff from the parking lot onsite, and with additional treatment approximately 4000 feet downstream within a SEZ on the stream that receives parking lot runoff.

Specific Heavenly Ski Resort construction projects, such as the Gondola project, have proceeded under General Waste Discharge Requirements (Board Order No. 6-91-31) or National Pollution Discharge Elimination System (NPDES) General Permits (Board Order No. 6-00-03). The Heavenly Valley Creek Total Maximum Daily Load (TMDL) Basin Plan Amendment went into effect on September 30, 2002. The TMDL includes an implementation plan and is designed to ensure attainment of all sediment-related water quality standards in Heavenly Valley Creek.

4. Heavenly Ski Resort Master Plan

A Heavenly Ski Resort Master Plan (Master Plan), prepared pursuant to the Tahoe Regional Planning Agency (TRPA) Code of Ordinances was adopted by the TRPA Governing Board and approved by the LTBMU in 1996. The Master Plan is a twenty-year plan that guides improvements, expansions, and operations of summer and winter uses and support facilities, including erosion control, tree removal, ski run development and maintenance, revegetation, and other practices that protect water quality.

The adopted Master Plan and Master Plan Final EIR/EIS includes a Mitigation and Monitoring Plan with details on implementing and monitoring 61 mitigation measures, as well as a Collection/Monitoring Agreement enacted by Heavenly Ski Resort and LTBMU for water quality, watershed condition and trend monitoring. The Master Plan allows annual reviews and permits the Collection/Monitoring Agreement to be updated as necessary.

5. Lahontan Basin Plan

The Regional Board adopted the *Water Quality Control Plan for the Lahontan Region* (Basin Plan) on March 31, 1995. This Order implements the Basin Plan, as amended.

6. Reasons for Action

The Regional Board periodically reviews and updates waste discharge requirements in the region to ensure that permits remain consistent with the *Water Quality Control Plan for the Lahontan Region* (Basin Plan) and state and federal water pollution laws and regulations. The Regional Board is updating waste discharge requirements to acknowledge new facilities, uses, and programs, such as the Total Daily Maximum Load (TMDL) for Heavenly Valley Creek, and the Heavenly Ski Resort Master Plan.

7. Description of Facility and Discharge

The Heavenly Ski Resort includes lifts, slopes, and terrain features for downhill skiing, snowboarding, sledding and tubing, base and on-mountain lodges, restaurants and maintenance buildings, snow making ponds and equipment, hiking, cross-country ski and snowshoe trails, parking areas, water quality control facilities and a portion of Wildwood Avenue owned by Heavenly closest to the California Base. Existing facilities, as of December 2002 are shown on Attachment "A", which is made a part of this Order. For the purposes of this Order, the California portion of the Heavenly Ski Resort is the "Facility" from which the discharge occurs. The boundaries of the Facility are shown on Attachment "A" which is made a part of this Order. The Facility discharges storm water containing sediment and other pollutants. (The "Facility" as defined under this Order includes the Gondola Base Station located in Heavenly Village, a multiple-use development approximately one mile north of the any other Heavenly Ski Resort improvements. Storm water discharge from the Gondola Base Station is not subject to this order.)

Heavenly applies deicers and abrasives to CSLT roads providing access to the California Base, including, but not limited to Wildwood Avenue, Needle Peak Road, and Ski Run Boulevard. These CSLT roads are not part of the "Facility" under this Order, but are areas from which storm water discharge is regulated under Board Order No.6-00-82, the Municipal NPDES Storm Water Permit issued to CSLT. Within California Heavenly's Forest Service Special Use Permit Area consists of 6,210 acres of land, including approximately 300 acres of private land that is owned by Heavenly. The developed ski area covers approximately 1600 acres within Heavenly's Forest Service Special Use Permit Area in California. The approximately 2,200 acres defined as the "Facility" under this order consists of the portions of the watersheds owned by Heavenly or LTBMU which encompass the developed ski area and conform with watershed boundaries in the Master Plan Final EIR/EIS.

Storm water and snowmelt runoff from the Facility is generated and discharged into several watersheds draining to Lake Tahoe and one watershed draining into Nevada. Approximately 370 acres within the Heavenly special use permit boundary are in Alpine County and drain to the West Fork Carson River, and the remainder are in El Dorado County watersheds draining to Lake Tahoe.

Several chemicals are used in the operations of the facility, including diesel fuel, lube oils, hydraulic oil, gasoline, anti-freeze, paints, solvents, propane, cleansers, snow conditioning chemicals (salt), deicers, and roadway abrasives. Explosives are used for snow safety and avalanche control. Fertilizers and/or other soil amendments are used on revegetation and restoration sites. Storm water and snow melt runoff, containing sediment and other pollutants associated with road abrasives and deicers, are discharged below the California Base area after partial treatment in storm water vaults. Sewage generated at the Facility is discharged to the South Tahoe Public Utility District sewer system.

8. Potential Pollutants

Sediment, dissolved solids (salts), waste earthen materials, deicing salts, abrasives, nutrients (nitrogen and phosphorus), fertilizers, food service wastes, sewage, and automobile and equipment-related waste products (petroleum hydrocarbons, metals) are the potential pollutants of concern at the Facility. Potential pollutant discharges arise

from hill-slope development and erosion, snow-making activities, road sanding, road and hillslope failure, snow conditioning, and automobile and equipment use on the ski area, access roads or parking lots.

9. Site Geology

The Heavenly Ski Resort is situated along the Carson Range, southeast of Lake Tahoe. This section of the Carson Range is formed from a granitic batholith. Soils are derived from deposits of decomposed granite rock – mostly quartz monzonite and granodiorite. The granitic rock at Heavenly Ski Resort ranges from fresh outcrops and exposures to very decomposed granitic grus. The decomposed materials form residual soils on slopes and colluvial soils from eroded materials further downslope.

Soils on the California side of Facility are generally shallow to moderately deep over grus and are often identified in complexes with rock outcrops. Coarse-textured soils are generally highly permeable, with low to very low available water holding capacity, and with surface layers that do not absorb water readily. Much of steep terrain has a thin mantle of young soils that occur on actively eroding slopes. If these soils are disturbed, runoff is rapid and erosion hazard is high. Revegetation is difficult, particularly at high elevations. Rock outcrop areas have rapid runoff but only a slight erosion hazard. Small areas of recent alluvium adjacent to streams and meadows on level to gently sloping slopes support riparian vegetation and have a seasonal high water table at a depth of 12 to 24 inches. Springs are commonly found near the base of steep granitic slopes in locations such as the California Base area. Development of the California Base area involved more than 10 acres of cut and fill within these wet areas to create level sites for facilities and parking lots.

10. Site Hydrology

Heavenly Valley Creek drains the largest watershed within the LTBMU permit boundary on the California side of the Heavenly Ski Resort. Approximately 57 acres in the northeastern upper section of this watershed are in Nevada. Heavenly Valley Creek is a tributary to Trout Creek, which is a tributary to the Upper Truckee River. Within the LTBMU permit boundary, the watershed of Heavenly Valley Creek (designated as CA-1 in the Master Plan) is approximately 2.5 mi^2 in area with approximately 3400 feet of vertical relief. Nearly all of the upper ski runs, lifts, and facilities of the California side of the ski resort are within the upper watershed of Heavenly Valley Creek. Heavenly Valley Creek is generally a perennial stream with peak flows from May-July, but occasionally the stream has been dry.

Monument Peak at 10053 feet is the highest point in the Heavenly Valley Creek watershed. The watershed contains the largest meadow at the Facility (Sky Meadows) at approximately 8600 feet elevation. Below Sky Meadows, Heavenly Valley Creek flows into a 22 –28 acre-feet capacity reservoir (Sky Meadow Reservoir) used for storage for snowmaking and irrigation. Approximately 1300 feet below the reservoir dam (California Dam), tributaries join the main stream, and Heavenly Valley Creek flows southwest for approximately 1200 feet before exiting the developed portion of the ski resort at approximately 7900 feet elevation. Heavenly Valley Creek drops another 1300 feet in the next 1½ miles before exiting the LTBMU permit and Facility boundary at approximately 6600 feet elevation**.**

The California portion of the ski area also drains into several smaller watersheds draining to Lake Tahoe, and to two watersheds draining to Nevada to tributaries of the West Fork

Carson River. The CA-4 watershed (approximately 136 acres) contains the headwaters of "Bijou Creek". One access road/ski run crosses this watershed. The CA-6 watershed (approximately 412 acres) includes steep ski slopes (the "Face") and the California Base area, which consists of the California Lodge, maintenance facilities, and parking lots, mostly on fill and cut slopes within an SEZ. "Bijou Park Creek" surfaces northwest of the California Base area.

Previous permits and Master Plan documents have referred to the stream in the CA-6 watershed as either "Blackwood Creek" or "Bijou Creek". To avoid confusion with Blackwood Creek on the west shore of Lake Tahoe or Bijou Creek, the following names used in TRPA Lake Tahoe Basin Priority Watershed maps will be used in this permit.

The name "Bijou Park" will be used for the watershed which includes the California Base area and is identified as watershed CA6 in the TRPA Master Plan and LTBMU documents. "Bijou Park Creek" will be used for the perennial stream in the Bijou Park watershed surfacing near the intersection of Wildwood Avenue and Saddle Road below the California Base Area. "Wildwood-Keller Creek", an intermittent stream east of Bijou Park Creek and surfacing north of Saddle Road, also receives some runoff from the Facility. Both Bijou Park Creek and Wildwood-Keller Creek discharge to Lake Tahoe at the Ski Run Marina. The "Bijou Creek" watershed, identified as watershed CA4 in Master Plan and LTBMU documents, also originates within the Facility, and is the watershed immediately west of Bijou Park. "Bijou Creek" is the largest stream within the Bijou Creek watershed, and drains into Lake Tahoe approximately 2000 feet west of Bijou Park Creek.

The 284-acre CA-7 watershed, a portion of which is in Nevada, drains most of the area below the gondola, and discharges into the casino core area on the Nevada side of the state line. Nearly all of the 370 acres of California land draining towards the West Fork Carson River in Nevada is in the Mott Canyon watershed (NV-1), while a few acres drain into the South Fork Daggett Creek (NV-2+5) watershed.

11. Receiving Waters

Most of the Facility discharges to ground and surface waters of the Lake Tahoe Hydrologic Unit (Department of Water Resources Hydrologic Unit 634.00). Runoff from the upper ski runs at the Facility in El Dorado County discharges to Heavenly Valley Creek, a tributary of Trout Creek, the Upper Truckee River, and Lake Tahoe. Runoff from the rest of the Facility discharges into the Bijou Creek and Bijou Park watersheds, into minor wetlands, or into minor surface waters that are also tributaries to Lake Tahoe.

The California Base parking lot discharges to an unnamed stream (Bijou Park Creek) that crosses Ski Run Boulevard and flows parallel to Blackwood Road before discharging to Lake Tahoe at the Ski Run Marina.

