Meeting Notes
Bonita Peak Community Advisory Group
October 24, 2019, 2:00—4:30 PM
San Juan College, School of Energy
5301 College Blvd, Farmington, NM

Introductions and Approval of Meeting Summaries

Peter, Marcel, Chara, Trevor, Jenna, John, Levi, Terry, Anthony, Parker, Brian, Melissa, Larry, Charlie, Paul, Ty

From audience: Alyssa, Norm, hydrogeologist, Mark Rudolph, Steve Austin

Discussion of the CAG's purpose and recent activities

Peter talks about CAG history of group. Part of CERCLA law and so how a CAG functions is stated in Superfund process. Animas River Stakeholders Group (ARSG) was around for 25 years or so working in the Silverton area and basin. ARSG closed its doors so CAG is now who is interacting with the many agencies in the district. Reads CAG mission.

This CAG is focused on the Animas River in CO – a move to limit the scope. That said, we recognize that downstream is important. Brief recap of what has happened in meetings since January. Notes that about 60 mine remediation projects were accomplished before the Superfund happened – which is a lot.

Approve September meeting summary: John has one correction – page 3, Tall Timber is the name of the resort. Melissa has a corrected version with 3 typos and a question from the audience related to agency interaction – sent to Ty. That can be added. Chara makes a motion to approve minutes with additions. Melissa seconds. All approve.

Issues in New Mexico related to metal loading:

- Water Quality in rivers
- Possible effects of metals in alluvial wells
- Metals in irrigated soils

Talon Newton. Hydrogeologist in Socorro. Part of state geologic survey and NM Tech. Involved in looking at groundwater in Animas Valley right after Gold King mine spill. Title: Geochemistry of the Animas River after the Gold King Mine Spill (GKMS), San Juan County, New Mexico. Also worked with Ethan Mamer and Stacy Timmons.

Initially studied over 100 water wells. Objective of study was to characterize hydrogeologic system in terms of recharge components, flow directions, and important hydrodynamic and geochemical processes. Also, to assess the impact of GKMS. Looked at groundwater levels and geochemistry. Sampled at various times of the year when irrigation and flow were at different points. Most of the wells are for irrigation. Groundwater is private domestic wells. Drinking water is from elsewhere. Found 3 different water level patterns: first type follows the river stage so hydraulically linked to the river; second pattern is related to irrigation and recharge

of aquifer due to irrigation (Peter asks about response time of recharge to irrigation, but data says it is a matter of weeks); third is winter recharge/ summer evapotranspiration where summer decline is related to vegetation drawing from the aquifer (only seen in a few wells in the area).

Gist is that water is either flowing into the river (gaining stream) or from the river (losing stream). Most of the area is a gaining stream, but there are a few isolated wells where wells are losing stream (Cedar Hill, Inca, and Aztec). Wells very close to the river do draw river water in when they are actively irrigating. Gain could be from irrigation ditches that are higher than the wells.

Downstream trends towards higher total dissolved solids and SO4. Tritium is higher close to the river and lower in regional wells (further from river). C14 also confirms that regional wells have older water. So, the water flows slowly through the Nacimiento formation and gathers Sulfate. What they find when modeling the water chemistry, their samples have from less than 1 to a bit more than 10% of groundwater and so most of the water recharge is from the river.

Secondary maximum contaminant level- non-enforceable guideline regarding cosmetic or aesthetic effects, high TDS and high SO4 are what they looked at for water quality. Manganese and iron are the only metals in high concentration. Aluminum also showed up in one regional well. Did not detect bad levels of lead, copper, arsenic, zinc, cadmium, and mercury – from samples taken a year after the GKMS.

Conclusions. No evidence of GKMS impact to groundwater quality. Due to geochemical conditions, impacts to groundwater quality are unlikely. However, contaminated river sediments in irrigation ditches may still pose a threat as the ditches are a large component of the recharge of the aquifer. Ongoing research is to continue monitoring and try to trace manganese and iron concentrations.

Kevin Lombard. NM State University. Monitoring Irrigation Ditch Sediment and Agricultural Crops to Characterize the Nature and Extent of impact from GKMS. They do sampling from soils of agricultural purposes. Historically, the lower Animas watershed was in apples and other crops. GKMS happened at height of harvest season which was an emotional blow. Many farmers switched from ditch water to well water (as described before) which is an inferior water source for crop production. Study looked at 9 elements in ditch, farm fields, and produce (alfalfa and pasture grass, corn, pumpkin, squash, and cucumber).

