Gold King Mine Spill Response
A Story of Communication, Cooperation and Collaboration!

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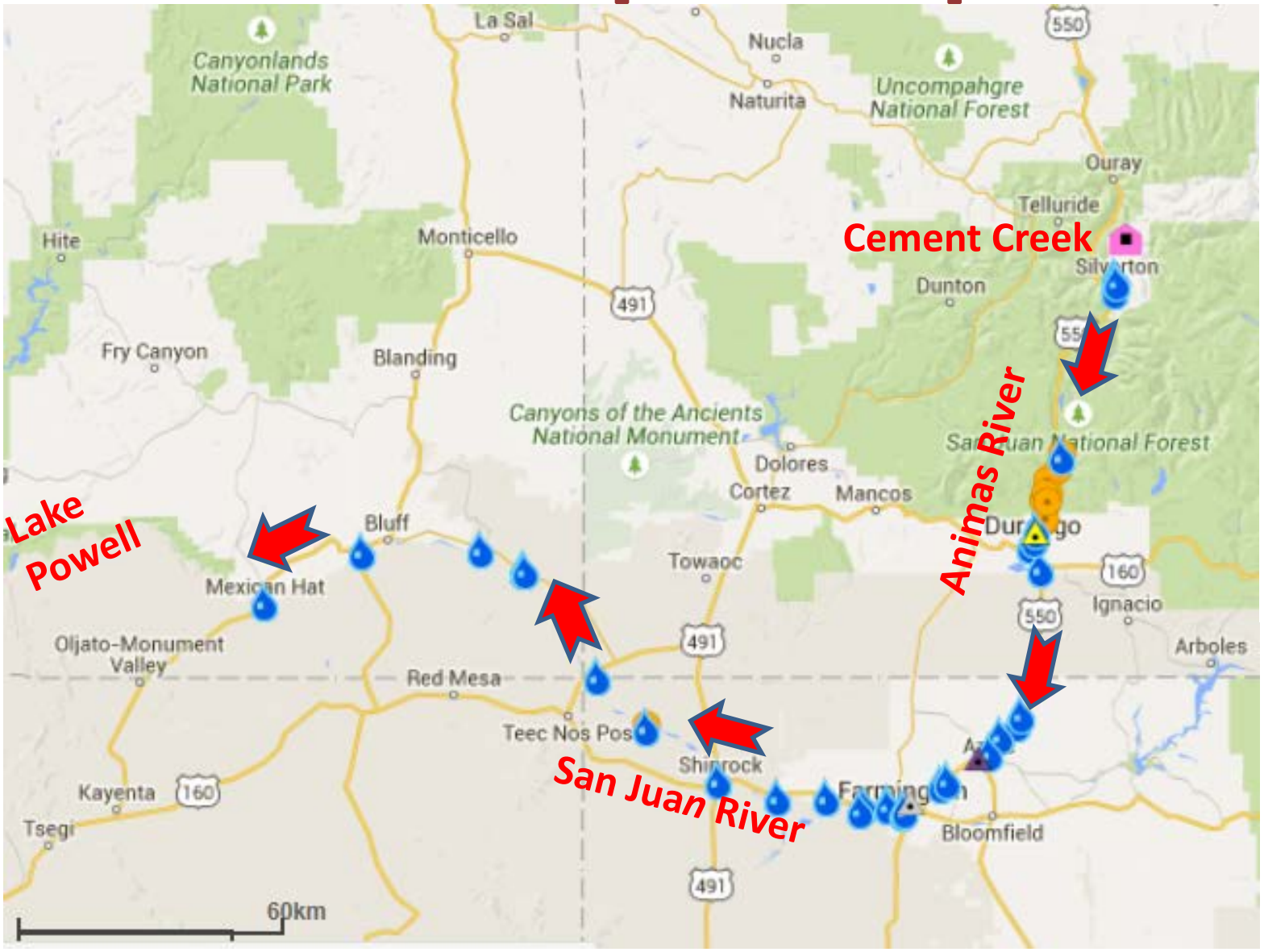
New Mexico's Response to the Gold King Mine Spill

June 9, 2016

Spill Map



EPA Operations

Release Location

Incident Command Post

- Region 6
- Region 8
- Region 9

EPA Sampling

Surface Water

Sediment

Executive Directives

Governor Martinez has:

- **Declared an emergency and authorized up to $750,000 in expenditures;**
- **Ordered NMED to lead the spill investigation; and**
- **Created a Long Term Impact Team consisting of NMED, NMDOH, NMOSE, NMDA, and NMDGF**

New Mexico's Response

The following New Mexico organizations are working together to protect public health, water quality and the environment.