Lake Tahoe has been identified as an Outstanding National Resource Water under provisions of the Clean Water Act. Heavenly Valley Creek and Lake Tahoe have been placed on the Clean Water Act Section 303(d) List. Surface waters placed on this list have been identified as being water quality impaired. Heavenly Valley Creek has been placed on the list due to excessive sediment loading, and Lake Tahoe has been placed on the list due to excessive nutrient and sediment loading. The State Board proposed additional listings for Heavenly Valley Creek within and below the facility for impairment for phosphorus and chloride. The new listings, approved by the State Board in February 2003, await EPA approval.

Approximately 370 acres of the Facility in Alpine County discharge to ground and surface waters in the Woodfords Hydrologic Area which is part of the West Fork Carson River Hydrologic Unit (Department of Water Resources Hydrologic Unit 633.00).

12. California Base Area Runoff

A. Characteristics of Runoff

Surface runoff and seepage from the adjacent ski slopes, partially-treated discharge from the parking lot, untreated runoff from the Heavenly-owned access road and flow from iron-rich springs near the base of the parking lot fill slopes commingle and leave Heavenly property at the intersection of Saddle Road and Wildwood Avenue. Additional untreated parking lot runoff reaches Saddle Road as meltwater from fill slopes where Heavenly piles snow cleared from the parking lot. The discharge from the California Base area enters the City of South Lake Tahoe (CSLT) at Saddle Road.

Crossing under Saddle Road, the runoff combines with seepage from small springs north of Saddle Road to form the headwaters of the Bijou Park Creek, the stream flowing northwest towards the restored SEZ site on Tamarack Avenue near Blackwood Road. Heavenly applies deicers and abrasives on its parking lot and Heavenly-owned access road just above the CSLT city limits. Heavenly also applies deicers and abrasives for CSLT on the main CSLT roads leading to the California Base area.

During the three-year period between 2000 and 2003, Heavenly used an average of 68 tons of salt and 134 tons of cinders per year. Heavenly estimated approximately 20% of the salt and cinders were applied to the parking area and walkways at the California Base area and 80% were applied to the CSLT streets leading to the base area. During the 2001-2 season, Heavenly applied 192 tons of cinders at the California Base Area and on CSLT streets which also drain to Bijou Park Creek, while during the same period CSLT applied 700 tons of cinders throughout the City of South Lake Tahoe.

Since 1995, LTBMU, Heavenly, or Regional Board staff have observed several sudden, short-term increases in flow and turbidity within the parking lot conveyance systems discharging to Bijou Park Creek. LTBMU reported one of these events in their Heavenly Valley Ski Resort Environmental Monitoring Program Annual Report for Water Year 2002. Over a five-minute period during dry weather on April 4, 2002, discharge at the stream monitoring station below the parking lot increased from 0.36 cfs to 0.81 cfs. The increased discharge was accompanied by elevated turbidity (325 ntu) and suspended sediment (708 mg/l) measurements. LTBMU and Heavenly report that reasons for the release have been investigated, but have not yet been determined. Increased monitoring is needed to better assess the frequency and magnitude of these unexplained discharges and to determine whether these discharges are allowed under this permit.

B. Runoff Treatment

In previous permits, the Regional Board did not require on-site infiltration for runoff from the approximately 14-acre California Base Lodge, parking lot, and

access road from the city limits into the parking lot. On-site infiltration was not required because high water tables limited the potential for infiltration and increased risks of groundwater contamination. In the past the California Base Area was preliminarily mapped as jurisdictional wetlands by the Army Corps of Engineers; however, most of the area has been paved for over 40 years and the pavement does not provide any wetland functions.

As permitted under Board Order No. 6-91-36, Heavenly constructed a total of six (6) underground vaults ranging from 4000-12,000 gallons in size in the 14.0 acre parking area, and purchased a one acre developed parcel located in the Bijou Park Creek SEZ near Tamarack Avenue, where Heavenly removed the existing log-splitting operation and restored the parcel to a functioning SEZ, which has subsequently provided treatment to runoff from the California Base area and other areas within CSLT. The SEZ restoration project downstream was designed to improve water quality by spreading, filtering, and vegetative uptake of nutrients. In 1994, Heavenly deeded the one-acre SEZ treatment site, along with the obligation to maintain percolation improvements in perpetuity, to CSLT. Heavenly's current maintenance program includes parking lot sweeping and annual cleaning of and proper disposal of wastes from the storm water vaults and other storm water BMP's. CSLT is responsible for maintenance of the one-acre SEZ at Tamarack Avenue.

In 1991, prior to construction of these improvements, Heavenly submitted an assessment of the anticipated water quality benefits which the proposed on-site vault treatment and off-site SEZ treatment plan would provide. In this 1991 report, Heavenly estimated that parking lot vaults could remove 20% of sediment and 10% of total nitrogen and total phosphorus loads generated on the parking lot. Heavenly estimated that the restored off-site SEZ would then remove all of the remaining total nitrogen load and an additional 60% of the total phosphorus discharged from the California Base area.

The 1991 report estimated potential nitrogen and phosphorus removal by vegetation at the off-site SEZ restoration area by using literature values of nutrient uptake by forage crops which typically would be harvested or consumed. Though revegetated, the SEZ restoration site has not been managed for annual crop production. In the previous Waste Discharge Requirements (Board Order 6-91-31) Findings 4 stated that the restored stream environment zone will be capable of removing a mass loading of pollutants greater than that generated by the parking lots of the facility. The 1991 evaluation, which estimated a suspended sediment load of 4 tons/year from the parking lots, did not account for suspended sediment and associated nutrients originating from Heavenly's use of abrasives and deicers, such as the 192 tons of cinders that was applied by Heavenly in 2001-2002. Including Heavenly's use of cinders in estimating sediment and nutrient loads significantly reduces the estimates of the percent removal for these constituents attributable to the parking lot vaults and off-site SEZ treatment BMPs.

Although the on-site/off-site treatment system was designed to provide a net water quality benefit, the April 1996 Master Plan Final EIR/EIS acknowledged that construction of additional on-site treatment facilities is feasible and could result in additional on-site treatment of storm water. Section II.D of this Order requires additional analysis of the system in the form of a technical assessment, implementation of interim operations and maintenance improvements and

development and implementation of a California Base Area Retrofit Plan, to ensure full protection of beneficial uses of Bijou Park Creek and Lake Tahoe. The analysis and plan should consider performance monitoring of the existing vaults, conveyance of clean surface and groundwater flows, and structural improvements such as retrofit the existing on-site vaults and additional off-site treatments via detention basins and wetland treatment. Existing operation and maintenance related to vault cleaning, street sweeping and cinder/deicers should be reviewed and updated. The California Base Area Retrofit Plan will include a proposed construction schedule and identify any required modification of the location of treatment and point of discharge.

13. Effluent Limits for Bijou Park Drainage from California Base Area

Under the Basin Plan, the Regional Board applies the Basin Plan's numeric storm water effluent limitations (Table 5.6-1 in the Basin Plan) on a site- or project-specific basis in response to identified erosion or runoff problems. *See* Basin Plan at 5.6-1. In Board Order No. 6-91-36, numeric effluent limitations were not applied to surface flows discharging to the "Blackwood Creek drainage", which this permit refers to as Bijou Park Creek. In addition, the final discharge from the off-site SEZ treatment site was comprised of commingled stormwater drainage from a number of other sources downgradient of the Facility.

This Order provides a Schedule of Compliance that will apply effluent limitations for discharges from the California Base area to the Bijou Park Creek drainage according to a specified schedule and other requirements, including a detailed assessment and facility plan. Since the previous Heavenly Waste Discharge Requirements (Board Order No. 6-91-36) permitted Heavenly to utilize the downstream restored SEZ site for partial treatment of Heavenly runoff that is commingled with CSLT runoff, discharges from the California Base Area will initially be considered discharges to land treatment. By December 31, 2004, discharges from the California Base area to any offsite CSLT drainage must, at a minimum, meet discharge to land effluent limits. By October 15, 2006, Heavenly is required to have implemented improvements or other measures pursuant to its assessment and retrofit plan. By November 30, 2008, all discharges from the California Base area to surface water must meet discharge to surface water effluent limitations.

Pursuant to Section I.A.3 of this Order, narrative effluent limitations derived from the Basin Plan will be applied to all discharges covered by this permit. Additional requirements for discharges of surface flows to surface waters which apply to Bijou Park Creek are described in the Receiving Water Limitations (I.B.E and I.C.1), Best Management Practices (I.D), and General Requirements and Prohibitions (I.E) sections of the Discharge Specifications of this permit.

CSLT must comply with the provisions of the Municipal NPDES Storm Water Permit (Board Order No. 6-00-82), as it may be revised from time to time, which requires that CSLT comply with effluent limitations for discharge to land treatment/infiltration systems and surface waters for storm water/urban runoff flows, including discharges to Bijou Park Creek, by November 30, 2008.

14. Heavenly Valley Creek Total Maximum Daily Loads (TMDLs)

Basin Plan amendments (Chapter 4.13) establishing a Total Maximum Daily Load (TMDL) and Implementation Plan for Heavenly Valley Creek within the LTBMU permit

boundaries of Heavenly Ski Resort received final approval from the U.S. Environmental Protection Agency (EPA) on September 30, 2002, and are now in effect. This upper segment of Heavenly Valley Creek has been impaired by sedimentation related to historic ski resort development. The purpose of the Heavenly Valley Creek TMDL is to ensure attainment of all sediment-related water quality standards, especially narrative objectives related to protection of instream beneficial uses. The State water quality objectives of greatest importance for the sediment TMDL are the non-degradation objective (Basin Plan Chapter 5.1), and the narrative objectives for sediment, settleable materials and suspended sediment.

The TMDL is based on LTBMU in-stream monitoring and modeling of sediment delivery to Heavenly Valley Creek, as well as reductions to sediment loading expected as a result of ongoing erosion control and revegetation work. The TMDL implementation program primarily relies on continuation of existing erosion control and monitoring programs carried out under an adaptive management approach by the Dischargers. Desired instream and hillslope conditions, projected to occur within 20 years after final approval of the TMDL, are shown in Basin Plan Tables 4.13-HVC-1 and 4.13-HVC-2 and repeated below:

Table 4.13-HVC-1. Desired Instream Conditions, Heavenly Valley Creek TMDL

Parameter	Desired Condition(s)
Instream Total Sediment Load[1]	Maximum 58 tons/year as a 5 year rolling average, as measured at the Property Line monitoring station.
Geomorphology Measures	
Pfankuch channel stability rating (composite rating includes numeric scores for 15 different indicators)[2]	Increasing trend over time from "fair-poor" to "good" (comparable with overall rating of Hidden Valley Creek)
USFS Region 5 "Stream Condition Inventory" (SCI)[2]	Improving trends in channel morphology over time
Biological Parameters	
Macroinvertebrate community health	Improving trends in benthic invertebrate community metrics over time, approaching conditions in Hidden Valley Creek

[1] Incorporated by reference in CRWQCB, Lahontan Region, 2000 (technical staff report, Sections 3.2 and 3.5, with May 2002 supplement.

[2] Incorporated by reference in U.S. Forest Service, 1996 (pages 5-2 to 5-9); U.S. Forest Service, 1997, pages 5-1 to 5-9; Hazelhurst and Widegren , 1998, and Hazelhurst *et al.,* 1999 (annual U.S. Forest Service Heavenly Ski Resort environmental monitoring reports).

