UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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Ref: 8EPR-EP

2/20/2015

Mr. Bill Damery
Utah Division of Water Quality
P.O. Box 144870
Salt Lake City, Utah 84114-4870

RE: Draft Approval 401 Water Quality Certification with Conditions for the Union Pacific Railroad Causeway East Culvert closure and associated mitigation

Dear Mr. Damery:

The Environmental Protection Agency Region 8 (EPA) has reviewed the draft Clean Water Act (CWA) Section 401 Water Quality Certification (WQC) for the permanent closure of the East Culvert of the Union Pacific Railroad's (UPRR) Great Salt Lake Causeway. The scope of this WQC focuses on the permanent fill of the East Culvert and the associated Compensatory Mitigation and Monitoring Plan (CMMP), and provides conditions to be included in the U.S. Army Corps of Engineer (USACE)'s pending CWA Section 404 standard individual permit SPK-2011-00755.

The EPA is providing comments on this WQC because the Great Salt Lake is an important ecosystem and so that monitoring and mitigation measures associated with this project are protective of the water quality and existing uses of this ecosystem. Great Salt Lake is an ecological resource of national and international significance, and a major economic driver for multiple industries. The construction of the causeway has already led to significant ecosystem changes in Great Salt Lake[1], and the permanent closure of the culverts further contributes to the cumulative loss of hydrologic connectivity. We believe that the special conditions in the WQC will provide additional assurances that the proposed mitigation does not lead to adverse effects to Great Salt Lake water quality and aquatic life uses.

In the CMMP, the UPRR proposes to construct a 180-foot-long bridge and an adjacent control berm (150 foot-long opening with and invert elevation of 4,183 feet). The proposed CMMP includes a five-year monitoring and adaptive management period to determine whether adjustments to the size of the

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[1] Gwynn, J.W. (2002) Great Salt Lake, Utah: Chemical and Physical Variations of the Brine and Effects of the SPRR Causeway, 1966-1996. In: Great Salt Lake: an Overview of Change, edited by J.W. Gwynn, Utah Department of Natural Resources.

Loving, BL, Waddell, K.M, and C.W. Miller. (2002) Water and Salt Balance of Great Salt Lake, Utah, and Simulation of Water and Salt Movement through the Causeway 1963-98. In: Great Salt Lake: an Overview of Change, edited by J.W. Gwynn, Utah Department of Natural Resources.

Jones, E.F., and W.A. Wurtsbaugh. (2014) The Great Salt Lake's monimolimnion and its importance for mercury bioaccumulation in brine shrimp *(Artemia franciscana)*. Limnology and Oceanography, 59(1): 141-155.

control berm need to be made to maintain existing (November 2012 baseline) cross-flow conditions and associated water quality endpoints.

The EPA has actively participated in the review and development of the CMMP, along with the Utah Division of Water Quality (UDWQ) and the USACE, with particular emphasis on appropriate performance standards and approaches to adaptive management. We appreciate the level of coordination among agencies in exploring how to best protect water quality while providing for the applicant's needs.

The EPA believes that the proposed CMMP would benefit from additional streamlining and flexibility in the initiation of adaptive management measures. As such, we have the following recommendations for the UDWQ to consider when finalizing the WQC special conditions.

Our main concern is that the CMMP includes several time-consuming steps between a salinity performance standard exceedance and the initiation of adaptive management. The steps outlined in the CMMP would take a minimum of 10 months to complete, meaning adaptive management would not occur for at least 16 months after salinity values are first reported to be outside the performance standard. Further, this timeline does not factor in the time it would take for USACE and UDWQ to review and concur with their updated model/impact assessment or adjustment proposal. The proposed bridge design includes a control berm that could be adjusted with relatively minimal effort or disruption to operations; therefore, the CMMP should provide for berm adjustments without undue assessment or delay if the salinity performance standard is not achieved and a rapid response is deemed necessary. We believe that the special condition requiring a 45 day turnaround for water quality monitoring reports (Condition 4e) will help to streamline the process and reduce undue delays. We recommend the State also consider a condition that acknowledges the UDWQ Director's discretion to require adaptive management whenever performance standards are not met or the salinity values are adversely affecting aquatic life uses of the lake, particularly if UDWQ determines that more timely action would be needed to maintain water quality and aquatic life uses of the lake.

