



State of Utah

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Department of  
Environmental Quality

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DIVISION OF WATER QUALITY  
Walter L. Baker, P.E.  
Director

FILE COPY

APR 10 2014

W. Bryan Dixon  
10 Heritage Cove  
Logan, UT 84321-3300

Dear Mr. Dixon:

Subject: Response to Comments Related to the Temporary Closure of the East Culvert of the Great Salt Lake Causeway, 401 Water Quality Certification No. SPK-2011-00755.


Thank you for taking time to provide comments on the 401 Water Quality Certification for the project referenced above. The Public Notice and Comment Period for this action proceeded from Thursday, December 12, 2013 through Wednesday, January 15, 2014. All of the comments received by the Division of Water Quality (DWQ) are posted on the 2014 Archive for our Public Notice website at:  
<http://www.waterquality.utah.gov/PublicNotices/pnarchive2014.htm#wqc>

For your convenience, we also included a hard copy of the comments and DWQ's responses in the attached document. This information is intended to describe how Utah's 401 Water Quality Certification program is configured and how this project will proceed.

Based on our review of the comments received in accordance with *UAC R317-15-5 & 6*, none of the comments were determined to warrant a major modification of the 401 Water Quality Certification for this project. The procedures for appealing this certification decision can be found under *UCA 19-5-112* and *UAC R317-6.5*.


The Division would like to thank you for the time and effort you made in compiling and submitting comments. We look forward to a continued dialogue with you regarding the future phases of this project that include additional public notice and comment periods.

Sincerely,

  
Walter L. Baker, P.E.  
Director

 Document Date 4/10/2014  
  
DWQ-2014-005238

WLB:bd:mc

B.D. 

Enclosure: Comments and DWQ Responses (DWQ-2014-004139)

File: 401 WQ Cert UPRR Temporary Closure  
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Utah Division of Water Quality Response to Public  
Comments related to the  
***Temporary Closure of the East Culvert of the Great  
Salt Lake Causeway,***  
401 Water Quality Certification  
No. SPK-2011-00755.  
December 16, 2013

The text of the comments are restated verbatim in italics. Some of the comments are broken into subparts for purposes of the Division of Water Quality's (DWQ's) response.

**Annetta Taylor**

Comment 1 (1.0)

*Dear Bill, Please pick up your phone to call New York, Louisiana, Mississippi and Alabama who have built huge bridges and freeways over large bodies of water, mostly salt water to find out how they do it.*

1.0 DWQ Response

As outlined in Utah Admin code (UAC) R317-15-1, the Water Quality Certification is to ensure that this project complies with water quality requirements. Union Pacific Railroad determines the specific construction techniques that are needed to comply with these requirements. No changes were made in response to this comment.

**Division of Forestry, Fire and State Lands**

Comment 2 (2.1)

*FFSL prefers a mitigation solution for the culvert closures to accomplish the following two purposes:*

*1) allow for circulation between the North and South arms of the lake:*

2.1 DWQ Response

The 401 Water Quality Certification requires that circulation between the North and South arms be maintained to meet water quality requirements. As noted in the December 16, 2013 "Approval of the 401 Water Quality Certification with Conditions" (Certification) Condition No. 5, the Monitoring and Mitigation Plan is required to include options for either increasing or decreasing the circulation between Gilbert and Gunnison Bays if the DWQ Director concludes that the circulation conditions prior to the closure of both culverts are not being maintained or water quality standards are not being met because of the culvert closure. No changes were made in response to this comment.

Comment 2 (2.2)

*2) provide for navigation between the North and South arms of the lake.*

2.2 DWQ Response

Providing for navigation between the North and South arms of the lake is beyond the scope of the 401 Water Quality Certification. However, as noted in Certification Condition No. 4, the Union Pacific Railroad (UPRR) must acquire all necessary easements to ensure they are able to build the bridge which should provide for navigation between the North and South arms. No changes were made in response to this comment.