Table 4.13-HVC-2. Desired Hillslope Conditions, Heavenly Valley Creek TMDL

Parameter	Desired Condition(s)
Watershed disturbance[1]	Schedules in ski resort master plan mitigation program (TRPA 1995, 1996) for implementing and maintaining BMPs for roads and ski runs are met, with progress and BMP effectiveness reported annually and evaluated at 5-year intervals
Effective soil cover (vegetation, woody debris, organic matter, rocks) on ski runs and roads[2]	Cover meets modeled mitigation targets set for specific road/run segments in watershed, and overall cover rating is "good" or better using LTBMU evaluation criteria

[1] Incorporated by reference in Tahoe Regional Planning Agency (TRPA) Draft EIR/EIS/EIS for Heavenly Ski Resort Master Plan (1995), pages 4.1-50 to 4.1-72 (CWE Soil Erosion Reduction Program) and Appendices H and I; TRPA (1996), pages 6.4-1 to 6.5-6 (Revised Mitigation and Monitoring Plan); and U.S. Forest Service (1998), Appendix G (CWE Technical Memorandum No. 1).

[2] Incorporated by reference in TRPA (1995) Appendix I, Road and Run Segment Mitigation Tables; Hazelhurst and Widegren (1998) pages 3.1 to 3.13 (on effective soil cover evaluation); and Hazelhurst *et al.*, 1999, pages 3.1 to 3.7 and 6.3 to 6.7 (on effective soil cover evaluation).

Within the Heavenly Valley Creek Watershed, the Heavenly Valley Creek TMDL implementation measures, based primarily on the continuation of the existing LTBMU erosion control program, include full application of Best Management Practices (BMPs) to all new and existing disturbed areas within the ski resort. Implementation, maintenance, monitoring, and if necessary, modification of BMPs on all new and existing disturbed areas are expected to reduce hillslope sediment delivery, and allow recovery of instream physical conditions, leading to a gradual recovery of aquatic life uses, and attainment of instream standards specified in Basin Plan Chapter 4.13 by 2022. The Regional Board will use its existing authority, and a three-tier compliance approach (ranging from voluntary compliance to regulatory action) to ensure implementation.

Results of TMDL monitoring will be reported in annual reports, and in comprehensive evaluations produced at five year intervals. Modifications to the TMDL monitoring program may be made over time. If significant progress towards implementation of controls necessary to meet load allocations, and toward attainment of water quality standards, is not apparent at the conclusion of the review of the second (2005-2006) five-year monitoring report, Regional Board staff will evaluate the need for revision of the TMDLs and/or the implementation program.

15. Beneficial Uses – Ground Water – Tahoe Valley South (Basin 6-5.01)

The beneficial uses of the Tahoe Valley South Groundwater Basin (Basin 6-5.01) are:

a) municipal and domestic supply;
b) agricultural supply; and
c) industrial service supply.

16. Beneficial Uses - Surface Water – Lake Tahoe Hydrologic Unit

a) Heavenly Valley Creek is tributary to Trout Creek and the Upper Truckee River. The beneficial uses of Heavenly Valley Creek, its tributaries, Trout Creek, and the Upper Truckee River as set forth and defined in the Basin Plan are:

i. municipal and domestic supply;
ii. agricultural supply;
iii. ground water recharge;
iv. water contact recreation;
v. non-contact water recreation;
vi. commercial and sport fishing;
vii. cold freshwater habitat;
viii. wildlife habitat;
ix. rare, threatened or endangered species (Heavenly Valley Creek and tributaries only;
x. migration of aquatic organisms; and
xi. spawning, reproduction, and development.

b) The beneficial uses of minor surface waters in the South Tahoe Hydrologic Area as set forth and defined in the Basin Plan are:

i. municipal and domestic supply;
ii. agricultural supply;
iii. ground water recharge;
iv. water contact recreation;
v. non-contact water recreation;
vi. commercial and sport fishing;
vii. cold freshwater habitat;
viii. wildlife habitat; and
ix. spawning, reproduction, and development.

c) The beneficial uses of minor wetlands in the South Tahoe Hydrologic Area as set forth and defined in the Basin Plan are:

i. municipal and domestic supply;
ii. agricultural supply;
iii. ground water recharge;
iv. freshwater replenishment;
v. water contact recreation;
vi. non-contact water recreation;
vii. commercial and sport fishing;
viii. cold freshwater habitat;
ix. wildlife habitat;
x. preservation of biological habitats of special significance;
xi. rare, threatened, or endangered species;
xii. migration of aquatic organisms;
xiii. spawning, reproduction, and development;
xiv. flood peak attenuation/flood water storage; and
xv. water quality enhancement.

d) The beneficial uses of Lake Tahoe as set forth and defined in the Basin Plan are:

i. municipal and domestic supply;
ii. agricultural supply;
iii. ground water recharge;
iv. navigation;
v. water contact recreation;
vi. non-contact water recreation;
vii. commercial and sport fishing;
viii. cold freshwater habitat;
ix. wildlife habitat;
x. preservation of biological habitats of special significance;
xi. migration of aquatic organisms; and
xii. spawning, reproduction, and development.

17. Beneficial Uses - Surface Water –West Fork Carson Hydrologic Unit

a) The beneficial uses of minor surface waters and minor wetlands in the Woodfords Hydrologic Area as set forth and defined in the Basin Plan are:

i. municipal and domestic supply;
ii. agricultural supply;
iii. ground water recharge;
iv. freshwater replenishment;
v. water contact recreation;
vi. non-contact water recreation;
vii. commercial and sport fishing;
viii. cold freshwater habitat;
ix. wildlife habitat;
x. spawning, reproduction, and development; and (the following three beneficial uses are defined only for the minor wetlands);
xi. rare, threatened, or endangered species;
xii. flood peak attenuation/flood water storage; and
xiii. water quality enhancement.

18. CEQA Compliance

These waste discharge requirements are for both the continued operation of a currently regulated facility, and the construction of new or modified facilities. The waste discharge requirements comply with the provisions of the California Environmental Quality Act as follows:

a) To the extent that the discharge requirements govern the waste discharged from continued operation and minor maintenance of the Facility, the activity constitutes operation, repair, maintenance, or minor alteration of existing facilities, and such activity is exempt from the provisions of the California Environmental Quality Act in accordance with California Code of Regulations Title 14, Chapter 3, §15301, Existing Facilities.

b) The Heavenly Ski Resort Master Plan Program EIR (Master Plan EIR) was certified by the El Dorado County Board of Supervisors on September 17, 1996. The Regional Board has reviewed the project pursuant to CEQA Guidelines, Section 15168(c)(2)

and finds that none of the effects or mitigation measures that would result from the project, including those described below, would require a subsequent environmental document pursuant to CEQA Guidelines, Section 15162. Accordingly, the project is within the scope of the Master Plan EIR.

c) Subsequent activities included in the certified Master Plan EIR must be examined to determine whether additional environmental documents must be prepared. If a proposed activity included in the certified Master Plan EIR is found to have no new effects and no new mitigation measures would be required, the Regional Board could find that a project was within the project scope covered by the Master Plan EIR, and would not require additional environmental review.

d) The Board has considered the Heavenly Ski Resort Master Plan Program EIR. The following potentially significant water quality impacts were identified in the Master Plan EIR:

i. Potentially significant impact – Proposed construction and long-term operation of new ski lifts, runs, access roads, snowmaking pipelines, and other facilities could result in increases in peak and total runoff, increased soil erosion, and decreased water quality in local creeks and lakes.

Mitigation finding – Potential short-term construction impacts to water resources and the mitigation measures to be implemented are identified in Table 4.1-11 of Volume 3A of the Master Plan EIR. If runoff from construction sites exceeds appropriate water quality standards, construction must be halted until additional erosion reduction techniques are implemented and runoff from the site is within the standards. For long-term effects, the Dischargers will also estimate any increase in soil erosion from the completed project using the Cumulative Watershed Effects (CWE) model or other appropriate techniques. Erosion reduction measures must be implemented elsewhere (but preferably within the same watershed as the project) so that there is no net increase in the erosion rate for the watershed, and the watershed Threshold of Concern (TOC) is not exceeded. Future development must not increase the percent Equivalent Roaded Acres (ERA) above the TOC for each of the Heavenly watersheds.

Section 6.4 of Appendix 8.G Revised Mitigation and Monitoring Plan of the Master Plan EIR provides additional details about potential construction impacts and required mitigations. Heavenly must comply with the specific mitigation requirements in Section 6.4 for general construction and specific types of construction, e.g., ski lifts, ski runs, access roads, and snowmaking pipelines. Fertilizers may be used to reestablish vegetation on disturbed sites. Since fertilizers can contaminate water resources, fertilizer must be applied judiciously and application rates must not exceed current versions of any guidelines developed by the Regional Board, as well as LTBMU and TRPA. Construction debris, including construction material fragments and spray cans may blow, roll or wash into waterways and pollute surface waters or leach into groundwater. Construction debris must be picked up daily or more frequently when there is wind and/or rain. For ski lift construction, drop cloths must be used to protect the ground from spills of paints, lubricants and solvents, and spilled materials must be cleaned up immediately. To reduce impacts from long-term maintenance of new ski runs, summer grading of new ski runs is prohibited.

The Master Plan EIR identifies Heavenly as being responsible for implementation, and LTBMU as the agency responsible for ensuring this measure is carried out and for monitoring to ensure the mitigation measure is effective. The Regional Board is also responsible for determining that impacts from construction and long-term operation of facilities does not result in increased soil erosion and decreased water quality in local creeks and lakes. This Board Order includes monitoring and reporting requirements for annual Mitigation Monitoring Summary and Environmental Monitoring Program reports and quarterly Water Quality Monitoring reports which will be used to evaluate long-term impacts.

This Board Order also requires temporary and permanent BMPs related to construction and long-term operations of existing and new facilities. Mitigation measures, such as upgraded BMPs, are required in the Provisions section of this permit to prevent decreased water quality in local creeks due to long-term operation of the California Base lodge and parking lots. The mitigation measures identified in the Master Plan EIR and implemented through this Board Order are intended to reduce impacts from construction and long-term operations of new facilities to a level of insignificance.

ii. Potentially significant impact – Proposed construction of new facilities with impervious surfaces could result in increases in peak and total runoff. In some situations, infiltration of storm water generated from new facilities could contaminate groundwater.

Mitigation finding – Heavenly must design and construct infiltration facilities with capacity for at least a 20-year 1-hour storm event unless an evaluation determines that infiltration of storm water may contaminate groundwater. If groundwater is at risk of contamination, Heavenly must design and construct SEZs, detention ponds, or other facilities to prevent an increase in peak flow. The Master Plan EIR identifies runoff capacity for the 20-year 1-hour storm event as the required mitigation level for this impact. The Master Plan EIR identifies Heavenly as being responsible for implementation, and TRPA as the agency responsible for ensuring this measure is carried out and for monitoring to insure the mitigation measure is effective.

