

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

December 12, 2005

James Reynolds, Superintendent
Death Valley National Park
Death Valley, CA 92328

Subject: Draft Environmental Impact Statement (EIS) for Reconstruction of the Furnace
Creek Water Collection System, Death Valley National Park [CEQ #20050424]

Dear Mr. Reynolds:

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's (CEQ) NEPA Implementation Regulations at 40 CFR 1500-1508, and Section 309 of the Clean Air Act.

We have rated this Draft EIS as EC-2 – Environmental Concerns-Insufficient Information (see enclosed “Summary of Rating Definitions”). Our concerns are based on uncertainties associated with the discharge of reverse osmosis brine into the Furnace Creek Wash alluvium. The proposed project involves discharging more than 120,000 gallons per day of reverse osmosis brine to a percolation trench in Furnace Creek Wash. The discharge would contain much higher levels of dissolved minerals, such as arsenic, fluoride and boron, than naturally occurring groundwater in the Furnace Creek area. However, the Draft EIS is unclear regarding the potential impacts to water quality and flow conditions, how the discharge would be regulated, and measures to mitigate potential impacts. We recommend the Final EIS provide additional information on these issues. We also recommend several additional measures to minimize air pollutant emissions during project construction. Our detailed comments are enclosed.

We appreciate the opportunity to review this Draft EIS and request a copy of the Final EIS when it is officially filed with our Washington, D.C., office. If you have any questions, please call me at (415) 972-3988, or have your staff call Jeanne Geselbracht at (415) 972-3853.

Sincerely,

/s/

Duane James, Manager
Environmental Review Office

003553

Enclosures

Cc: California Regional Water Quality Control Board, Lahontan Region

**Furnace Creek Water Collection System Draft EIS
EPA Comments – December, 2005**

Waste Water Disposal

The proposed water supply project is expected to result in the production of more than 120,000 gallons per day of reverse osmosis brine. The reverse osmosis process will significantly concentrate naturally occurring minerals from the source water, and this brine will be discharged via a groundwater percolation trench in Furnace Creek Wash. The discharge would contain higher levels of dissolved minerals (such as arsenic, fluoride and boron) and total dissolved solids (TDS) than naturally occurring groundwater in the Furnace Creek area. The drinking water maximum contaminant levels for arsenic and fluoride are 0.01 mg/L (as of January, 2006) and 4 mg/L, respectively.

Additional information is needed to determine whether this discharge will affect downgradient water supply wells or otherwise endanger human health and to discern whether the discharge will require an Underground Injection Control (UIC) permit. Any discharge which causes an exceedance of the drinking water Maximum Contaminant Levels (MCLs) in the receiving formation could constitute a violation of the UIC regulations; see 40 CFR part 144.12. If there is infiltrative failure and there is discharge to the wash, it may be subject to Clean Water Act requirements.

The Final EIS should address the following questions and comments to provide a sufficient description of the proposed project and its potential impacts. Permitting requirements and mitigation measures should also be discussed.

1. Is the receiving water an Underground Source of Drinking Water? If the receiving groundwater or any underlying aquifers are of a quantity that could supply a public water system and contains fewer than 10,000 ppm TDS, then it is afforded protection under the Safe Drinking Water Act and the UIC regulation as an "underground source of drinking water."

Recommendation: The Final EIS should provide additional information regarding quality and quantity of the receiving formation, including depth to ground water, seasonal shifts, flow direction, and existing/potential downgradient uses. Please include a description of the hydrologic connection between the proposed percolation trench site and the Inn Tunnel irrigation well.

2. What constituents will be in the discharge? A complete list of the constituents and their concentrations anticipated in the discharge water is not provided in the Draft EIS.

Recommendation: The Final EIS should provide the projected concentrations of listed drinking water contaminants and any other toxics expected in the discharge, distinguishing those that originated in the source water from any contaminants that might have been added to enhance treatment or maintain the reverse osmosis unit.

3. How will the reverse osmosis plant be maintained? The Draft EIS does not discuss maintenance or cleaning of the reverse osmosis unit or indicate how spent chemical cleaners would be stored and disposed.

Recommendation: The Final EIS should describe how the reverse osmosis plant would be maintained and cleaned and identify the chemicals that would be used to clean the membranes. The Final EIS should also describe the chemical make up of the spent cleaning solutions, discuss how they would be stored and disposed, and identify measures to prevent and control spills of all chemicals used and/or stored in the reverse osmosis plant.