We recognize the need to update and calibrate the salt balance model to determine whether the project contributes to changes in salinity and to inform adaptive management decisions. However, we are concerned that the CMMP is not clear that the intended goals of the salt balance model update do not extend to determining compliance with performance standards. Any updates to the model following exceedance of salinity performance standards would utilize monitoring data values that fall outside of the previously observed and modelled range. Thus it would not be appropriate to use this updated model for determining whether the project was meeting performance standards (i.e., duplicating the water and salt transfer as documented in November 2012). Use of an updated model with broader input data ranges would create a moving target of lake condition. We recommend the CMMP be revised to more clearly describe and limit the purpose of the proposed model update and calibration. Specifically, we recommend the purpose be revised to state that the sole purposes of the model update are to determine what contributed the salinity to be outside established range (e.g., abnormal precipitation event vs. the berm) and to determine the appropriate berm modifications for adaptive management.

As noted in the CMMP, the compensatory mitigation project must (1) replace the aquatic functions of the east and west culverts (transfer of water and salt) and (2) result in less-than-minimal effects on aquatic resources. It is the EPA's understanding that if either of these conditions is not met, then the

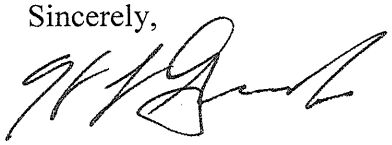
mitigation project is not performing as expected and adaptive management may be necessary. As such, an early evaluation of impacts is imperative to ensure that the second above criteria is being met. If at the time of the evaluation, there is determined to be a greater-than-minimal effect on aquatic resources, steps may need to be taken to avoid adverse ecological consequences. We appreciate the WQC condition (4c) that moves this assessment from its current place in the CMMP to immediately following two consecutive monitoring events where salinity performance standards are not met or when salinity values fall outside the historic, observed range. This placement provides greater assurance the project will not have adverse effects on aquatic resources. We recommend that the WQC condition clarify that results of this impact assessment will be provided in the subsequent quarterly and annual reports in order to provide timely information to the UDWQ and the USACE on the potential effects to the aquatic resources of the lake for informing adaptive management decisions.

We acknowledge that development of additional performance standards will be necessary when water surface elevations (WSE) fall below or rise above the WSE identified in the Historic and Modeled ranges in the CMMP. We recommend the State consider a WQC condition that directs the UPRR to coordinate with the UDWQ and resource agencies in developing these performance standards to ensure that proposed performance standards support the ecological resources of the lake. Particularly for low lake levels, extrapolated salinity values may be too high to support aquatic life uses, thus a simple extrapolation of historic/modeled values may not be the most appropriate way to develop additional performance standards.

Given the relatively short timeframe covered by the CMMP, a long-term management plan will be critical for ensuring the maintenance and protection of the existing uses of the lake. As such, we appreciate Condition 4b, which requires the development of a Memorandum of Understanding (MOU) for coordinating long-term management once the UPRR monitoring and adaptive management period ends. We recommend that the State provide additional information on the State's goals and intentions for the long-term management of the lake, as well as information on how this long-term management will be financed. We also recommend the State consider how this MOU could be used to develop a long-term management plan.

The EPA appreciates the coordination that we have had with you on this project, and look forward to engaging in further coordination, as necessary. Thank you for the opportunity to review this public notice. Please contact Julia McCarthy of my staff at mccarthy.julia@epa.gov or 303-312-6153 if you have any questions regarding these comments.

Sincerely,



Humberto L. Garcia, Jr., Director,
Ecosystems Protection Program

cc: Jason Gipson, USACE Bountiful Office