The Regional Board is also responsible for determining that project proposals incorporate design and construction features that avoid adverse impacts due to increased flows and minimize risks of groundwater contamination. In conjunction with mitigation requirements identified in the Master Plan EIR, this Board Order requires the Dischargers to evaluate depth to seasonal water table, soil conditions, and infiltration rates in designing infiltration facilities. The mitigation measures identified in the Master Plan EIR and implemented through this Board Order are intended to reduce impacts from construction and long-term operations of new facilities to a level of insignificance.

iii. Potentially significant impact – Disturbance to SEZs from existing and proposed facilities and disturbance to jurisdictional wetlands and waters from existing facilities adversely impacts water quality by disrupting the ability of SEZs to convey, filter, and remove pollutants from runoff. Existing and proposed disturbance to SEZs is not in compliance with TRPA and LTBMU requirements to avoid disturbance to SEZs and restore or create SEZs.

Mitigation finding – The Master Plan EIR requires Heavenly to restore all the disturbed but not developed SEZs (which, in California, includes approximately ten acres of ski runs in SEZs disturbed by vegetation removal and grading and two acres of SEZ along Heavenly Valley Creek disturbed by fill and piping). TRPA and LTBMU are responsible for approving restoration designs achieving SEZ restoration while still permitting ski area operations and winter time skiing. Heavenly must minimize operational impacts to SEZs from vegetation removal for skier safety by only allowing cutting of the tops of vegetation exceeding three feet tall, and prohibiting use of heavy equipment and vehicles for vegetation removal in SEZs.

An additional 5.2 acres of developed SEZ must be restored to meet the TRPA SEZ restoration threshold standard of restoring 25% of the 20.8 acres of developed California and Nevada SEZ acreage within the Tahoe Basin. Approximately 15 acres of the existing developed SEZs are in California. Interim performance targets in the Master Plan show 75% of the 5.2 acres of developed SEZ and 72% of the disturbed but not developed SEZ are to be restored by 2003, with completion of the remaining required SEZ restoration by 2006. Since jurisdictional waters and wetlands within the Tahoe Basin are usually also delineated as SEZs, restoration of SEZs will also reduce impacts from disturbance to jurisdictional waters and wetlands from existing facilities.

The Master Plan EIR identifies Heavenly as being responsible for implementation, and TRPA and LTBMU as the agencies responsible for ensuring this measure is carried out and for monitoring to insure the mitigation measure is effective. Plans for new development for ski lifts and ski runs have subsequently been modified to reduce or eliminate new disturbance to SEZs. The mitigation measures identified in the Master Plan EIR are intended to reduce impacts from new and ongoing disturbance to SEZs from new and existing facilities to a level of insignificance.

In addition to the mitigation measures in the Master Plan EIR, any disturbance to SEZ for new construction is prohibited unless the Regional Board provides an exemption to prohibitions against discharge or threatened discharge of wastes attributable to new development in SEZs. If the Regional Board provides any exemptions, additional mitigation may be required. The mitigation measures identified in the Master Plan EIR and implemented through this Board Order are intended to reduce impacts resulting from disturbance to SEZs to a level of insignificance.

iv. Potentially significant impact – Disturbance of jurisdictional wetlands and waters due to construction of proposed facilities.

Mitigation finding – Before development of any new facilities, Heavenly will complete a delineation of jurisdictional wetlands and waters. Heavenly must avoid development within the wetlands and waters to the extent possible. If development within the wetlands cannot be avoided, for wetland development projects requiring a Section 404 permit from the U.S. Army Corps of Engineers (COE), Heavenly must obtain Water Quality Certification from the Regional Board. The Master Plan EIR identifies Heavenly as being responsible for implementation, and the COE as the agency responsible for ensuring this measure is carried out and for monitoring to insure the

mitigation measure is effective. In addition to complying with COE wetlands permitting requirements, the Dischargers must comply with all mitigation requirements identified in any Water Quality Certification issued by the Regional Board. The mitigation measures identified in the Master Plan EIR and implemented through this Board Order are intended to reduce impacts on jurisdictional wetlands and waters from development of new facilities to a level of insignificance.

v. Potentially significant impact – Proposed new land coverage could exceed the allowable land coverage based on estimates of TRPA allowable land capability. Nearly all of the Facility is on high hazard lands (Class 1a, 1b, 1c, and 2) which cannot tolerate much disturbance without permanent damage to water quality or land productivity. While Volume 5 of the Final Master Plan EIR determined that, based on Heavenly's compliance with allowable land coverage coefficients, the impacts of existing permanent Tahoe Basin land coverage to be less than significant, proposed new land coverage exceeding allowable land coverage limits would be significant.

Mitigation finding – To mitigate for proposed new land coverage, Heavenly must remove existing onsite land coverage. In California, 9.89 acres of existing onsite roadways were identified for abandonment/obliteration in Appendix I of the Draft Master Plan EIR. New land coverage in TRPA land capability districts 1a, 1b, 2, and 3 would require approval of findings included in the TRPA Code of Ordinances and would require installation of temporary and permanent BMPs. The Master Plan EIR identifies Heavenly and TRPA as being responsible for implementation, and TRPA as the agency responsible for ensuring this measure is carried out and for monitoring to insure the mitigation measure is effective. The Regional Board is also responsible for determining that permitted projects are in compliance with TRPA land coverage requirements by reviewing proposals for projects with significant proposed new land coverage and by reviewing annual mitigation monitoring summary reports to track progress in removing existing onsite land coverage. The mitigation measures identified in the Master Plan EIR are intended to reduce impacts due to new land coverage to a level of insignificance.

vi. Potentially significant impact – Fugitive dust generated during project construction could increase ambient fine particulate concentrations. Fine particulate emissions can be deposited directly in surface waters or can be transported by runoff to surface waters. Chemical dust suppressants used to control dust could impact water quality.

Mitigation finding – Heavenly must require its contractors to implement mitigation measures including (but not limited to) watering and daily cleaning of onsite paved roads to minimize generation and transport of construction related fugitive dust. The Master Plan states that chemical dust suppressants may only be used after review and approval by Regional Board staff. The General Requirements and Prohibitions section of the Discharge Specifications in this permit (E.11) prohibits the discharge of toxic chemicals. The Master Plan EIR identifies Heavenly as being responsible for implementation, and TRPA as the agency responsible for ensuring this measure is carried out and for monitoring to insure the mitigation measure is effective. The mitigation measures identified in the Master Plan EIR and

implemented through this Board Order are intended to reduce impacts from fugitive dust to a level of insignificance.

vii. Potentially significant impact – Loss or degradation of deciduous trees, wetlands and meadows vegetation resulting from construction of new facilities. These riparian or wetland vegetation communities protect water quality by stabilizing soils, moderating peak flows, and allowing nutrient uptake.

Mitigation finding – Prior to project-level design or approval of any proposed facility, Heavenly must retain a qualified biologist to identify all deciduous trees, wetlands and meadows located within or adjacent to the proposed construction corridor and must delineate facility siting alternatives that avoid the loss or degradation of these resources. Through consultation with LTBMU and TRPA, Heavenly must implement a siting alternative that avoids the loss or degradation of riparian or wetland plant communities. If TRPA, the Regional Board, and LTBMU determine that construction of any new facility cannot be sited to avoid the loss or degradation of riparian or wetland plant communities, the extent and intensity of impact must be minimized. If riparian or wetland vegetation is disturbed, an area 1.5 times the affected area must be restored or created within the special use permit boundary. The Regional Board may require additional area to be restored or created to adequately replace or mitigate loss of wetland functions and values for certain wetland types, such as those which support threatened or endangered species or unique biological communities. The Master Plan EIR identifies Heavenly as being responsible for implementation, and TRPA as the agency responsible for ensuring this measure is carried out and for monitoring to insure the mitigation measure is effective. The mitigation measures identified in the Master Plan EIR are intended to reduce impacts on water quality from the loss or degradation of deciduous trees, wetlands and meadows vegetation due to construction of new facilities to a level of insignificance.

viii. Potentially significant impact –Increased soil erosion, peak and total runoff, decreased water quality in local creeks and lakes, violation of surface water quality standards and thresholds, and indirect effects on wildlife and fisheries have resulted from previous construction of impervious surfaces, the removal of vegetation and the long-term operations of facilities.

Mitigation finding – Heavenly and LTBMU have developed a CWE Soil Erosion Reduction Program. Even after considering the impacts of construction of new facilities, the CWE program is expected to result in reduction of percent ERA significantly below the TOC. For each watershed, Tables 4.1-6 and 4.1-7 of Volume 3A of the Master Plan EIR show the reduction of ERA below TOC and the acreage of roads and ski runs to receive mitigation. Heavenly will reduce the erosion rate from existing ski runs and road cut and fill embankments using techniques such as retaining walls, riprap, surface roughening, interception trenches or waterbars, revegetation, and mulching.

The CWE implementation schedule is based upon mitigating the most severe erosion sources first. All mitigations required to reach the TOC are to be implemented by the end of 2003. All road segments with modeled erosion

rates of over five tons per year and all ski runs with modeled erosion rates over one ton per year will receive mitigation measures by 2006.

The CWE proposes to mitigate for impervious surfaces by stabilizing and revegetating ground surfaces next to the impervious surfaces and by using infiltration trenches or other erosion prevention BMPs. The Master Plan EIR identifies Heavenly as being responsible for implementation, and LTBMU as the agency responsible for ensuring this measure is carried out and for monitoring to insure the mitigation measure is effective.

This Board Order also requires temporary and permanent BMPs related to past impervious surface construction and long term operation of existing facilities. Impacts to local creeks resulting from runoff from all of the impervious surfaces at the California Base area and from the application of abrasives and deicers at and below the California Base area were not evaluated in the Master Plan EIR analysis of ERA and TOC for the watersheds. This Board Order establishes a compliance schedule for meeting effluent standards, requires interim operation and maintenance BMP improvements, and establishes a schedule for implementing additional structural BMPs to prevent decreased water quality in local creeks due to long-term operation of the California Base lodge and parking lots. The mitigation measures identified in the Master Plan EIR and this Board Order are intended to reduce impacts on water quality due to past construction and the long-term operation of existing facilities to a level of insignificance.

ix. Potentially significant impact – Through spills, leaks improper use or storage, hazardous materials or chemicals could pollute creeks or groundwater.

Mitigation finding – Heavenly must comply with TRPA, Regional Board, and other state and federal regulations governing chemical use, storage, and disposal. Heavenly must update hazardous materials business plans, emergency plans, and training programs as it uses new chemicals in its operations. If a spill occurs, Heavenly must implement the Hazardous Waste and Substance Potential Spill Emergency Plan. The Master Plan EIR identifies Heavenly as being responsible for implementation, and LTBMU, TRPA, and the Regional Board as the agencies responsible for ensuring this measure is carried out and LTBMU as the agency responsible for monitoring to insure the mitigation measure is effective. The mitigation measures identified in the Master Plan EIR are intended to reduce impacts resulting from use, storage, and disposal of hazardous materials and chemicals to a level of insignificance.

x. The EIR identifies other potentially significant impacts and significant impacts that are not related to water quality. The Board is not responsible for implementing the mitigation measures identified in the EIR or additional mitigation measures other parties have deemed necessary for impacts unrelated to water quality.