## **Great Salt Lake Alliance**

### **Comment 3 (3.1)**

*Use this bad situation to require UPRR to correct the damage.*

### **3.1 DWQ Response**

The 401 Water Quality Certification ensures compliance with the water quality standards for Great Salt Lake (UAC R317-2). The Monitoring and Mitigation Plan required by Condition 5 is required to include options for adjusting the circulation between Gunnison and Gilbert Bays: “The plan will describe the mitigation options that could be implemented in response to findings of the monitoring. The options will at minimum specifically address options for either increasing or decreasing the circulation between Gunnison and Gilbert Bays if the Director concludes that the monitoring indicates degradation is occurring.” The commenter did not identify specific deficiencies in meeting these requirements and no changes were made in response to this comment.

### **Comment 3 (3.2)**

*Limit the time of “temporary” flow reduction from the North Arm and use this time to understand the permeability of the causeway and monitor impacts.*

### **3.2 DWQ Response**

DWQ concurs with this comment. The time allowed for flow reduction resulting from the closure of the east culvert is limited by the Level II antidegradation requirements. In summary, the basis for concluding that a Level II antidegradation review is not required for the proposed compensatory bridge is that the water quality will not be degraded by the project. This requires maintaining the water quality as of November 9, 2012, which is prior to closure of the west and east culverts. Certification Condition No. 2 requires that UPRR submit adequate justification to support that a Level II antidegradation review was not required for the time period prior to bridge construction because the water quality impacts would be temporary and limited (UAC R317-2-3.5.b.4.). Based on the information submitted by UPRR, the DWQ Director determined that Level II antidegradation review is required and notified UPRR on Feb. 25, 2014. The Level II antidegradation review will evaluate options for minimizing degradation of water quality prior to construction of the bridge. In accordance with the requirements of UAC R317-2-3, the least degrading feasible option will be implemented. The Level II antidegradation review includes an additional public notice and comment period. No changes were made in response to this comment.

### **Comment 3 (3.3)**

*Require a new and updated Salt and Water Balance Model for GSL as part of the Certification process.*

### **3.3 DWQ Response**

DWQ concurs with this comment. This is a requirement of Certification Condition No. 4 a. 1). No changes were made in response to this comment.

Comment 3 (3.4)

*Put a time limit on new bridge construction on the Causeway.*

3.4 DWQ Response

The conditions in this Certification, specifically the Level II antidegradation review, modeling, and monitoring (Conditions 3, 4, and 5), will provide the information necessary to determine if time limits are needed to maintain compliance with water quality standards (UAC R317-2). The Director has determined that Level II anti-degradation review is required for the potential degradation caused by the east culvert closure and prior to bridge construction. UPRR intends to submit the revised ADR by April 4, 2014. Based on this information, the Director will approve or disapprove the schedule for bridge construction in accordance with Condition 4.b. No changes were made in response to this comment.

**Morton Salt**

Comment 4 (4.1)

*UPRR should be required to show no adverse water quality impacts will result from its project as opposed to Morton, or anyone else, demonstrating that there is an adverse impact.*

4.1 DWQ Response

DWQ concurs and Conditions 2, 3, 4, and 5 of the 401 Water Quality Certification requires UPRR to demonstrate no adverse water quality impacts. The Certification requires an updated United State Geological Survey (USGS) Water and Salt Balance Model, Level II anti-degradation review, and water quality monitoring. No specific deficiencies were identified by the comment and no changes were made in response to this comment.

Comment 4 (4.2)

*Because UPRR is asking the Division to grant 401 Certification before it can demonstrate the impacts of the project, UPRR should understand the Division's need to implement more stringent monitoring and mitigation requirements and a constrained time frame in which to perform such monitoring.*

4.2 DWQ Response

DWQ is satisfied that the 401 Water Quality Certification requirements are sufficient to ensure compliance with water quality standards. The Certification requires modeling to project the potential impacts of the project and monitoring to confirm those projections. No changes were made in response to this comment.

