SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

For the

Searchlight Wastewater System Improvements
Clark County Water Reclamation District, Nevada
DRAFT

I. Introduction

This document adopts in part and supplements the *Environmental Assessment for the Searchlight Water and Wastewater System Improvement Project* finalized by the U.S. Bureau of Land Management (BLM) on April 28, 2009 (Attachment 1). The BLM's environmental assessment (BLM EA) disclosed the potential environmental impacts for the project associated with the following activities: (1) issuance of rights-of-way (ROW) by the BLM for drilling permanent groundwater production and monitoring wells; (2) issuance of ROW for construction of electrical utility; (3) construction of groundwater treatment facilities and an aboveground reservoir; (4) issuance of ROW for construction of a water conveyance pipeline system; and (5) construction of improvements to the Searchlight wastewater treatment facility (WWTF) and infrastructure enhancement for the town of Searchlight, Nevada. U.S. Congress authorized BLM to fund activities under (1)-(4) above and U.S. Environmental Protection Agency (EPA) to fund activities under (5) above. The Clark County Water Reclamation District (CCWRD), which operates the Searchlight WWTF, has amended the proposed project since the BLM EA was completed. The purpose and scope of this Supplemental Environmental Assessment (SEA) is limited to an assessment of the environmental impacts associated with the modifications made to the WWTF portion of this project (item 5 above) subsequent to completion of the BLM EA.

The proposal to improve the Searchlight WWTP has been modified in the following ways since completion of the BLM EA: (a) a reduction in the volume of WWTF treatment capacity from 0.50 mgd to 0.25 mgd and (b) an expansion to three mechanical proposed alternatives for WWTF instead of one mechanical proposed alternative (all three proposed alternatives fall within the same project footprint in the BLM EA). EPA hereby adopts the following portions of the BLM EA: the project's purpose and need (Chapter 1); the analyses of the project's design alternatives (Chapter 2), with the exception of page 25 description of the Searchlight Wastewater Treatment Facility (WWTF) proposed alternative; Affected Environment (Chapter 3); Environmental Consequences (Chapter 4), with the exception of a slight reduction of environmental impacts associated with a 50% reduction in the volume of WWTF capacity from 0.50 mgd to 0.25 mgd; List of Preparers and Contributors (Chapter 5); and References (Chapter 6).

II. Brief Description and History of the Project

The U.S. Congress provided funding for the Searchlight Water and Wastewater System Improvements Project in 2005 and 2006. Congress authorized BLM to fund Las Vegas Valley Water District for water improvements components and EPA to fund CCWRD for wastewater components of the overall project. Federal funding actions for these projects are subject to the National Environmental Policy Act (NEPA) of 1970 and compliance with this

law must occur prior to the award of Federal funds. BLM prepared the BLM EA as the lead agency to cover both Federal funding actions. EPA worked closely with BLM to ensure BLM complied with EPA NEPA regulations and the EPA funding action was accurately assessed in the BLM EA document. BLM released the BLM EA and issued a final finding of no significant impact. No comments were received.

CCWRD, after discussions with EPA, modified the proposed alternative described in the BLM EA. Modifications to the WWTF proposed alternative were developed because review of population growth assumptions led to a reduction in growth projections and because the applicant was interested in obtaining additional information through the 10% design phase prior to selecting the final type of mechanical WWTF.

III. EPA's Modifications to the BLM EA

EPA supplements the BLM EA by including three proposed wastewater system improvement alternatives instead of one (replaces page 25, Chapter 2 Alternatives Analysis in BLM EA dated April 28, 2009 describing one proposed alternative).

New SEA text:

All proposed wastewater treatment facility improvements would occur within the existing CCWRD property. A new, mechanical wastewater treatment facility would be constructed for biological nitrogen removal. The capacity of the plant could be expanded up to 0.25 million gallons per day with mechanical treatment processes. The CCWRD developed six treatment system alternatives through the preliminary design phase using the revised population growth assumptions. Of the six treatment system alternatives, three mechanical type wastewater treatment facilities were identified as preferred options.

1. Alternative 1 consists of using a conventional activated sludge (CAS) treatment process to replace the existing WWTF ponds. The CAS plant would have the following major components constructed as separate units: anoxic-oxidation zoned ditches, secondary clarifiers, and RAS/WAS pumping station. More piping will be installed between the process units. These units would be either in-ground or above-ground permanent facilities. The CAS plant would be designed to treat up to 0.25 million gallons per day (mgd) of average daily flow of wastewater. Since 0.25 mgd reaches the lower limit of the treatment flows for this process, the CAS plant could have a single treatment train, though the maintenance program may require constructing a dual train system. The maintenance program will be further evaluated during the design. The CAS treatment is a very stable reliable process suitable for remote operation.