19. Notification of Interested Parties

The Regional Board has notified the Dischargers and interested parties of its intent to prescribe waste discharge requirements for the discharge.

20. Consideration of Public Comments

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

IT IS HEREBY ORDERED that the Dischargers shall comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Lake Tahoe Hydrologic Unit

1. All surface flows generated within those portions of the Facility located within the Lake Tahoe Hydrologic Unit, or generated as a result of operations or development of the Facility within the Lake Tahoe Hydrologic Unit, which are discharged to surface waters or land treatment disposal systems, shall not contain constituents in excess of the following concentrations (Table 1):

Table 1
LAKE TAHOE HYDROLOGIC UNIT
SURFACE RUNOFF EFFLUENT LIMITS

		Maximum Concentration For Discharge To:	
		Land Treatment*	Surface Waters*
Constituent	**Units**		
Total Nitrogen	mg/l as N	5.0	0.5
Total Phosphorus	mg/l as P	1.0	0.1
Total Iron	mg/l	4.0	0.5
Turbidity	NTU	200	20
Grease & Oil	mg/l	40	2.0

* The effluent limits for discharge to land shall be effective for discharges from the California Base area on December 31, 2004. The effluent limits for discharge to surface waters shall be effective for discharges from the California Base area on November 30, 2008, at points of compliance established pursuant to the Executive Officer's acceptance of the California Base Retrofit Plan as provided in Section II.D of this Order.

2. If constituent concentrations of runoff waters entering the subject property exceed the numerical standards specified above, there shall be no statistically significant increase (at a 90% confidence level) in the constituent concentrations of the waters as the waters are discharged from the subject property.

3. All surface flows generated within the Facility, or generated as a result of operations or development of the Facility, that are discharged to land treatment or disposal systems, shall not contain the following:

a. Perceptible floating material including, but not limited to, solids, liquids, foams and scums which could result in degradation of water quality.

b. Coloration that causes a nuisance or adversely affects beneficial uses.

c. Substances in concentrations that impart undesirable tastes or odors to fish or other edible aquatic organisms.

d. Oils, greases, waxes, or petroleum derivatives that cause a visible film or coating on the surface of receiving waters or on objects in the receiving waters.

e. Suspended and settleable material in concentrations that cause a nuisance or adversely affect beneficial uses.

f. Substances in concentrations that are toxic to, or that produce detrimental physiological responses to human, plant, or animal life.

g. Identifiable chlorinated hydrocarbons, organophosphates, carbamates, and other pesticide and herbicide groups in detectable concentrations.

h. pH levels below 7.0 nor above 8.4.

i. Coliform organisms attributable to human wastes.

j. Toxic pollutants that will bioaccumulate in aquatic resources to levels which are harmful to human health or wildlife.

B. Receiving Water Limitations -- Lake Tahoe Hydrologic Unit

1. All surface flows generated within those portions of the Facility located within the Lake Tahoe Hydrologic Unit, or generated as a result of operations or development of the Facility within the Lake Tahoe Hydrologic Unit, which are discharged to surface waters in the Heavenly Valley Creek watershed, shall not cause the following water quality objectives for Trout Creek to be exceeded:

Table 2
TROUT CREEK
RECEIVING WATER LIMITS

Constituent	Units	Annual Average	90th Percentile
Total Dissolved Solids	mg/l	50	60
Total Nitrogen	mg/l as N	0.19	----
Total Phosphorus	mg/l as P	0.015	----
Chloride	mg/l	0.15	0.20
Total Iron	mg/l	0.03	----

2. All surface flows generated within those portions of the Facility located within the Lake Tahoe Hydrologic Unit, or generated as a result of operations or development of the Facility within the Lake Tahoe Hydrologic Unit, which are discharged to surface waters, shall not cause the following water quality objectives for Lake Tahoe to be exceeded:

Table 3
LAKE TAHOE
RECEIVING WATER LIMITS

Constituent	Units	Annual Average	90th Percentile
Total Dissolved Solids	mg/l	60	65
Total Nitrogen	mg/l as N	0.15	----
Total Phosphorus	mg/l as P	0.008	----
Sulfate	mg/l	1.0	2.0
Boron	mg/l	0.1	
Chloride	mg/l	3.0	4.0

3. The discharge of surface flows generated within the Facility, or as a result of operation or development of the Facility, to surface waters shall not cause a violation of the following water quality objectives for waters of the Lake Tahoe Hydrologic Unit:

   a. Algal Growth Potential – For Lake Tahoe, the mean algal growth potential at any point in the Lake shall not be greater than twice the mean annual algal growth potential at the limnetic reference station as defined in the Basin Plan.

   b. Biological Indicators – For Lake Tahoe, algal productivity and the biomass of phytoplankton, zooplankton, and periphyton shall not be increased beyond the levels recorded in 1967-71 as described in the Basin Plan.

   c. Clarity – For Lake Tahoe, the vertical extinction coefficient shall be less than 0.08 per meter when measured below the first meter. When water is too shallow to determine a reliable extinction coefficient, the turbidity shall not exceed 3 Nephelometric Turbidity Units (NTU). In addition, turbidity shall not exceed 1 NTU in shallow waters not directly influenced by stream discharges.

   d. Conductivity, Electrical – In Lake Tahoe, the mean annual electrical conductivity shall not exceed 95 umhos/cm at 50°C at any location in Lake Tahoe.

e. pH – In Lake Tahoe, the pH shall not be depressed below 7.0 nor raised above 8.4.

f. Plankton Counts – For Lake Tahoe, the mean seasonal concentration of plankton organisms shall not be greater than 100 per ml and the maximum concentration shall not be greater than 500 per ml at any point in the Lake.

g. Suspended Sediment – Suspended sediment concentration in streams tributary to Lake Tahoe shall not exceed a 90^{th} percentile value of 60 mg/l.

h. Transparency – For Lake Tahoe, the secchi disk transparency shall not be decreased below the levels recorded in 1967-71 as described in the Basin Plan.

C. Receiving Water Limitations – both Lake Tahoe and West Carson Hydrologic Units

1. The discharge of surface flows generated within the Facility, or as a result of operation or development of the Facility, to surface waters shall not cause a violation of the following water quality objectives:

a. Un-ionized Ammonia – The neutral, un-ionized ammonia species (NH_3^o) is highly toxic to freshwater fish. The fraction of toxic NH_3^o to total ammonia species ($NH_4^+ + NH_3^o$) is a function of temperature and pH. Tables 3-1 to 3-4 of the Basin Plan were derived from USEPA ammonia criteria for freshwater. Ammonia concentrations shall not exceed the values listed in these tables. For temperature and pH values not explicitly in these tables, the most conservative value neighboring the actual value may be used or criteria can be calculated from numerical formulas developed by the USEPA. For one-hour (1h-NH_3) and four-day (4d-NH_3) unionized ammonia equations, refer to page 3-4 of the Basin Plan.

b. Bacteria (Surface Waters) - Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock waste. The fecal coliform concentration during any 30-day period shall not exceed a log mean of 20/100 ml, nor shall more than 10 percent of all samples collected during any 30-day period exceed 40/100 ml.

c. Biostimulatory Substances – Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.

d. Chemical Constituents – Waters designated for municipal supply shall not contain concentrations of chemical constituents in excess of the maximum contaminant level or secondary maximum contamination level based upon drinking water standards specified in the following provisions of Title 22 of the California Code of

Regulations which are incorporated by reference into the Basin Plan: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64431-B of Section 64431 (Fluoride), Table 64444-A of Section 64444 (Organic Chemicals, Table 64449-A of Section 64449 (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits), and Table 64449-B of Section 64449 (Secondary Maximum Contaminant Levels-Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

Waters designated for agricultural supply shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

Waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

e. Chlorine, Total Residual – For the protection of aquatic life, total chlorine residual shall not exceed either a median value of 0.002 mg/l or a maximum value of 0.003 mg/l. Median values shall be based on daily measurements taken within any six-month period.

f. Color –Waters shall be free of coloration that causes nuisance or adversely affects the water for beneficial uses.

g. Dissolved Oxygen - The dissolved oxygen concentration, as percent saturation, shall not be depressed by more than 10 percent, nor shall the minimum dissolved oxygen concentration be less than 80 percent of saturation, nor less than that specified in Table 5.1-8 of the Basin Plan.

h. Floating Material - Waters shall not contain floating material, including solids, liquids, foams and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses. For naturally high quality waters, the concentrations of floating material shall not be altered to the extent that such alterations are discernable at the 10 percent significance level.

i. Non-degradation of Aquatic Communities and Populations – All wetlands shall be free from substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animals, or plants; or which lead to the presence of undesirable or nuisance aquatic life. All wetlands shall be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical and hydrological processes.

j. Oil and Grease – Water shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses. For naturally high quality waters, the

concentration of oils, greases, or other film or coat generating substances shall not be altered.

k. Pesticides- Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable levels, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life.

Waters designated for municipal supply shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations specified in Table 64444-A of Section 64444 (Organic Chemicals) of Title 22 of the California Code of Regulations which is incorporated by reference into this plan. This incorporation-by –reference is prospective including future changes to the incorporated provisions as the changes take effect.

Pesticides are defined here and in the Basin Plan to include insecticides, herbicides, rodenticides, fungicides, piscicides, and all other economic poisons. An economic poison is any substances intended to prevent, repel, destroy, or mitigate the damage from insects, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans or animals.

l. pH - Changes in normal ambient pH levels shall not exceed 0.5 pH units.

m. Radioactivity - Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life.

Waters designated for municipal supply shall not contain concentrations of radionuclides in excess of the limits specified in Table 4 of Section 64443 (Radioactivity) of Title 22 of the California Code of Regulations which is incorporated by reference into this plan. This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

n. Sediment- The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses.

o. Settleable Material – Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. For naturally high quality waters, the concentrations of settleable material shall not be raised by more than 0.1 milliliter per liter.

p. Suspended Materials - Waters shall not contain suspended material in concentrations that cause a nuisance or adversely affect the water for beneficial uses. For naturally high quality waters, the concentrations of suspended material shall not be altered to the extent that such alterations are discernable at the 10 percent significance level.

q. Tastes and Odors – Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses. For naturally high quality waters, the taste and odor shall not be altered.

r. Temperature - The natural receiving water temperature shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such an alteration in temperature does not adversely affect the water for beneficial uses. For waters designated cold freshwater habitat, the temperature shall not be altered.

s. Toxicity - All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life.

t. Turbidity – Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.