4. Will the discharge surface in Furnace Creek Wash or remain in the subsurface? Additional information is needed to determine whether any discharge could be expected to surface in the wash and be subject to Clean Water Act requirements.

Recommendation: The Final EIS should provide additional information to show the receiving formation's capacity to infiltrate 120,000 gallons per day, particularly during seasonal high water table periods.

5. Is the discharge going to be regulated? It is unclear from the Draft EIS how the discharge will be regulated.

Recommendation: The Final EIS should discuss whether the California Regional Water Quality Control Board will require a Report of Waste Discharge and issue Waste Discharge Requirements for this disposal. The Final EIS should also indicate whether this discharge would be accepted at a typical wastewater treatment plant or landfill?

6. Is the percolation trench an injection well? The Draft EIS does not sufficiently characterize the infiltration mechanisms for EPA to determine whether or not it could be subject to the UIC requirements. Given the depth and volume of the proposed trench system, it is likely that it would be classified as a "subsurface fluid distribution system," or Class V injection well in accordance with 40 CFR 144.3.

Recommendation: The Final EIS should provide additional information describing the percolation trench and its location relative to the seasonal high water table, nearest surface waters, and nearest downgradient monitoring well.

7. Are there any other options to infiltration or injection of the reverse osmosis fluids? Irrigation water is pumped at 300 gallons per minute at the Inn Tunnel irrigation well downgradient of the percolation trench.

Recommendation: The Final EIS should describe an alternative that pipes the brine directly to that well instead of discharging into the percolation trench, and discuss the potential beneficial and adverse impacts and necessary mitigation measures. The Final EIS should describe other treatment/discharge options that may be available. The Final EIS should describe other treatment/discharge options that may be available, and what environmental, regulatory or cost considerations make these options less desirable than infiltration.

8. Could the preferred alternative result in other water quality impacts? Additional pipeline information is needed to ensure protection of water quality in the project area.

Recommendation: The Final EIS should discuss how the National Park Service (NPS) will ensure that the pipelines used to convey the brine from the treatment plant to the percolation trench are severed from the potable water supply lines. The discussion should also address whether the water supply lines proposed to deliver reverse osmosis brines to the percolation trench will degrade or corrode as a result of change of use.

Air Quality Mitigation Measures

The Draft EIS indicates that project construction activities would generate considerable amounts of dust, including PM10 (particulate matter smaller than ten microns in diameter), primarily from ground disturbing activities and construction equipment. The Draft EIS estimates that, in addition to construction activities, the project would generate approximately 6,000 worker commute trips and truck delivery trips over the 12-month construction period. Tailpipe emissions from mobile and stationary equipment would include PM10, ozone precursors, carbon monoxide, and toxic air pollutants. Several effective mitigation measures to reduce construction air pollutant emissions are identified in the Draft EIS. Additional measures for reducing construction-related emissions exist and should be considered for inclusion in the project.

Recommendation: We recommend the following additional dust reduction measures be implemented during construction. The Final EIS should identify the additional measures that will be implemented and adopted in the Record of Decision (ROD).

- Use track-out elimination devices before entering paved public roads;
- Wash or vacuum-sweep paved public road surfaces to remove visible track-out;
- Visible emissions from all heavy duty off road diesel equipment should not exceed 20 percent opacity for more than three minutes in any hour of operation;
- Limit traffic speeds in the construction area and along access roads;
- Cover or apply soil stabilizers to disturbed areas within five days of completion of the activity at each site;
- Reclaim and revegetate disturbed areas as soon as practicable after completion of activity at each site; and
- Minimize construction-related trips of workers (encourage carpooling) and equipment, including trucks and heavy equipment.

Recommendation: We recommend that NPS implement best practices to minimize exhaust emissions from construction equipment. Some best practices are listed below. The Final EIS should identify the best practices that will be implemented and adopted in the ROD.

- Consider where appropriate particle traps and other appropriate controls such as specialized catalytic converters to reduce emissions of diesel particulate matter (DPM) and other air pollutants;
- Use diesel fuel with a sulfur content of 500 parts per million or less, or other suitable alternative diesel fuel, substantially reducing DPM emissions;
- Minimize construction-related trips of workers and equipment, including trucks and heavy equipment;
- Minimize construction equipment idling time by turning off engines when vehicles are stopped for more than a few minutes;
- Lease or buy newer, cleaner equipment (1996 or newer model);
- Employ periodic, unscheduled inspections to ensure that construction equipment is properly maintained at all times and does not unnecessarily idle, is tuned to manufacturer's specifications, and is not modified to increase horsepower except in accord with established specifications.