New Mexico Department of Agriculture

NM STATE All About Discovery! New Mexico State University

New Mexico Water Resources Research Institute
A State-wide Consortium for Water Research, Education, and Outreach

The University of New Mexico

New Mexico Tech
Science · Engineering · Research · University

USGS science for a changing world

San Juan County New Mexico Since 1887

San Juan Soil and Water Conservation District

Initial Emergency Response

Aug. 5, 2015 – Spill triggered by EPA work crew

Aug. 6, 2015

- **NMED was notified of the spill by the Southern Ute Indian Tribe**
- **NMED advised public water systems to stop taking water from the river, and provided notice of the spill to public sewer systems, the Navajo Nation, Arizona and Utah**
- **NMED and OSE advised ditch users to close river diversions**
- **NMED technical team mobilized**

Aug. 7, 2015

- **NMED Secretary Flynn, State Engineer Blaine, and NMED technical staff arrived on site**
- **NMED began monitoring and water sampling**
- **NMED issued additional precautions for domestic wells and livestock watering**
- **NMDGF advised anglers not to eat fish caught in watershed**
- **Secretary Flynn authorized up to $500,000 in emergency expenditures**
- **NMED created a dedicated webpage for spill info and data**

Aug. 8, 2015

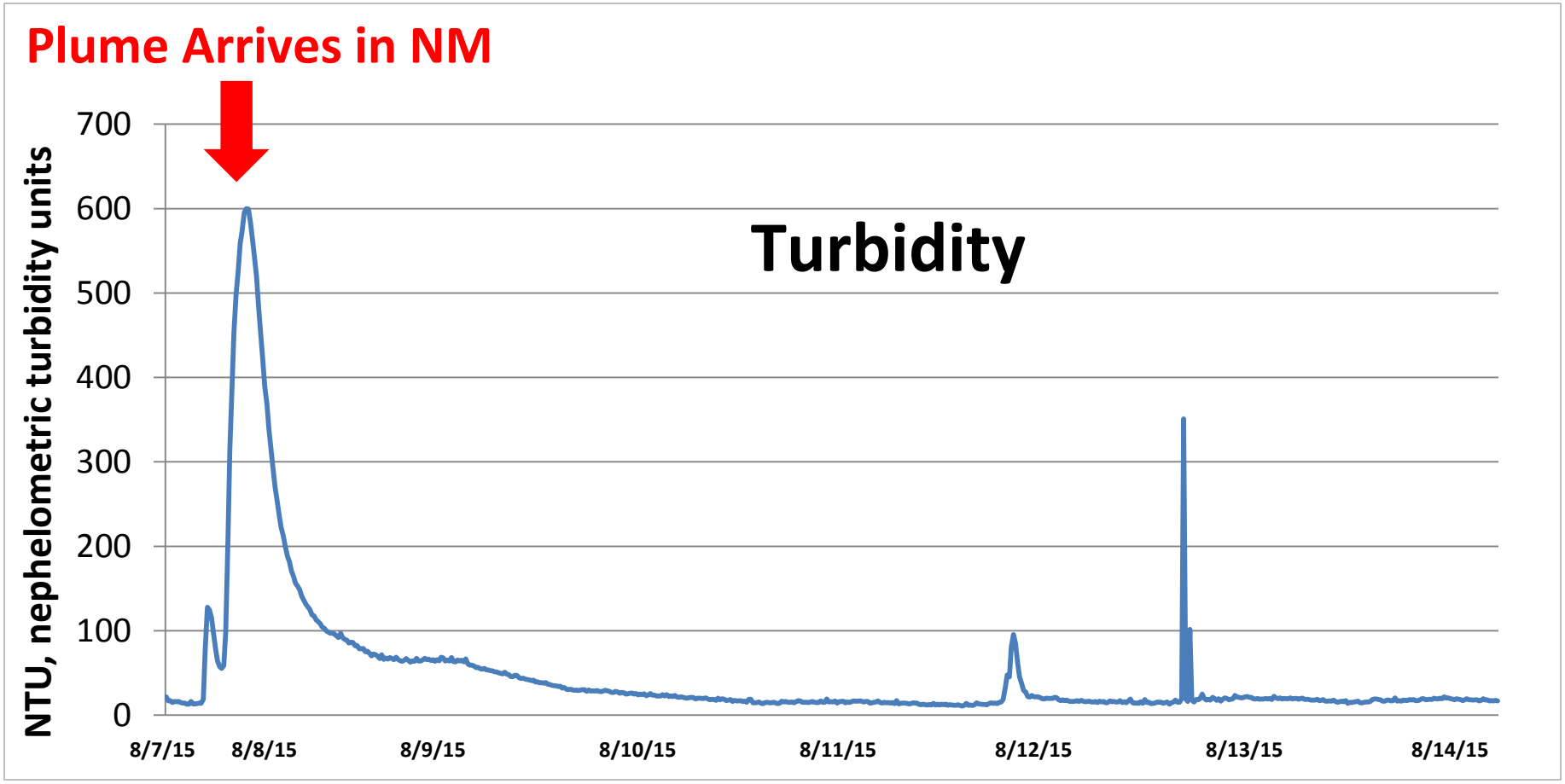
- **Contamination plume entered New Mexico**