2. The discharge of surface flows generated within the Facility, or as a result of operation or development of the Facility, shall not cause a violation of the following water quality objectives for ground waters:

a. Bacteria (Ground Waters) - In ground waters designated for municipal supply, the median concentration of coliform organisms over any seven-day period shall be less than 1.1/100 milliliters.

b. Chemical Constituents – Ground waters designated for municipal supply shall not contain concentrations of chemical constituents in excess of the maximum contaminant level or secondary maximum contamination level based upon drinking water standards specified in the following provisions of Title 22 of the California Code of Regulations which are incorporated by reference into the Basin Plan: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64431-B of Section 64431 (Fluoride), Table 64444-A of Section 64444 (Organic Chemicals, Table 64449-A of Section 64449 (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits), and Table 64449-B of Section 64449 (Secondary Maximum Contaminant Levels-Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

Waters designated for agricultural supply shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

Ground waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

c. Radioactivity - Ground waters designated for municipal supply shall not contain concentrations of radionuclides in excess of the limits specified in Table 4 of Section 64443 (Radioactivity) of Title 22 of the California Code of Regulations which is incorporated by reference into this plan. This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

d. Tastes and Odors – Ground waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect the water for beneficial uses. For naturally high quality waters, the taste and odor shall not be altered. For ground waters designated for municipal supply, at a minimum, concentrations shall not exceed adopted secondary maximum contaminant levels as specified in Basin Plan 5.1-12

D. Best Management Practices

1. Unless a variance has been granted by the Executive Officer, there shall be no removal of vegetation nor disturbance of existing ground surface conditions between **October 15** of any year and **May 1** of the following year.

2. Surplus or waste material and/or fill of earthen material shall not be placed in drainage ways or within the 100-year flood plain of any surface water of the Lake Tahoe Hydrologic Unit.

3. All loose piles of soil, silt, clay, sand, debris, or other earthen materials should be protected in a reasonable manner to prevent the discharge of these materials to waters of the State.

4. Prior to **October 15** of each year, the Dischargers shall provide permanent or temporary (if retrofit project is incomplete) stabilization of all disturbed or eroding areas through commencement of revegetation and/or completion of mechanical stabilization measures. Commencement of revegetation shall consist of seeding, planting, mulching, initial fertilization as needed, and initial watering as needed.

5. Prior to any disturbance of existing soil conditions, the Dischargers shall install temporary erosion control facilities to prevent transport of eroded earthen materials and other wastes off of the property.

6. During construction activities, all non-construction areas in the vicinity should be protected by fencing or other means to prevent unnecessary disturbance.

7. All disturbed areas shall be adequately restabilized and revegetated areas shall be continually maintained until vegetation becomes established.

8. Surplus waste earthen materials shall be removed from the Facility and deposited at a legal point of disposal, or restabilized on-site in accordance with erosion control plans submitted by the Dischargers. At no time shall waste earthen materials be placed in surface water drainage courses, or in such a manner or location as to allow the discharge of such materials to adjacent undisturbed land or to any surface water drainage course.

9. At a minimum, runoff from impervious surfaces shall be treated and/or contained on site for a 20-year, 1-hour storm. A 20-year, 1-hour storm would produce approximately 1.0 inch of rain. However, containment of a storm of this size does not necessarily ensure compliance with effluent limitations or receiving water quality standards. The Dischargers shall evaluate depth to seasonal water table, soil conditions, infiltration rates, and potential for groundwater contamination in designing infiltration facilities. Storm water runoff in excess of the design storm that leaves the site shall only be discharged to a storm drain or to a stabilized drainage. The Executive Officer can accept alternate treatment methods where site limitations prevent on-site treatment, containment, and infiltration.

10. Surface flows from the project site shall be controlled so that they do not cause downstream erosion at any point.

11. There shall be no significant modification of existing drainage ways or existing stream channels except for those modifications designed to improve water quality and beneficial uses. All modifications of the bed, channel, or bank of a stream require prior written acceptance by the Regional Board, the California Department of Fish and Game, and the United States Army Corps of Engineers.

12. Drainage swales that are permitted to be disturbed by construction activities should be stabilized by appropriate soil stabilization measures to prevent erosion.

13. Snow storage and disposal shall be managed to avoid the discharge of pollutants, including sand and de-icing materials, to receiving waters.

E. General Requirements and Prohibitions

1. The discharge of any waste which causes violation of any narrative water quality objective contained in the Basin Plan, including the Nondegradation Objective, is prohibited.

2. The discharge of any waste which causes violation of any numerical water quality objective contained in the Basin Plan is prohibited.

3. Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated, the discharge of waste which causes further degradation or pollution is prohibited.

4. The discharge of treated or untreated domestic sewage, industrial waste, garbage or other solid wastes, or any other deleterious material to the surface waters of the Lake Tahoe Basin is prohibited

5. The discharge of garbage or other solid waste to lands within the Lake Tahoe Basin is prohibited.

6. The discharge, attributable to human activities, of solid or liquid waste materials including soil, silt, clay, sand, and other organic and earthen materials to surface waters of the Lake Tahoe Basin is prohibited.

7. The discharge or threatened discharge, attributable to human activities, of solid or liquid waste materials including soil, silt, clay, sand, and other organic and earthen materials below the high-water rim of Lake Tahoe or to lands within the 100-year floodplain of any tributary of Lake Tahoe is prohibited.

8. The discharge or threatened discharge, attributable to new development in Stream Environment Zones, or which is not in accordance with land capability, of solid or liquid waste, including soil, silt, sand, clay, or other organic or earthen materials, to ground or surface waters in the Lake Tahoe Basin is prohibited.

9. The discharge or threatened discharge, attributable to new development in Stream Environment Zones, of solid or liquid waste, including soil, silt, clay, sand, rock, metal, plastic, or other organic, mineral or earthen materials, to Stream Environment Zones in the Lake Tahoe Basin is prohibited.

10. The applicability of and exemption criteria for the above nine prohibitions are discussed in Section 5.2 of the Basin Plan.

11. The discharge of oil, gasoline, diesel fuel, petroleum derivative, or any other toxic chemical or hazardous waste is prohibited.

II. PROVISIONS

A. Rescission of Board Order No. 6-91-36

Board Order No. 6-91-36 is hereby rescinded.

B. Standard Provisions

The Dischargers shall comply with the "Standard Provisions for Waste Discharge Requirements", Attachment B, dated September 14, 1994, which is made part of this Order.

C. Monitoring and Reporting

Pursuant to Section 13267 (b) of the California Water Code, the Dischargers shall comply with Monitoring and Reporting Program No. R6T-2003-**(PROP)** and the General Provisions for Monitoring and Reporting. The Monitoring and Reporting Program includes requirements to report on mitigation and monitoring measures required in the Master Plan EIR/EIS and the Regional Board's Heavenly Valley Creek TMDL.

D. Time Schedule for Compliance

1. California Base Area Assessment

The Dischargers will prepare a plan to assess nutrient, sediment, and pollutant loading from the California Base area. As part of this plan, the Dischargers will prepare an inventory and map of facility improvements designed to protect water quality at the California Base area. The inventory and map should show and describe sources for each inflow to existing storm water treatment BMPs and conveyances that leave the California Base area. The inventory and map should also show and describe the type and quantities of deicers and abrasives used by the Dischargers on the California Base areas and on City of South Lake Tahoe roads.

The monitoring component of this plan should be designed to assess pollutant loads as well as concentrations and to determine the effectiveness of existing structural BMPs and modified operational and maintenance practices in reducing pollutant loads discharged from the California Base area. The monitoring component also shall be designed to identify and characterize the episodic rapid increases in discharge, suspended sediment, and turbidity flowing from the California Base area into Bijou Park Creek.

The Dischargers will submit the draft plan for Regional Board review by **August 31, 2003**. The Dischargers will incorporate Regional Board staff comments into a final plan that will be submitted for the Executive Officer's acceptance. The Dischargers will submit the final plan by **October 31, 2003** or **30 days following receipt of Board comments**, whichever date is later. Most elements of the monitoring component would not require a variance to the October 15 – May 1 soil disturbance prohibition period and should be installed or implemented in 2003. Monitoring during the wet part of the 2003-2004 water year is important in collecting information to quantify pollutant loading, to evaluate existing or modified BMPs, and to assess the need for additional retrofit projects. To allow for installation of some monitoring equipment, if necessary, after wet season flows have subsided, the monitoring component shall be fully implemented no later than **July 15, 2004.**

2. California Base Area Interim Operations and Maintenance Plan

The Dischargers will prepare a plan to develop, implement, and monitor interim operations and maintenance improvements designed to improve water quality of runoff discharged into Bijou Park Creek and the Bijou

Park watershed. The plan should identify measures to prevent discharge of non-storm water discharges, such as irrigation or snowmaking water, into storm water treatment BMPs or into Bijou Park Creek.

Storm water controls identified in the interim plan may include a variety of techniques to provide different levels and types of controls in different areas. Techniques may include both management and structural controls for both peak flow and water quality. Techniques to be considered may include but are not limited to:

- Management techniques, such as sweeping of parking areas and roads where the Dischargers apply abrasives or deicers
- Timely removal and proper disposal of sediment or other pollutants from vaults or clarifiers.
- Reductions in amount of deicers or abrasives used or reductions in the potential pollutant loading from deicers or abrasives
- Vegetated sediment control zones along parking lot perimeters.
- Snow haul to off-site treatment facilities where discharge to infiltration systems is more feasible

The Dischargers will submit the draft plan for Regional Board review by **August 31, 2003**. The Dischargers will incorporate Regional Board staff comments into a final plan that will be submitted for the Executive Officer's acceptance. The Dischargers will submit the final plan by **October 31, 2003** or **30 days following receipt of Board comments**, whichever date is later. The interim operations and maintenance improvements shall be fully implemented no later than **November 30, 2003**.

3. California Base Area Facilities Retrofit Plan

Unless the Dischargers can demonstrate **by December 31, 2004** that monitoring shows that the interim operations and maintenance improvements result in discharge from the California Base Area which achieves effluent limitations set forth on Table 1 of Section I.A.1 for discharges to land, discharges to surface waters and other waste discharge requirements, the Dischargers will prepare a California Base Area Facilities Retrofit Plan, which shall include an implementation schedule. The implementation schedule will specify on a prioritized basis, actions and areas to be addressed during each year of plan implementation. The actions and projects are to be designed to improve water quality of runoff discharged into Bijou Park Creek and to meet effluent limitations and other waste discharge requirements. Off-site projects within the Bijou Park Creek watershed may be considered. The Plan shall specify proposed points of compliance for application of effluent limits specified in Table 1 of Section I.A.1 of this Order.

The Dischargers will submit the draft plan for Regional Board staff review by **March 1, 2005**. The Dischargers will incorporate Regional Board staff comments into a final plan that will be submitted for the Executive Officer's acceptance. The Dischargers will submit the final plan by **June 1, 2005** or **30 days following receipt of Board comments**, whichever date is later.

Storm water controls identified in the Retrofit Plan may include a variety of techniques to provide different levels and types of controls in different areas. Techniques may include both management methods (as described in Section II.D.2) and structural controls for both peak flow and water quality. Additional techniques to be considered may include but are not limited to:

- Separate conveyances or high flow bypasses to keep high flows of relatively clean snowmelt runoff from flushing out pollutants trapped in parking lot treatment BMPs
- On-site treatment utilizing BMPs capable of removing fine and coarse sediment and dissolved nutrients.
- Areas with permeable pavement or infiltration facilities in areas without high ground water tables.
- Conveyance and treatment off-site before discharge to Bijou Park Creek
- SEZ spreading, creation, or restoration off-site.