Results. In ditches: metals were lower in the bottom of ditch than sides. 8 of 9 metals were below EPA and NMED solid screening limits. Arsenic exceeded NMED level of 7.07. Ditch side was higher in arsenic than ditch center. Jenna points out that arsenic is high in soils around Durango, and Kevin responds that they have not teased out the pre and post GKMS levels and where it is coming from. Kevin says there is also a history of AS based pesticides in the orchards. Peter notes that arsenic is not high coming out of the mining district from their samples. Metals in irrigation water that are high include iron, aluminum, and manganese.

Looking at the alfalfa vs. vegetable fields and properties: the vegetable soil is higher in pH and sodium content. That makes it harder to uptake the micronutrients. Soils tend to better bind the metals. Arsenic varies within the field and they are looking at how it varies over time and with respect to water. Soils are well buffered from the Ca

content. Iron and manganese are unavailable in fields due to pH, so could use a chelating agent but that might mobilize more metals in the soil and have an overall negative effect. GKMS has added to knowledge of field chemistry because of the funds available to do this type of research.

Charlie asks about numbers on San Juan as opposed to Animas – higher in SJ. Will they look at this? Depends on funding. Other person asks if the numbers are approaching phytotoxicity levels. Answer is no but they are looking at that in corn as it is efficient in uptake of metals. Norm asks if 0.032 ppm lead in post-growing samples in San Juan river – he saw a person cleaning batteries near Fruitland years ago. They made the guy clean the site up. It is documented in the Daily Times - Benny Kling did the investigation. Anthony has heard similar stories of batteries. Anthony asks if samples were taken up or downstream – reply is probably downstream.

Steve Austin. Hydrologist for Navajo Nation EPA. Navajo Nation WIIN Act Projects. Doing surface water sampling on the San Juan. They did some sampling prior to the spill but have had a lot of funding since the spill. Water Infrastructure Improvements for the Nation Act passed in 2016. Section 5004 addresses GKMS recovery to collect water quality samples and sediment data, public access to, assist affected states, tribes and government with long term water quality monitoring, and additional program activities through 2021.

Using federal water quality standards that date to 1972. So, they looked at developing water quality standards that protect human health, crops and livestock. Also wanted to make it more site specific for this area. This should be complete by early December. Also wanted to look at local field and plant toxicity.

Had plant toxicity sites from Farmington from the Animas River, but mostly in NM. Found no exceedances of soil screening values for most metals. Found aluminum and manganese. Exceeded screening value in all soils (both high in the area). High metal concentrations did not correlate with significant effects on plant growth.

Sediment toxicity. Had 10 sites (SJ River, Hogback canal, Fruitland canal, Chaco river, and Mancos R,). Looked at toxicity to aquatic life and metals levels. Only one site had a high metal concentration that reached toxicity levels (for manganese). Peter asks if he knows if the pH was low? He says it is usually higher so would be surprised if low but does not know.

Next study is a fish tissue study. In a 2017 study, they looked at which metals are bioaccumulating, what are prevailing concentrations of metals and how they compare to human health screening values. Four sample sites from Hogsback to Bluff. Primarily catfish. Got 10 samples. Looked at 25 metals. Found 9 metals accumulated. Total mercury was the only frequently detected metal that was higher. But, mercury was lower than US EPA's tissue based water quality criterion. So, ok to consume fish periodically, but not routinely.

Next study will add trout and suckers, fewer metal types, maybe pharmaceuticals, and more fish samples. Also got funding for metal source tracking. Concerned about lead and arsenic. See spikes after storms. See more exceedances downstream. Peter asks if they are looking at coal plant influence. They are sampling below and above the

mines and plants. Not sure where metals are coming from. Other potential sources than BPMG include dumping, mining, and natural sources.

Other WIIN projects. Water quality monitoring in San Juan River watershed at 39 sites and looking at macroinvertebrates, water and sediment chemistry, and funding 7 of USGS continuous monitoring gauges. All will be posted online. Southern Ute Indian Tribes are doing an ethnographic study of BPMD area used by Utes looking at NM. This was discussed by prior speakers. Also, coring Lake Farmington sediment. And, agricultural outreach and communication project. Melissa May is involved in this. UT doing a Lake Powell core study and suspended sediment monitoring study (where metals may be in the water).