Comment 4 (4.3)

*The Division's certification should take a precautionary approach instead of a wait and see approach.*

4.3 DWQ Response

The 401 Water Quality Certification requires the potential water quality impacts to be modeled (Condition 4) and monitoring to confirm the modeling projections (Conditions 3 and 5). The commenter does not note specific deficiencies or propose addition conditions for the Certification, so no changes were made in response to this comment.

Comment 4 (4.4)

*Division should require UPRR to do a Phase II anti-degradation review, which includes consideration of "social and economic losses that may result from the project."*

4.4 DWQ Response

DWQ concurs. As noted in Certification Condition No. 2, the UPRR was required to provide the Director with sufficient information to allow a determination to be made as to whether the impacts of the closure of the East Culvert are temporary and limited resulting or that the impacts are not temporary and limited resulting in a Level II anti-degradation review being required. The Director has determined that Level II antidegradation review is required. UPRR intends to submit the revised antidegradation review by April 4, 2014. Per the Level II antidegradation review requirements (UAC R317-2-3), UPRR is required to document important economic or social reasons for the degradation which may include avoidance of losses. No changes were made in response to this comment.

Comment 4 (4.5)

*UPRR's construction of the bridge should be a condition of the Division's certification and the Division should reserve the right to modify its certification based on UPRR's monitoring to include any measure that will insure the brine transfer between the north and south arms of the GSL is not adversely impacted.*

4.5 DWQ Response

DWQ concurs. The Certification may be modified by the Director at any time to meet state water quality standards. See Certification Condition No. 1, "The conditions in this certification may be modified by the Director in response to information received during the 30-day public notice period ending January 15, 2014, at 6:00 p.m. or any time thereafter in order to meet state water quality standards." See also Certification Condition No. 5 which provides the Director with the authority to approve or disapprove the Mitigation and Monitoring Plan or require additional mitigation to maintain circulation: "The plan will describe the mitigation options that could be implemented in response to findings of the monitoring. The options will at minimum specifically address options for either increasing or decreasing the circulation between Gunnison and Gilbert Bays if the Director concludes that the monitoring indicates degradation is occurring." No changes were made in response to this comment.

Comment 4 (4.6)

*The Division should make clear that UPRR will be required to mitigate any adverse water quality impacts the monitoring reveals, including the loss of bi-directional flows between the north and south arms.*

#### 4.6 DWQ Response

DWQ concurs. As noted in Certification Condition No. 5, the Monitoring and Mitigation Plan will include the "parameters to be monitored, the frequency of monitoring, and any proposed triggers for changing the monitoring plan or circulation conditions between Gunnison and Gilbert Bays shall be included in the plan. The plan will describe the mitigation options that could be implemented in response to findings of the monitoring. The options will at minimum specifically address options for either increasing or decreasing the circulation between Gilbert and Gunnison Bays if the Director concludes that the monitoring indicates degradation is occurring." No changes were made in response to this comment.

#### Comment 4 (4.7)

*UPRR should be required to post a bond to ensure it will perform the necessary mitigation that may be required to address adverse impacts of its project.*

#### 4.7 DWQ Response

DWQ does not have authority to require a bond from UPRR. DWQ has recommended that the United States Army Corps of Engineers (USACE) consider requiring a bond. No changes were made in response to this comment.