The Facility Retrofit Plan will become final upon the acceptance by the Executive Officer. Upon such acceptance, the Executive Officer will propose amendments (if necessary) to incorporate the plan and schedule of improvements into these Waste Discharge Requirements.

The Executive Officer may in the future accept modifications to the Facility Retrofit Plan at the request of the Dischargers. However, modifications shall not affect the compliance date established in Section II.D.4.

4. California Base Area Retrofit Implementation

The Dischargers will implement the California Base Area Retrofit Plan to comply with effluent limitations, receiving water standards and other waste discharge requirements upon acceptance of the plan by the Regional Board Executive Officer. The Dischargers will complete plan implementation no later than **October 15, 2006** or **by the completion date for Heavenly Ski Resort Master Plan Upgraded Facilities project to replace the California Base Lodge, whichever date comes first**. A report certifying this work as complete must be submitted by **December 1, 2006.**

The Dischargers will continue to maintain all constructed facilities and continue to implement the management controls identified in the Plan after the compliance date established in this section.

5. Retrofit Implementation within TRPA Priority Two Watersheds

For all other existing structures or improvements within the Facility with impermeable surfaces within the Heavenly Valley Creek, Bijou Park, and Bijou Creek watersheds, the Dischargers shall complete design and installation of permanent BMPs designed to treat storm water runoff to comply with effluent limitations, receiving water standards and other waste discharge requirements. If not limited by site conditions, the

permanent BMPs shall also be sized to contain and infiltrate runoff generated by, at a minimum, the 20-year 1-hour storm. The Dischargers will complete implementation of permanent BMPs for such existing structures or improvements with impermeable surfaces no later than **October 15, 2006**. Unless the structure or improvement is removed, and the site stabilized and restored by **October 15, 2006**, this retrofit requirement does apply to facilities, such as the Upper California Maintenance Shop, identified for replacement, removal or relocation in Master Plan Table 3-12 Upgraded Facilities – Estimated Project Phasing. A report certifying this work as complete must be submitted by **December 1, 2006.**

The Dischargers will continue to maintain all constructed facilities and continue to implement the management controls identified in the Plan after the compliance date established in this section.

6. Heavenly Valley Creek TMDL Implementation

The erosion control work required pursuant to the Heavenly Valley Creek TMDL implementation program and identified for completion by 2006 will be completed no later than **October 15, 2006.** A report certifying this work as complete must be submitted by **December 1, 2006.**

The Dischargers will maintain and review the performance of BMPs, reporting on progress installing and maintaining BMPs, and identifying and implementing improvements in BMP design and implementation **annually**. The Dischargers shall report **annually** on progress in meeting schedules in the ski resort master plan mitigation program, in reducing watershed disturbance, and in meeting effective soil cover targets. The Dischargers will conduct comprehensive reviews of progress towards watershed restoration and attainment of water quality standards, and identify needs for change through adaptive management programs. The first comprehensive five-year environmental monitoring report covering 1995-2000 shall be submitted no later than **December 31, 2003.** The second comprehensive five-year environmental monitoring report shall be submitted no later than **June 30, 2006**.

Implementation, maintenance, monitoring, and if necessary, modification of BMPs on all new and existing disturbed areas are expected to reduce hillslope sediment delivery, and allow recovery of instream physical conditions, leading to a gradual recovery of aquatic life uses, and attainment of instream standards specified in Basin Plan Chapter 4.13 by 2022.

E. <u>Facilities and Watershed Awareness</u>

The Dischargers will annually inform ski area employees of the location and purpose of ski area erosion control improvements and will encourage employees to report possible maintenance needs to supervisors and the facilities manager. The Dischargers shall submit a letter certifying completion annually by **June 30** each year.

F. Adverse Conditions

Pursuant to California Water Code Section 13267, the Dischargers shall immediately notify the Regional Board by telephone whenever an adverse condition occurs as a result of this discharge. Written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, a violation or threatened violation of waste discharge requirements, spills of petroleum products, toxic chemicals, sewage or sewage effluent; turbid or sediment laden plumes from the facilities entering surface waters, including wetlands; or damage to control facilities that could affect compliance.

G. Changes to Discharge

Any proposed change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Board at least 90 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances, all proposed expansion projects, increase in impervious surface coverage, or any change in drainage characteristics at the project site.

H. Changes of Ownership

The owners of property subject to waste discharge requirements shall be considered to have a continuing responsibility for ensuring compliance with applicable waste discharge requirements in the operations and use of the owned property. Any change in the ownership and/or operation of property subject to waste discharge requirements shall be reported to the Board. Notification of applicable waste discharge requirements shall be furnished to the new owners and/or operators and a copy of such notification shall be sent to the Board.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on July 9, 2003.

_____
HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. Facility Map
B. Standard Provisions for Waste Discharge Requirements

RE/cgT:Heavenly Ski UpdWDR Prop.doc

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

MONITORING AND REPORTING PROGRAM NO. R6T-2003-0032
WDID NO. 6A090033000

FOR

HEAVENLY SKI RESORT

El Dorado County and Alpine Counties

I. MONITORING

A. Water Quality Monitoring of Ski Area

1. Location of water quality sampling stations and sampling procedures

Heavenly Valley Creek-Hidden Valley Creek monitoring stations

a. Station HV-C1a (aka 43-HV3) – Heavenly Valley Creek, near Sky Meadows. Effects of upper mountain development on upper reach of largest tributary of Heavenly Valley Creek.

b. Station HV-C2 (aka 43-HV1) –Heavenly Valley Creek, near base of Patsy's. Effects of the ski area measured at bottom of developed area.

c. Station HV-C3 (aka 43-HV7) – Heavenly Valley Creek, at LTBMU property line, 0.4 miles upstream of Pioneer Trail. Determine water quality as it leaves the property at TMDL boundary.

d. Station 43-H5 – Hidden Valley Creek baseline station, just above the confluence with Trout Creek. Reference undeveloped stream.

California Base Area-Bijou Park Creek monitoring stations

a. Station HV-C4 – Bijou Park Creek below northwest corner of Saddle Road and Wildwood Avenue. Compliance with effluent standards, and effects of CA base area, parking lot, and ski run development.

Samples shall be taken in appropriate bottles which have been cleansed with a non-phosphorus detergent, and triple rinsed with stream water prior to collecting grab sample. Samples will be preserved in accordance with standard methods or approved EPA Methods until delivery to the laboratory for analysis.

2. Frequency of Water Quality Sampling

Dischargers shall sample each constituent at the frequency described in this section, except as noted in section I.A.3 (Constituents to be Monitored). The Dischargers need not sample waters that are covered by snow, or when the water is so low that a representative sample can not be taken, or when samples cannot be taken due to hazardous snow conditions. The Dischargers shall indicate in the monitoring report when and why samples could not be taken. When samples are not taken, the Dischargers should estimate the volumetric flow rate and stage if the creek is not snow covered and if such estimates can be made safely. The Dischargers shall record and report on weather conditions, including temperature and precipitation, for the time of sampling and for the previous day.

a. Heavenly Valley Creek/Hidden Valley Creek stations

Monthly, plus weekly during spring runoff period (typically April through July)

b. California Base Area/Bijou Park Creek stations

Monthly, between mid-July through mid-March, which represents the base flow condition. Bi-weekly (every 2 weeks) between mid-March through mid-July which represents the spring runoff period. At the beginning of snowmelt events with significant increases in discharge, samples shall be taken daily for the first two days, then weekly until the snowmelt period ceases. For storm events generating runoff from the Base Area, samples shall be taken daily for the duration of the event. All samples shall be taken at a time representative of parking lot runoff (e.g., mid to late afternoon on sunny days for snowmelt samples). Identify samples based on dominant flow conditions: storm runoff, spring runoff, snowmelt runoff, or baseflow discharges.

3. Constituents to be Monitored

All monitoring stations

a. Volumetric flow measurements at each station each time it is sampled
b. Total Kjeldahl Nitrogen as Nitrogen
c. Total Nitrate and Nitrite Nitrogen as Nitrogen
d. Total Nitrogen (Total Kjeldahl + Total Nitrate and Nitrite)
e. Total Phosphorus
f. Soluble Reactive Phosphorus

g. Total Iron (quarterly at each station, and also during storm and snowmelt events at California Base Area/Bijou Park Creek stations
h. Turbidity
i. Suspended sediment
j. Chloride (quarterly at Heavenly Valley Creek/Hidden Valley Creek stations, and for all samples at California Base Area/Bijou Park Creek stations
k. Specific Conductivity

In addition to constituents listed above the following constituents are to be sampled at the California Base Area/Bijou Park Creek stations

a. Oil and Grease
b. Total Petroleum Hydrocarbons (as gasoline range)
c. Ammonia (monthly and during snowmelt runoff)
d. Total Lead (quarterly, and during storm and snowmelt runoff)

4. Monitoring Component from California Base Area Assessment

New monitoring stations or modifications to methodologies, frequencies and constituents monitored at the California Base Area/Bijou Park Creek drainage may be approved by the Executive Officer after California Base Area Assessment, Interim Operations and Maintenance, or Facilities Retrofit plans are proposed and approved pursuant to Section II.D of the Waste Discharge Requirements.

B. Erosion Control and Facilities Maintenance Monitoring

Inspections shall be made by the Dischargers or a representative thereof on a monthly basis at all lodges, maintenance shops, parking areas, and roads within the Facility where the Dischargers engage in snow removal and deicing activities. Inspections shall also be made after large precipitation or snowmelt events that may result in channel erosion or sediment movement on slopes, or in substantial sediment accumulation in BMPs at or below the California Base area. The purpose of the inspection is to identify actual or potential erosion and surface runoff on the project site and to identify BMP maintenance needs so that corrective measures may be immediately undertaken.

Any erosion, surface runoff problems, wastewater disposal problems, or other adverse conditions which are found on the subject property shall be clearly described and the corrective measures proposed by the Dischargers shall be included in the monitoring report. In the event that no such problems are found on the property, a statement certifying this condition must be included for each monthly inspection.

Results of these inspections, focusing on identification of maintenance needs and the corrective measures taken, shall be reported quarterly. The Environmental Monitoring Program Annual Reports shall summarize and evaluate the results of these inspections and also report on longer term trends and larger scale maintenance needs.