Peter asks NM people what they would like to see from BPMG site cleanup? Maybe minimize spills and blow outs. Let us know if you think of something as we can pass along. Paul asks if they can quantify and qualify the flow coming out of the mines and have a publication about which mines are doing what. Peter says that they have this information and ARSG has a spreadsheet that lists the metals by mine. Found about 32 mines accounted for about 90% of metal loading in Animas (after looking at about 200 adits). EPA used this data for their project. Charlie says from a Silverton perspective, there is a lot of data collecting going on here and maybe need a searchable portal for all of this material and maybe we should push this. Anthony says he is working with tribes and states to put into a central clearinghouse, and possibly taking a watershed approach. Can discuss after the new year when this is better flushed out. Steve says a useful thing is information such as Silver Wing as example, where can we find information on that and what metals were of concern. Currently you have to dig deep to find any information.

Paul says NM is most concerned about getting this type of data in a timely manner. Maybe CAG can put pressure to make it available rather than a month or so later. Not just test results but learning sooner than 48 hours. Anthony says that release was recognized 48 hours later either.

Release from the Silver Wing. Potential work on Little Dora and North Star

Anthony says they found out about the Silver Wing late on Wednesday. He and Terry looked at it the next morning. Terry says it appeared to be a deeper color of red. There was something evident and seemed very small. No different from a mudslide from Red Mountain. A casual observer would not know if it was an arsenic mine so difficult to judge. Terry knew it was not an arsenic mine.

Anthony says that agencies knew about Silver Wing on Wednesday night. Thursday, EPA put notification system in place (which includes Herald). Anthony got a call from Herald. Said it had discharged more than normal. Media blew it up with GKMS pictures in national news. More money was spent on this than was spent on BPMG site in last 5 months. Was a small event. No one saw the water discolored that anyone can tell. Was not detected on the sondes – Peter saw a tiny blip in the data but could have been some other background. Brian says there were not identifiable blips on any downstream sondes. Jenna asks if there can be Herald follow up articles. Herald did do that yesterday, but still characterized the incident as a spill, despite it possibly not qualifying as a 'spill'.

Public perception is out of control. It is especially difficult for farmers. Brian describes it as an overcompensation for under-sharing. Says that sensitivity to verbiage of 'spill' may be detrimental. He doesn't think that we as a CAG can improve reporting from reporters. We do have ways to communicate. Use this group as a resource and the people in the group. Between us, we can reach a lot of people. Levi says that getting reporter to use factual information is difficult and reporter regularly misrepresents facts. John suggests that EPA could take lessons from USFS 416 fire on managing the narrative. Second guy says that this is an important point for anxiety of agricultural people, especially in Navajo nation.

Financial Sub-Committee?

Potential to use WIIN grant on Little Dora and North Star Those mines are not in the BPMG as they are within the Silverton town limits. So, trying to address these sites as far as drainage.

Closure of Ben Franklin was not done with remedial action money.

Financial Sub Committee could be looked at for data management. Thinking about SWWCD. Melissa asks about CO Data Sharing Network. Problem according to Peter is getting data in shape. ARSG has their data on an excel spreadsheet to keep it simple.

Any interest on grant committee? Brian says we probably need more time to discuss.

Administrative Items

Sampling in Animas Canyon. Three samples have been taken so far. Also trying to get one below Elk Park. Still working on train getting us into Cascade with free tickets. John will help with that as he knows Al Harper. Ty points out that ride tickets should not be the barrier. They run specific days and Parker is working on that.

Meeting with WQCD on 303(d) list. Sent the letter. Peter talked to CDPHE person last week. The TMDL part does not go on the list. Next cycle may be a better time to address those TMDL's. This cycle is lower half of CO – in 2 years.

Long-Range Schedule- Silverton Planning Group on Nov. 7 all day with EPA. Will include CDPHE, CAG, EPA, Silverton. From 9-4 as a workshop followed by an evening public session. May or may not have a meeting before winter holiday. Charlie says he saw that CAG would have the public discussion – EPA would like that we and the planning group provide that information. Charlie says this is a short timeline for us to present something cogent. Anthony says we should receive information in the next few days and start talking about that amongst ourselves. We can interact with the community. Charlie says we should preface with a disclaimer of time to prepare. Peter says we should get information by Monday. Looks like most CAG members will attend.

Melissa asks that we also talk about monsoon weather is also a large source of metals. Also, we should look at erosion that may be affected by storms. So, look at erosion control in mines.

Future Agenda Items? *Specific plans for interim remedial actions, Mines with potential to release, CERCLA process, Terrestrial Baseline Risk Assessment, Sampling and data analysis, Groundwater inflows, Sunnyside's investigations of the Mayflower tailings ponds, Sludge management for Gladstone treatment plant, etc., Impacts of bulkheading*