

# GSL Science Panel



Minutes of Dec. 15, 2004 Meeting  
Presented to the GSL WQ Steering  
Committee  
January 11, 2005

# Presentations from Steering Committee Members

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## # Richard Bay, JVWCD

- # Duties and charges to Science Panel
- # Need to identify gaps and scope of work
- # Requested need to move forward quickly.

## # Mansuel Pearce

- # Need for good science in an efficient and planned way.

# Presentations from Steering Committee Members (cont'd)

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## # Leland Myers

- Need to include impairment of the beneficial uses as a part of the study.
- "Time doesn't drive science but science can drive time."

# Round Robin

## # Reason for Round Robin

- Identify best analytical technique
- Resolve variability of data currently available.
- Determine ability of laboratories

## # Splitting Samples

- Environmental Resource Associates, Arvada, Colorado

# Pulling the Samples

## # Depth

- 1 meter
- 7 meters

## # GSL Sampling Protocol

- Needs to be compiled and re-written
  - Lynn Hutchinsen, Kennecott
  - Dave Naftz, USGS
- We will filter in the field
- Do not acidify in the field [ERM]
  - 4 ml Ultra Pure Nitric Acid per Liter

# Round Robin Statistical Design

- # **Two Sample Locations**
  - 1 Meter and 7 meters
- # **Triplicate Samples from each location**
- # **Four Spike levels for each location**
  - 0.1 – 1.0; 1.0 – 5.0; 10-50; 50-100 ug/l Se
- # **Triplicates for each spike level**
- # **Spiking Levels Created by Random Generator**

Location #1 = Gilbert Bay - 1 meter depth							
Laboratory:	Laboratory Name			Method:	Describe		
Sample ID	Spike Level	Spike Value ug/L	Sample Number	Reported Value, ug/L	Cost	Sample Size, ml	
Sample #1	GSL	0.00	6		\$ -	250	
Sample #2	GSL	0.00	54		\$ -	250	
Sample #3	GSL	0.00	12		\$ -	250	
Spike #1a	0.1-1.0	0.64	64		\$ -	250	
Spike #1b	1-5	4.00	21		\$ -	250	
Spike #1c	10-20	11.00	25		\$ -	250	
Spike #1d	50-100	62.00	47		\$ -	250	
Spike #2a	0.1-1.0	0.64	18		\$ -	250	
Spike #2b	1-5	4.00	19		\$ -	250	
Spike #2c	10-20	11.00	12		\$ -	250	
Spike #2d	50-100	62.00	99		\$ -	250	
Spike #3a	0.1-1	0.64	64		\$ -	250	
Spike #3b	1-5	4.00	31		\$ -	250	
Spike #3c	10-20	11.00	10		\$ -	250	
Spike #3d	50-100	62.00	38		\$ -	250	
				Total	-	3.75 liter	

# Paper Presentation: William Adams, Ph.D.

- # "Derivation of a Chronic Site-specific Water Quality Standard for Selenium in the Great Salt Lake, Utah"
  - Conc. of Selenium in Kennecott outfall and Brine Shrimp decreases as a function of distance from the Kennecott outfall.
  - Evaluate the concentration of selenium in the brine shrimp (food source) where impairment to bird embryo begins.
  - Where does the concentration of the outfall equal that value and set that value as the chronic standard.

# Presentation by EPA

## William Wuerthele

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- # Specific criteria will be derived by adjusting national criteria by including a data set on indigenous species (Brine shrimp and brine flies)
- # Key issue: Tissue value will need to be translated to a water column value.
- # Discussion: Whole body or reproductive organs.

# Assignments to Science Panel Members

- # Skorupa: Data on brine fly and brine shrimp in California evaporation ponds.
- # Adams: Data on some of the species collected in the Great Salt Lake
- # Marden: Put together a "workshop" of experts to discuss on the life cycle and biology of the target species of *Artemia* and *Ephydra*.
  - Avian diet, behavior seasonal occurrences.

# Assignments, cont'd

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- # Moellmer: Finalize participating labs and ERA for commitment to participate and costs.
  - Letters & Contract
- # USGS and Kennecott are putting together the protocol for sampling waters from the Great Salt Lake.
- # Fairbrother: Will further discussion of toxic reference values.
- # Skorupa: Will discuss uncertainty in various approaches to toxic reference values.

# For the Next Meeting

- # Two day meeting: March 16-17, 2005
- # Presentations by panel members
  - Fairbrother, Skorupa, & Adams
- # *GSL Biology 101*
  - Don Paul
  - Gary Belovsky (Notre Dame)
  - Wayne Wurtsbaugh, et.al.

# For the Next Meeting, cont'd

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- # Approve sampling protocols
- # Approve initiation of round robin
- # Discussions:
  - What are we trying to protect
  - Do we now understand the dynamics of the biology and chemistry of the lake.
  - Define the boundaries of the lake.

# Project Expenditures

## # EPA \$15,000 Grant

- Laptop Computer: \$1650

- Carboys Sampling Flasks: \$350

## # Science Panel \$25,000

- Travel: \$492.94

- Sundries: \$17.48