#### Comment 4 (4.8)

*The Division should impose a deadline for UPRR to submit its mitigation and monitoring plan.*

#### 4.8 DWQ Response

DWQ concludes that a deadline for submittal of the Mitigation and Monitoring Plan required by Condition 5 is unnecessary because immediate monitoring is required. If this monitoring indicates that water quality standards (UAC R317-2) are not being met because of closure of the culvert, the Director has the authority in accordance with Condition 1 to modify the Conditions. Condition No. 3 of the Certification required that within 30 days of the Director's signing the Certification, UPRR must submit an interim Monitoring Plan (Plan) including a Quality Assurance Project Plan for interim monitoring. This plan has been submitted and will be public noticed from March 13 through April 14, 2014. Monitoring is required under this plan until the Mitigation and Monitoring Plan outlined in Condition No. 5 is approved by the Director. Further the UPRR must begin interim monitoring in accordance with the approved Monitoring Plan by May 2014. If UPRR is unable to meet this deadline DWQ will conduct the monitoring and UPRR will reimburse DWQ. No changes were made in response to this comment.

#### Comment 4 (4.9)

*UPRR should be required to annually report its finding regarding the project's impact to flow and salt transfer between the north and south arms.*

#### 4.9 DWQ Response

DWQ concurs. UPRR is required to report its monitoring results annually. See Certification Condition No.3, "UPRR will submit an annual report, by January 1 of each year, which summarizes the monitoring results including all laboratory and field supporting quality control data for the previous calendar year of all data collected." The Mitigation and Monitoring Plan required by Condition 5 will have a similar requirement. This plan will be public noticed for comment. No changes were made in response to this comment.

### **U.S. EPA, Region VIII**

#### Comment 5 (5.1)

*The Interim Monitoring Plan required by this WQC should provide a sound basis for the Interim Mitigation and Monitoring Plan required under the Corp's NWP 14 special conditions.*

#### 5.1 DWQ Response

DWQ concurs. The USACE, DWQ, and the UPRR have agreed that the Interim Monitoring Plan required by Condition 3 will serve as a sound basis for the Final Mitigation and Monitoring Plan required by Condition 5. Both plans have additional public notice and comment opportunities. No changes were made in response to this comment.

#### Comment 5 (5.2)

*We encourage the State to consider inserting a deadline for the submittal and finalization of the Mitigation and Monitoring Plan (Condition 5) to ensure that the impacts of this closure are indeed temporary, and final mitigation option is implemented in a timely manner.*

#### 5.2 DWQ Response

DWQ concludes that a deadline for submittal of the Mitigation and Monitoring Plan required by Condition 5 is unnecessary because immediate monitoring is required. If this monitoring indicates that water quality standards (UAC R317-2) are not being met because of closure of the culvert, the Director has the authority in accordance with Condition 1 to modify the Conditions. Condition No. 3 of the Certification required that within 30 days of the Director's signing the Certification, UPRR must submit an interim Monitoring Plan (Plan) including a Quality Assurance Project Plan for interim monitoring. This plan has been submitted and will be public noticed from March 13 through April 14, 2014. Monitoring is required under this plan until the Mitigation and Monitoring Plan outlined in Condition No. 5 is approved by the Director. Further the UPRR must begin interim monitoring in accordance with the approved Monitoring Plan by May 2014. If UPRR is unable to meet this deadline DWQ will conduct the monitoring and UPRR will reimburse DWQ. No changes were made in response to this comment.



**W. Bryan Dixon.**

Comment 6 (6.1)

*I have had very limited time to formulate comments and I reserve the right to amend and augment these comments at a later date.*

6.1 DWQ Response

The Utah Admin. Code (UAC) limits the comment period to 30 days unless an extension is requested and granted. However, the Certification provides several additional future opportunities for public comment. No changes were made in response to this comment.

Comment 6 (6.2)

*In the meantime, I support the comments provided by Friends of Great Salt Lake submitted today.*

6.2 DWQ Response

This comment was considered, but no comment response is necessary.

**Wayne Wurstbaugh, Utah State University.**

Comment 7 (7.1)

*Comment on Causeway Modifications and the Great Salt Lake's Deep Brine Layer. Initial 7 numbered points, Wayne Wurtsbaugh. December 13, 2013.*

7.1 DWQ Response

Prior to his comments Wayne Wurtsbaugh raised seven "points." Although DWQ does not necessarily agree with all of these "points" it has addressed his comments as completely as possible. No changes were made in response to these comments.

