

Wasatch Audubon Society
P. O. Box 3211
Ogden, UT 84409
February 25, 2010

Lonnie Shull
UPDES EIS Section
Division of Water Quality
Utah Department of Environmental Quality

Re: UPDES Permit #UT0000647, Great Salt Lake Minerals Corp.

Dear Mr. Shull:

These comments are offered on behalf of the members of Wasatch Audubon Society, who are residents of Box Elder, Weber, Morgan, and Davis Counties. We have a strong interest in the water quality in Great Salt Lake and its surrounding wetlands. Our most common activities are bird watching trips, and these often take place at locations along the eastern shores of the lake. We also embrace a mission to protect and enhance ecosystems in Utah for the benefit of people and the world's biodiversity.

Great Salt Lake has been the recipient of all sorts of human-produced wastes ever since permanent settlements began to line its shores. In recent decades though, the flow of pollutants into the lake has been reduced considerably, and we applaud the contributions of the Division of Water Quality to this progress.

In considering a permit for Great Salt Lake Minerals to discharge the bitterns flushed out of their east-side evaporation ponds into Bear River Bay, the Division's focus should remain on its mission to "protect, maintain and enhance the quality of Utah's ... waters for appropriate beneficial uses." In the case of Bear River Bay, those uses are recreation and "water-oriented wildlife including their necessary food chain", as noted in the "Fact Sheet and Statement of Basis" that accompanies the draft UPDES permit. The most important recreation at Great Salt Lake to us is bird watching, which fits nicely with the second use that warrants protection, the use by wildlife.

Bear River Bay supports a large and varied population of "waterfowl, shore birds, and other water-oriented wildlife". In fact it is the most productive bay in the Great Salt Lake in regard to waterfowl and other water birds. The communities of water plants that feed many of the water birds can grow there because the fresh water input keeps the salinity in the bay relatively low. If repeated discharge of tons of salts into the bay raises the salinity there too high, both uses will be severely impacted. Nevertheless the draft permit prepared by the Division permits discharge of these bitterns at eight locations in Bear River Bay with no limitations on quantity and few monitoring requirements.

Apparently the Division believes it is powerless to further regulate these discharges because the bitterns come from another location in the Great Salt Lake, which it equates

with coming from the same water body. However, we believe that Gunnison Bay and Bear River Bay are so different that they should be treated as separate water bodies.

The differences between Gunnison Bay and Bear River Bay are clear from the differences in plant and animal life supported, or not supported, in the two bodies. These arise from extreme physical/chemical differences and are well documented; one can also see it when flying over Great Salt Lake. The color difference is produced by algae adapted to very different conditions. Exchange of water or chemicals between the two bodies must be quite small and slow, or these differences would not persist. Thus they can be considered separate bodies of water.

Wasatch Audubon Society believes that the Division can and should protect Bear River Bay from discharges of material that threatens the plant and animal life there, including material that originates in Great Salt Lake Minerals' evaporation ponds and the water in Gunnison Bay. We would prefer that there be no measurable increase in the salt content of Bear River Bay, meaning that Great Salt Lake Minerals might have to return the bitterns to Gunnison Bay.

Alternatively, the Division could limit the quantity of mineral salts allowed in the discharge based on the level tolerated by the important parts of the food chain in Bear River Bay. The DWQ might consult the Division of Wildlife Resources or others familiar with the ecology of the bay. Important species include, but may not be limited to, sago pondweed (*Potamogeton pectinatus*) and widgeon grass (*Ruppia maritima*). The allowable quantity of salts would have to depend on the volume of diluting water entering the bay from the Bear River. This can be expected to decrease if Bear River water is diverted for municipal use, as is planned by the Division of Water Resources.

We have no specific comments about the discharge from Gunnison Bay at outfall 009, relying on the Division to determine whether that also needs to be restricted.

We also request that additional monitoring and reporting be required by any permit allowing the discharges in question. Details of the flow rates and durations of the discharges and periodic detailed analysis of the composition of the discharge will allow the Division and interested public to form better estimates of the extent to which the discharges alter the chemistry of Bear River Bay and affect its wildlife habitats.

There has been concern in the Division of Water Quality and among biologists about amounts of selenium and methyl-mercury in Great Salt Lake, and we share this concern. It has been suggested that conditions at the Willard Spur are particularly conducive to formation of methyl-mercury from any mercury that reaches there. To protect the health of waterfowl hunters, as well as of the birds themselves, the State should try to determine whether the process used by Great Salt Lake Minerals to concentrate salts also concentrates mercury and brings it where it can be more harmful. For this reason, we believe it would be helpful to require periodic tests, sensitive enough to detect small amounts of mercury, on the bitterns coming from (or contained in) Bear River Bay evaporation ponds, as well as on samples from other parts of the bay. Tests for selenium might also be appropriate.

In summary, we believe that the draft permit (No. UT0000647) for Great Salt Lake Minerals to continue to discharge from its evaporation ponds should be revised. We have presented some important changes for you to consider in this revision. Thank you for this opportunity to bring our concerns to your attention.

Sincerely,

Lynn Carroll, Conservation Chair
Wasatch Audubon Society