September 2, 2015

Statement of Data Evaluation

To: Worthy Glover, San Juan Public Health;
Utah Department of Environmental Quality, Division of Water Quality

From: Craig J. Dietrich, Ph.D., DABT
Toxicologist
Utah Department of Health, Environmental Epidemiology Program

This statement is provided by the Utah Department of Health (UDOH) Environmental Epidemiology Program (EEP). It is a written summary analysis of San Juan River, UT river sediment data collected by the Utah Department of Environmental Quality on Saturday, August 15th, 2015.

Data were compared to screening values for human-health based effects (**Table 1**).

Screening values are taken from Agency for Toxic Substance and Disease Registry (ATSDR) comparison values (CVs) for soil when available. Those values can be found here: http://www.health.utah.gov/enviroepi/appletree/Soil_CV.pdf

When ATSDR values were not available, EPA Regional Screening Levels (RSLs) for residential soil were used. EPA RSLs can be found here: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/ressoil_sl_table_run_JUNE2015.pdf

Contaminants that do not exceed screening values are not considered to pose a risk of adverse health effects.

The current data set (collected 8/15/2015) can be found here: http://www.deq.utah.gov/Topics/Water/goldkingmine/samplingresults.htm

Results

None of the contaminants tested for exceeded soil screening levels. The highest San Juan River sediment sample values are included in **Table 1**.

Conclusions and Recommendations

As no contaminants exceeded established soil screening levels, the EEP currently finds that adverse health effects from exposure to San Juan River sediment is not likely to occur. As sediment variability for this system may continue to change, and based upon the EEP's evaluation of the most recent water sampling data (found here: http://www.deq.utah.gov/Topics/Water/goldkingmine/stateofevalu.htm), the EEP makes the following recommendations:

- Recreational users should carry their own drinking water and not rely on filtering or purifying river waters.
- Visitors to the river, especially in the case of children, are encouraged to minimize skin contact with dirt and sand along the river.
- People who come into contact with river sediment should rinse off promptly after contact and, as always, wash hands well with soap and water before eating.

Further evaluations and updated findings will be provided as new data is collected.

Table 1. Soil screening values and highest San Juan River sediment contaminant values.

Analyte	CAS#	Units	Highest Observed SJR Sediment Value 8/15/15	Health-Based Comparison Value (CV) for Soil	CV Type and Source
Aluminum	7429-90-5	mg/kg	14,600	50,000	Child Chronic EMEG
Antimony	7440-36-0	mg/kg	ND	20	Child RMEG
Arsenic	7440-38-2	mg/kg	3.2	15	Child Chronic EMEG
Barium	7440-39-3	mg/kg	297	10,000	Child Chronic EMEG
Beryllium	7440-41-7	mg/kg	0.566	100	Child Chronic EMEG
Cadmium	7440-43-9	mg/kg	0.239	25	Child Intermediate EMEG
Calcium	7440-70-2	mg/kg	16,900	-	No CVs available
Chromium	7440-47-3	mg/kg	13.9	250	Child Intermediate EMEG Cr(VI)
Cobalt	7440-48-4	mg/kg	4.23	500	Child Intermediate EMEG
Copper	7440-50-8	mg/kg	8.26	500	Child Intermediate EMEG
Iron	7439-89-6	mg/kg	12,100	55,000	Child RSL
Lead	7439-92-1	mg/kg	7.46	400	Child RSL
Magnesium	7439-95-4	mg/kg	3,810	-	No Screening Level Available
Manganese	7439-96-5	mg/kg	241	2,500	Child RMEG
Mercury	7439-97-6	mg/kg	0.00569	9.4	Child RSL
Molyebdenum	7439-98-7	mg/kg	ND	250	Child RMEG
Nickel	7440-02-0	mg/kg	6.67	1,000	Child RMEG
Nitrate+Nitrite	HZ2100-10-T	mg/kg	NA	-	No Screening Level Available
Nitrite	14797-65-0	mg/kg	NA	5,000	Child RMEG
Potassium	7440-22-4	mg/kg	3,140	-	No Screening Level Available
Selenium	7782-49-2	mg/kg	ND	250	Child Chronic EMEG
Silver	7440-22-4	mg/kg	0.0458	250	Child RMEG
Sodium	7440-23-5	mg/kg	393	-	No Screening Level Available
Sulfate		mg/kg	NA	-	No Screening Level Available
Thallium	7440-28-0	mg/kg	0.171	0.78	Child RSL
Vanadium	7440-62-2	mg/kg	26.7	500	Child Intermediate EMEG
Zinc	7440-66-6	mg/kg	33.1	15,000	Child Intermediate EMEG

RMEG: ATSDR Reference Dose Media Evaluation Guide
EMEG: ATSDR Environmental Media Evaluation Guide
RSL: EPA Regional Screening Level
NA: not assayed
ND: non-detect