Comment 7 (7.2)

*The previous flows through the culverts not be used without question as the target for the flows for the new bridge.*

7.2 DWQ Response

The State regulatory requirement limits DWQ's authority to UPRR's action. temporary closure of the east culvert. Therefore, Condition No. 4 of the Certification appropriately requires UPRR to model and report potential water quality impacts from the closing of the East culvert as compared to the water quality as of November 9, 2012. Also, please see response to comment 3.1. No changes were made in response to this comment.

Comment 7 (7.3)

*If the second culvert is closed, managers should utilize the interim period before bridge construction as an experiment to understand flow dynamics and the response of the biota in the south basin.*

### 7.3 DWQ Response

DWQ concurs that monitoring data after the culverts were closed are critical to informing the design of the compensatory bridge. Both the east and west culverts are currently closed. UPRR has submitted an interim Monitoring Plan and is out for Public Notice and Comment through April 14, 2014, in compliance with Certification Condition No. 3. No changes were made in response to this comment.

### Comment 7 (7.4)

*Managers recognize that the hydrology of the lake change and that they need to be able to adapt to those changes. For example, global warming will very likely influence runoff to the Great Salt Lake. Likewise, water development in the basin may well reduce flows to the lake. Expansion of mineral ponds will also change the hydrology. Managers must be adaptable to these changes to properly manage the lake.*

### 7.4 DWQ Response

DWQ concurs. The modeling required by Condition 4 will include different hydrologic regimes of higher and lower lake levels. The Monitoring and Mitigation Plan required by Condition 5 is required to include options for adjusting the circulation between Gunnison and Gilbert Bays: “The plan will describe the mitigation options that could be implemented in response to findings of the monitoring. The options will at minimum specifically address options for either increasing or decreasing the circulation between Gunnison and Gilbert Bays if the Director concludes that the monitoring indicates degradation is occurring.” No changes were made in response to this comment.

### Comment 7 (7.5)

*The new structure that is constructed should allow managers to adapt their management strategy. As stated in Null et al. (2012), “If the railroad causeway separating Gilbert and Gunnison Bays were updated with a control structure to manage the flow of water and salt, the causeway might be a management tool to maintain salinity, aquatic life, and industry. Salt lakes worldwide are vulnerable to changes in salinity from hydrologic variability as well as human alteration from regulation, land use, and climate change. A well-managed causeway could provide some resiliency from these changes.”*

*A structure that allowed controls of both surface and deep return flows would provide managers an important tool that hopefully could help mitigate some of the problems caused by the deep brine layer, or at a minimum, not make the situation worse.*

### 7.5 DWQ Response

DWQ concurs. Certification Condition No. 5 requires that the mitigation detail “at minimum to specifically address options for either increasing or decreasing the circulation between Gilbert and Gunnison Bays if the Director concludes that the monitoring indicates degradation is occurring.” No changes were made in response to this comment.

**Western Resource Advocates on behalf of Friends of the Great Salt Lake, Utah Waterfowl Association, Western Wildlife Conservancy, Utah Airboat Association,**

**Utah Chapter of the Sierra Club, League of Women Voters of Salt Lake, League of Women Voters of Utah, Bridgerland Audubon, Wasatch Audubon, and Utah Physicians for a Healthy Environment.**

Comment 8 (8.1)

*Although DWQ is not authorized by statute to hold such a bond, the Corps does have bonding authority and DWQ should request that the Corps makes a bond a condition of any decision to issue UP an individual permit to close the culverts permanently.*

8.1 DWQ Response

Please see the response to comment 4.7. No changes were made in response to this comment.