2. Alternative 2 consists of using activated lagoon (AL) treatment process to replace the existing WWTF ponds. The AL alternative is an engineered pond treatment system with anoxic and oxic zones. The activated lagoon replaces the aeration basins, mixed liquor flow control structure and secondary clarifiers. The AL system has mechanical diffusers which create and maintain multiple treatment zones in the lagoon. The AL plant would be designed as a single process train to treat up to 0.25 million gallons per day (mgd) of

average daily flow of wastewater. The AL treatment is a very stable reliable process suitable for remote operation.

3. Alternative 3 consists of using Modular Plant (MP) treatment process to replace the existing WWTF ponds. Alternative 3 will also be evaluated during the design phase as a potential alternative for treating 0.25 mgd of waste water. This modular plant is a pre-designed treatment unit that will provide a conventional activated sludge treatment with biological nitrogen removal. Evaluation will include comparing two 0.125 mgd trains vs. one 0.25 mgd unit train. The advantage of the modular plant is a reduced capital cost due to standardization of design and manufacture, simplified construction, stable process, small footprint, ideal for smaller flows, and minimal operator intervention.

Plant effluent would remain on site. The existing facultative ponds at the WWTF would have the asphalt lining removed and would be converted into rapid infiltration basins (RIB). The existing RIB will remain. Treatment process upgrades may also facilitate recharge credit for the percolation of treated effluent, providing for more efficient water resource management for the Town of Searchlight. In order to protect the groundwater, the CCWRD and Nevada Division of Environmental Protection have set a goal for the effluent water quality not to exceed 10 mg/l total inorganic nitrogen for effluent that is percolated into the ground. All three alternative systems would be capable of fully nitrifying and partially denitrifying flows.

Supporting facilities would include an influent pump station manhole, headworks unit, and operations building. Screening and grit container units would be placed near the headworks unit. Treated effluent would be discharged into the existing 2.8-acre infiltration basin which would be cleaned. A second smaller RIB would be constructed for back-up. A new emergency basin would be constructed to serve as back-up for bypass wastewater stored during maintenance, emergency overflow, and emergency plant shut down. Existing primary (2.4 acres total) and secondary ponds (3.41 acres total) would be replaced by the treatment plant. Portable sludge dewatering unit would be brought in when necessary to remove sludge. A new sludge holding basin would be constructed to hold the sludge until it is hauled off-site for disposal to a certified landfill. Emergency back-up generator units would be installed on site. Other site improvements would include paved roadways, water lines, power lines, communication conduits, yard piping and a parking area. The existing security fence would be fitted with tortoise-proof fencing.

A construction trailer, equipment, and materials used for construction of WWTF would temporarily be located on the CCWRD property during construction. A Nevada Division of Environmental Protection's Bureau of Water Pollution Control's Temporary Discharge Permit and National Pollutant Discharge Elimination System Permit would be obtained for construction activities.

Previous text, now replaced by new text in SEA

BLM EA Description of Proposed Wastewater System Improvements Alternative DOI-BLM-NV-S010-2008-0225-EA April 28, 2009 N-84617 Page. 25, Chapter 2 Alternatives

The BLM EA descriptive text below is replaced by descriptions of three alternatives in the SEA. The BLM EA text is provided here so the reader knows what specific language is being replaced by the SEA:

> All proposed wastewater treatment facility improvements would occur within the existing Searchlight WWTF site. A new, mechanical wastewater treatment facility would be constructed for biological nutrient removal. The capacity of the plant could be expanded to 0.5 million gallons per day with activated sludge secondary treatment processes. This system would be capable of fully nitrifying and partially denitrifying flows. The target nitrate concentration in the treated effluent is 10 mg/L.
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> Plant effluent would remain on site. The existing facultative ponds at the WWTF would have the asphalt lining removed and would be converted into rapid infiltration basins. Treatment process upgrades may also facilitate recharge credit for the percolation of treated effluent, providing for more efficient water resource management for the Town of Searchlight. In order to protect the groundwater, the CCWRD and LVVWD have set a goal for the effluent water quality not to exceed 10 mg/l total nitrate.
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> The existing wastewater treatment facilities consist solely of facultative ponds. No power is currently required to run the system. Based on the CCWRD pre-design reports, the estimated energy requirements of the proposed WWTF is 416 kWh with a connected load of 520kVA and a power factor of 80%. More precise energy requirements cannot be identified until engineering design is completed.

IV. Environmental Impacts Associated with Modifications in Chapter 4 of BLM EA dated April 28, 2009

Modest decreases in the environmental impacts contained in Chapter 4 of the BLM EA dated April 28, 2009 may occur as a result of the reduced volume capacity design of the WWTF from 0.50 mgd to 0.25 mgd. Air quality, vegetation, cacti and yucca, invasive plant species, wildlife, special status species, sensitive species, visual resources, noise, and cumulative impacts may be slightly reduced as less construction material and associated activity will be required for each of the proposed alternatives.

FWS and BLM confirmed in writing on May 10, 2010 and May 26, 2010, respectively, that the Biological Opinion and BLM EA (attached) issued for the wastewater system improvement components of the larger project remain applicable to the modifications of the project and the SEA.