1. Lodges, Maintenance Shops, Parking Areas and Roads

   At the base and day lodges, maintenance shops, parking areas, and roads within the Facility where the Dischargers engage in snow removal and deicing activities, the inspection shall include and note damage to:

   a. Drop Inlets

      1) Clogging by debris, ice, or sediment
      2) Runoff movement into the infiltration gallery
      3) Damage by vehicles or snow plow equipment

   b. Drainage Collection System

      1) Clogging by debris, ice or sediment
      2) Free movement of water through pipes, channels, and appurtenances
      3) Damage to drainage collection system
      4) Adequate energy dissipation

   c. Sediment Traps and Vaults

      1) Depth and volume of accumulated sediment in each chamber of traps, vaults, or galleries
      2) Date of last cleaning
      3) Presence and nature of sheen, foam, trash, or scum

   d. Erosion Control

      1) Healthy and productive vegetation
      2) Gully or rill erosion on slopes
      3) Sediment buildup at toe of slopes
      4) Vegetation damage by vehicles or heavy foot traffic

   e. Culvert Outlet

      1) Adequate energy dissipation
      2) Blockage of culvert outlet by sediment or other debris
      3) Removal of trash and debris from drainageway

f. Upstream drainage diversion structure

1) Structures in place
2) Structures operational – clogging by debris, ice or sediment

g. Spilled or improperly stored chemicals, paints, fuels, sealants, oils, greases, anti-freeze etc.

h. Sediment/sand build-up on parking lot or roads

i. Grease traps

2. Remainder of Ski Area

Inspections shall be made annually by the dischargers or representatives snow melts and the mountain becomes accessible. Damage to facilities, including ski slopes, roads, and revegetation areas, shall be recorded and corrective actions identified and implemented. Following each rainstorm event sufficient to produce significant runoff, the affected areas of the facilities shall be inspected, conditions recorded, and corrective actions identified and implemented. Dischargers shall record the implementation date for the identified corrective actions. A formal check list that includes the improvements listed below shall be developed to guide this process.

A weekly inspection shall be made of all project sites under active construction and the finding of the inspection recorded and necessary corrective actions implemented. The inspections shall include and note damage to:

a. Revegetated areas
b. Culverts at drainage crossings (all culverts > 36" should be inspected, at a minimum, annually)
c. Designated roadways
d. Adequate closure and control of use of closed roadways
e. Energy dissipators on culverts
f. Sedimentation basins/irrigation ponds
g. Rock-lined channels
h. Mechanical stabilization measures (e.g. Riprap and gabions)
i. Water bars
j. Water supply, sewer, snowmaking, and irrigation water lines and holding tanks
k. Unprotected soil piles
l. Infiltration trenches
m. Gully/rill erosion on slopes
n. Other erosion control and stormwater runoff facilities

Heavenly shall maintain and annually update a checklist of erosion control facilities as listed above to be used during the inspection and for reporting the results of the inspection. The checklist should include a date of inspection, inspector(s), problems noted, corrective measures taken etc. Areas that could not be inspected due to coverage by snow shall be noted on inspection report.

C. Annual Worklist – Heavenly

The Dischargers shall develop, on an annual basis, a list of major projects/corrective actions to be taken each summer which involves ground disturbance and may impact water quality for review by the Regional Board. This shall include but is not limited to:

1. Grading of existing runs
2. Tree removal of greater than 100 trees or any tree removal in SEZs
3. Installation of new erosion control facilities
4. Areas to be revegetated
5. New ski run construction
6. New road construction
7. Chairlift construction
8. Installation of snowmaking facilities
9. Other projects involving large scale disturbance

D. Snow Conditioning and Snowmaking Enhancement Monitoring

If snow-conditioning or snowmaking enhancement chemicals or other additives are used on ski slopes (including tubing runs, half-pipes, jumps, or terrain parks), a log of the following information shall be kept:

1. Location of application and type of material applied
2. Dates of application
3. Amounts of applications
   a) total pounds
   b) pounds per acre
4. Compositions of the snow conditioning or snowmaking enhancement chemicals or other additives

E. Deicers and Abrasives Application and Recovery Monitoring

1. Goals

   a. Improve application efficiency, to reduce quantities applied where possible.

b. Recover materials and prevent their discharge to surface waters to the maximum extent practicable.

c. Reduce the amount of total phosphorus and fines (particle size) from abrasives and deicers discharged to surface waters in the Lake Tahoe Hydrologic Unit.

2. For abrasives or ice control agents that the Dischargers apply on parking lots and roadways, the Dischargers shall record the following:

a. Location of the source for the material.

b. Types, physical properties, and chemistry of abrasives or ice control agents. Sampling and analysis methods shall be approved by the Executive Officer of the Regional Board, and shall be consistent with methods currently used within the Tahoe Basin by Caltrans and/or municipal NPDES permitees. Chemistry, durability, gradation and percent organic matter shall be determined from composite samples. The composite samples shall be taken from one stockpile that represents all deliveries from the originating source. Composite samples shall be taken from each new originating source. If the source remains the same throughout the year, composite samples are only required to be tested annually.

i. Ice control agents shall be analyzed for: total phosphorus, total nitrogen, total iron and percent NaCl.

ii. Abrasives shall be analyzed for: total nitrogen, total phosphorus, total reactive phosphorus, total iron, and percent organic matter

iii. Durability of abrasives.

iv. Gradation of abrasives

c. Quantity of ice control agents and abrasives used on Heavenly property and on CSLT streets. When the Dischargers apply deicers and/or abrasives on parking lots, base facilities, private roads, or City of South Lake Tahoe roads to the California Base area, the Dischargers shall keep a daily log and report a monthly summary of the following:

i. Location and dates of applications, including street names if applied within CSLT

ii. Amounts of each material applied daily, with subtotals for Heavenly property and CSLT streets

d. Quantity of material recovered from the roadways and BMPs differentiated by method of recovery. The Dischargers shall keep a daily log and report a monthly summary of the following:

i. Location and dates of maintenance, including street names if within CSLT

ii. Amounts of material recovered by maintenance activities

iii. Location of disposal facilities

F. Heavenly Valley Creek TMDL Monitoring

1. Monitoring on the following parameters related to Desired Instream Conditionsas listed in *Water Quality Control Plan for the Lahontan Region* (Basin Plan) Table 4.13-HVC-1 will be reported in the Environmental Monitoring Program Annual Report.

a. Volumetric flow and suspended sediment shall be monitored at the Heavenly Valley Creek/Hidden Valley Creek station locations and frequency identified above in Section I.A.1 and also reported in the Quarterly Water Quality Monitoring Reports

b. Pfankuch channel stability ratings of Heavenly Valley Creek and Hidden Valley Creek at least once every five years.

c. USFS Region 5 Stream Condition Inventory (SCI) full surveys at least once every five years with annual monitoring of cross-sections on Heavenly Valley Creek and Hidden Valley Creek

d. The Heavenly Valley Creek TMDL Bioassessment Monitoring Plan[1] identifies sampling methodology and initial sampling frequencies and locations for monitoring macroinvertebrate community health. In addition to previous monitoring, each of the five bioassessment monitoring sites will be sampled in 2003, 2006, and 2007, and are scheduled to be monitored in 2010 and 2011, 2014 and 2015, etc., on a two-year on, two-year off sampling frequency. The adequacy of this initial sampling frequency will be re-evaluated LTBMU and Regional Board staff no later than 2008.

[1] Incorporated by reference in U.S. Forest Service (LTBMU) Heavenly Valley Creek TMDL Bioassessment Monitoring Plan (2003)

LTBMU shall report on the status of sample collection and data analysis in the Environmental Monitoring Program Annual Report.

2. Monitoring related to Desired Hillslope Conditions as listed in the Basin Plan Table 4.13-HVC-2 will be reported in the Environmental Monitoring Program Annual Report.

   a. Annual reports on progress in meeting the Master Plan mitigation program schedules for implementing and maintaining BMPs for roads and ski runs. Dischargers will also report annually on BMP effectiveness and on the repair or construction of supplemental BMPs where BMPs were damaged or ineffective[2].

   b. Annual reports on progress in meeting mitigation targets for effective soil cover in the Heavenly Valley Creek watershed with overall cover rating is "good" or better using LTBMU evaluation criteria[3].

3. In addition to other requirements in this section, the Dischargers will conduct comprehensive reviews of progress towards watershed restoration and attainment of water quality standards, and identify needs for change through adaptive management programs. The first five-year environmental monitoring report, which includes a comprehensive evaluation of monitoring from 1995-2000, shall be submitted no later than **December 31, 2003.** The second five-year environmental monitoring report, which shall include a comprehensive evaluation of monitoring from 2000-2005, shall be submitted no later than **June 30, 2006**.

G. Mitigation Monitoring

The Dischargers shall report annually on the status of mitigation measures identified and required in the Master Plan EIR to mitigate for significant and potentially significant water quality impacts.

H. Facilities and Watershed Awareness

The Dischargers will annually inform ski area employees of the location and purpose of ski area erosion control improvements and will encourage employees to report possible maintenance needs to supervisors and the facilities manager.

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[2] Incorporated by reference in Tahoe Regional Planning Agency (TRPA) Draft EIR/EIS/EIS for Heavenly Ski Resort Master Plan (1995), pages 4.1-50 to 4.1-72 (CWE Soil Erosion Reduction Program) and Appendices H and I; TRPA (1996), pages 6.4-1 to 6.5-6 (Revised Mitigation and Monitoring Plan); and U.S. Forest Service (1998), Appendix G (CWE Technical Memorandum No. 1).

[3] Incorporated by reference in TRPA (1995) Appendix I, Road and Run Segment Mitigation Tables; Hazelhurst and Widegren (1998) pages 3.1 to 3.13 (on effective soil cover evaluation); and Hazelhurst *et al*., 1999, pages 3.1 to 3.7 and 6.3 to 6.7 (on effective soil cover evaluation).

The Dischargers shall submit a letter certifying completion annually by **August 1** each year.

II. REPORTING

The above data including sampling results and inspections, shall be submitted to the Board in accordance with the schedule described below (i.e. February 1, May 1, August 1, December 1). The discharger shall arrange and compile data in a concise form for quick review by the Board. In addition to a printed report, numeric data shall also be submitted in a mutually-agreed-upon electronic format.

Report	Frequency	Report Submittal Dates
Water Quality Monitoring of Ski Area	Quarterly	Feb 1, May 1, August 1, Nov 1 (for previous Q in WY)
Erosion Control and Facilities Maintenance Monitoring	Quarterly	Feb 1, May 1, August 1, Nov 1 (for previous Q in WY)
Deicers and Abrasives Application and Recovery Monitoring	Quarterly	Feb 1, May 1, August 1, Nov 1 (for previous Q in WY)
Environmental Monitoring Program Annual Report	Annually	February 15 (for previous WY/Construction Season)
Annual Mitigation Monitoring Summary Report	Annually	February 15
Annual Worklist	Annually	February 15
Facilities and Watershed Awareness	Annually	August 1
Snow Conditioning/ Snowmaking Enhancement Chemicals Monitoring	Annually	August 1
Comprehensive 5-Year Monitoring Reports	5 years	1st Report December 31, 2003, 2nd Report June 30, 2006, then every five years

In reporting the monitoring data, the Dischargers shall arrange the data in a tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to clearly illustrate compliance with the discharge requirements. All analysis shall be performed in accordance with the current edition of "Standard Methods for the Examination of Water and Waste Water", in a laboratory certified to perform such analysis by the California State Department of Health or the Executive Officer.

Monitoring reports shall also include the following information:

1. Name and telephone number of an individual who can answer questions about the report.

2. The Monitoring and Reporting No. R6T-2003-0032

3. WDID Number 6A090033000.

Ordered By: _____ Dated: _____
HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. General Provisions for Monitoring and Reporting
B. Heavenly Valley Creek TMDL Bioassessment Monitoring Plan

RE/cgT:Heavenly Ski UpdM&R (PROP)