Comment 8 (8.2)

*While DWQ notes that the Certification is specifically tied to the NWP 14 permit SPK-2011-00755, provided that the conditions outlined in the Certification are met, the agency does not specify that UP will need to obtain a separate certification for the Individual Permit to be issued by the Corps for the permanent closure of the culverts.*

8.2 DWQ Response

A separate 401 Water Quality Certification for permanent closure of the east culvert is required by UAC R317-15. This rule establishes the procedures for applying for and processing State Water Quality Certifications. On December 13, 2013 the USACE published a Public Notice to accept comments on a 404 USACE Permit application from the UPRR to permanently close the East Culvert and construct a bridge. Under "Other Governmental Authorizations" of this Public Notice is a requirement for a 401 Water Quality Certification from the Utah Division of Water Quality. On January 7, 2014, UPRR made a separate 401 Water Quality Certification application for permanent closure of the East Culvert and Bridge Construction. No changes were made in response to this comment.

Comment 8 (8.3)

*It is therefore imperative that there be a time limit in the Certification specifying how long this "temporary" condition will be allowed to stay in place.*

8.3 DWQ Response

Please see response to Comment 3.2. No changes were made in response to this comment.

Comment 8 (8.4)

*While the Certification notes that the railroad is required to submit a schedule for construction of the bridge to the Director for approval, id. at 3, there is no timeframe attached to that requirement. This lack of specificity can also be found in the requirement that UP complete and review the modeling that will be used to determine possible water quality impacts of the closure of the culverts and construction of the bridge, or submit a final Mitigation and Monitoring Plan to DWQ Id. at 3. Such open-*

*ended requirements, without specific dates attached to them, gives the impression that this "temporary" condition could drag on for quite some time. It is especially troubling to read in the Certification that the railroad is required to "submit an annual report, by January 1 of each year, which summarizes the monitoring results...for the previous calendar year" as part of the "interim" monitoring requirements. Draft Certification at 2. Again, this suggests that monitoring and mitigation is years off. Plainly, a delay of this magnitude will undermine the Certification and will guarantee that the closure will have significant adverse impacts on water quality and beneficial uses.*

#### 8.4 DWQ Response

DWQ does not agree that the Certification will allow the project to "have significant adverse impacts on water quality and beneficial uses" for the reasons stated in the responses to comments 3.2, 4.5, and 4.8. No changes were made in response to this comment.

#### Comment 8 (8.5)

*Comment on Causeway Modifications and the Great Salt Lake's Deep Brine Layer, referencing Wayne Wurtsbaugh's December 13, 2013 letter.*

#### 8.5 DWQ Response

These comments are addressed in responses to Wayne Wurtsbaugh's comments in number 7 of these responses.

#### Comment 8 (8.6)

*However, DWQ must require UP to conduct a Level II analysis within a reasonable timeframe as a condition of this Certification.*

#### 8.6 DWQ Response

DWQ concurs. Please see response to comment 3.2. No changes were made in response to this comment.

#### Comment 8 (8.7)

*Given the historic and wide fluctuations in Lake level, and the unpredictable nature of those fluctuations, the minimum monitoring period should be extended to 10-years.*

#### 8.7 DWQ Response

The information to determine the duration of monitoring is currently unavailable and the final decision has been deferred until the information is available. The modeling required by Condition 4 includes assessing different lake levels. After 5 years (Condition 5), the outcome of the modeling in combination with the monitoring data required by Conditions 3 and 5 can be used to determine if modeling should continue. "UPRR will submit a report that documents the monitoring results and describes any long-term changes in flow and salt transfer associated with the project in relation to the beneficial uses of Great Salt Lake, Antidegradation policy, numeric criteria and narrative standards. The report shall describe UPRR's justification for cessation of monitoring in light of these findings." monitoring results and justification for the cessation of monitoring. If the Director

approves, the monitoring program may cease. If the DWQ Director disapproves, UPRR and DWQ will consider which aspects of the monitoring program shall continue and additional terms of monitoring." No changes were made in response to this comment.