

Great Salt Lake Water Quality Studies

Selenium Program Update

November 6, 2006

Contracts with the two project laboratories LET and Frontier Geosciences were fully executed in August. The labs have been working on the backlog of samples collected through the summer and are now caught up. Data has been validated and distributed to the Principal Investigators and Science Panel for review. Data will continue to be received, reviewed and disseminated per the prescribed data validation process (see attached). "Surplus" samples from the selenium program will be archived at a new storage facility at Central Davis Sewer District. The attached SOP was developed with input from the PIs and Science Panel. All

CH2M HILL has been working with the Science Panel to simplify the selenium conceptual model developed by Bill Johnson (see attached). This simplified version will serve as the basis for the integration of data collected this year and facilitate discussion of a new water quality standard.

CH2M HILL has been working with DWQ and the Science Panel on a scope of work to develop a brief review of literature pertaining to selenium threshold values in birds. This will be used as the basis for discussion on November 30. The scope of work also includes integration of all data into the conceptual model and a final report for the 2006 sampling year.

Project work continues to follow the prescribed work plan. All workplans and data quality objectives are located on UDEQ's project website. The approximate location of sample sites is illustrated in the attached map. Below is a brief synopsis of progress made:

Project 1 – Birds

Project 1A - Shorebirds

John Cavitt completed all field work in summer 2006. He and his team will complete the cataloguing of nest card data soon. He received lab data in October. John should be able to complete his final report after lab analysis is complete.

Project 1B - Gulls, Overwintering Birds

Mike Conover and Clay Perschon completed all sampling activities for California Gulls in summer 2006. They received lab data in October. They completed the first round of eared grebe sampling in September (birds that just arrived to GSL) and will be collecting grebes again in November prior to their leaving the GSL. Mike should be able to complete his final report on California Gulls after lab analysis is complete.

Project 2 – Food Chain

Project 2A – Brine Flies

Wayne Wurtsbaugh completed all field work in July 2006. His objective was to develop methodology for sampling brine flies and periphyton in the benthic zone of the GSL and collect samples from three different habitats (stromatolites, sand substrate and mud substrate) at three different nominal depths (1, 3 and 5 meters). He sampled at 4 stations near egg island and 4 stations near Lee Creek and the KUCC outfall. He has lab results for most of his samples

although he is still waiting for results for 9 samples sent to the lab in October. Wayne should be able to complete his final report after lab analysis is complete.

Project 2B – Synoptic Survey

Brad Marden has completed eleven of twelve sampling runs. He anticipates completing the last sampling run prior to the November 29 science panel meeting. All samples are currently at the labs for analysis. We will likely not have data for this November science panel meeting. We have sent a number of water samples to Uzbekistan to determine composition of seston sampled (ie, what percentage is algae, bacteria, suspended sediment and what species of each?).

Project 3 – Selenium Loading

Monthly water samples continue to be collected at all sampling locations. Grab samples were collected from Morton Salt outfall in October. Dave Naftz has received water data from the lab. Real-time flow values for Lee Creek, Goggin Drain, Kennecott Drain, and N Fk Weber River NR West Warren are accessible from the USGS' website at:

<http://waterdata.usgs.gov/ut/nwis/current/?type=flow>

Project 4 – Selenium Flux

Bill Johnson and Dave Naftz continue to collect monthly water samples at four sites (different depths) on main body of GSL, along with water profile data. Sediment traps at three locations are serviced on a monthly basis and samples sent to labs. Thermistor strings (6 thermistors) are located at two of the sediment trap locations and are programmed to collect water temperature at approximately 10-minute intervals. A hydroacoustic “uplooker” unit was installed at the third sediment trap to provide information on the movement of the deep brine layer at five different cells and will provide us information on particle resuspension. Sediment cores were collected at three locations and have been sent to the lab for analysis. Sediment samples were collected at locations throughout the south arm and sent to the lab for analysis. Bill has received sediment and water data from the labs. Total dissolved gas surveys continue on a monthly basis.