Aug. 10, 2015

- **NMED had 25+ staff on site**
- **Governor Martinez declared an emergency and authorized up to $750,000 in expenditures**

Animas River near Aztec, NM

(above Estes Arroyo, NMED data)



Total Metals in Surface Water

Plume Arrives in NM

µg/L	Drinking Water Standard	8/5/15 Cement Creek	8/5/15 Animas in CO	8/7/15 Animas in N.M.	8/8/15 Animas in N.M.
Arsenic	10	8,230	1,080	ND	21
Cadmium	5	165	28	ND	ND
Lead	15	179,000	25,600	3	350

Total (unfiltered) metals in micrograms per liter (µg/L)
ND – not detected

Public Drinking Water Protection[1]

- **NMED was in daily contact with system operators to share information and provide consultation and assistance**
- **Intakes from the Animas River were closed prior to arrival of the plume**
- **NMED and water systems conducted extensive testing of public drinking water**
- **Water storage was calculated and water sharing efforts were initiated**
- **No customers received contaminated drinking water or lost water service**

[1] NMED has been granted primacy by EPA to administer the Drinking Water Program (NM Drinking Water Regulations, 20.7.10 NMAC). The Code of Federal Regulations Part 141 National Primary Drinking Water Regulations and Part 143 National Secondary Drinking Water Regulations are adopted by reference.

Private Domestic Well Protection

- NMED tested samples from ~580 private domestic wells during a Water Fair from Aug. 10-15, 2015; NMED provided test results to well owners
- NMED and U.S. EPA sampled 144 private domestic wells located within 500 feet of the Animas River for laboratory analysis; EPA provided test results to well owners
- No evidence that any private domestic wells have been impacted by the plume in N.M.

Erroneous EPA Statement

"We are certain that crops are safe for consumption. When the plume came through, irrigation ditches that impacted crops and livestock were shut down."

http://www2.epa.gov/goldkingmine/frequent-questions-related-gold-king-mine-response

Willett Irrigation Ditch

Farmington, NM
August 8, 2015

Irrigation Water Protection

- **Some, but not all, irrigation ditch intakes could be closed prior to arrival of the plume**
- **All ditches were flushed with river water for 12 hours, without irrigation diversions, to wash spill sediment back into Animas River**
- **Drinking water system intakes on the Animas River were not opened until after the irrigation ditches had been flushed**

Fish, Livestock and Wildlife Protection

- **No evidence of fish kills; caged fish survived immersion in colored river water.**
- **No evidence of unusual livestock or wildlife mortality.**

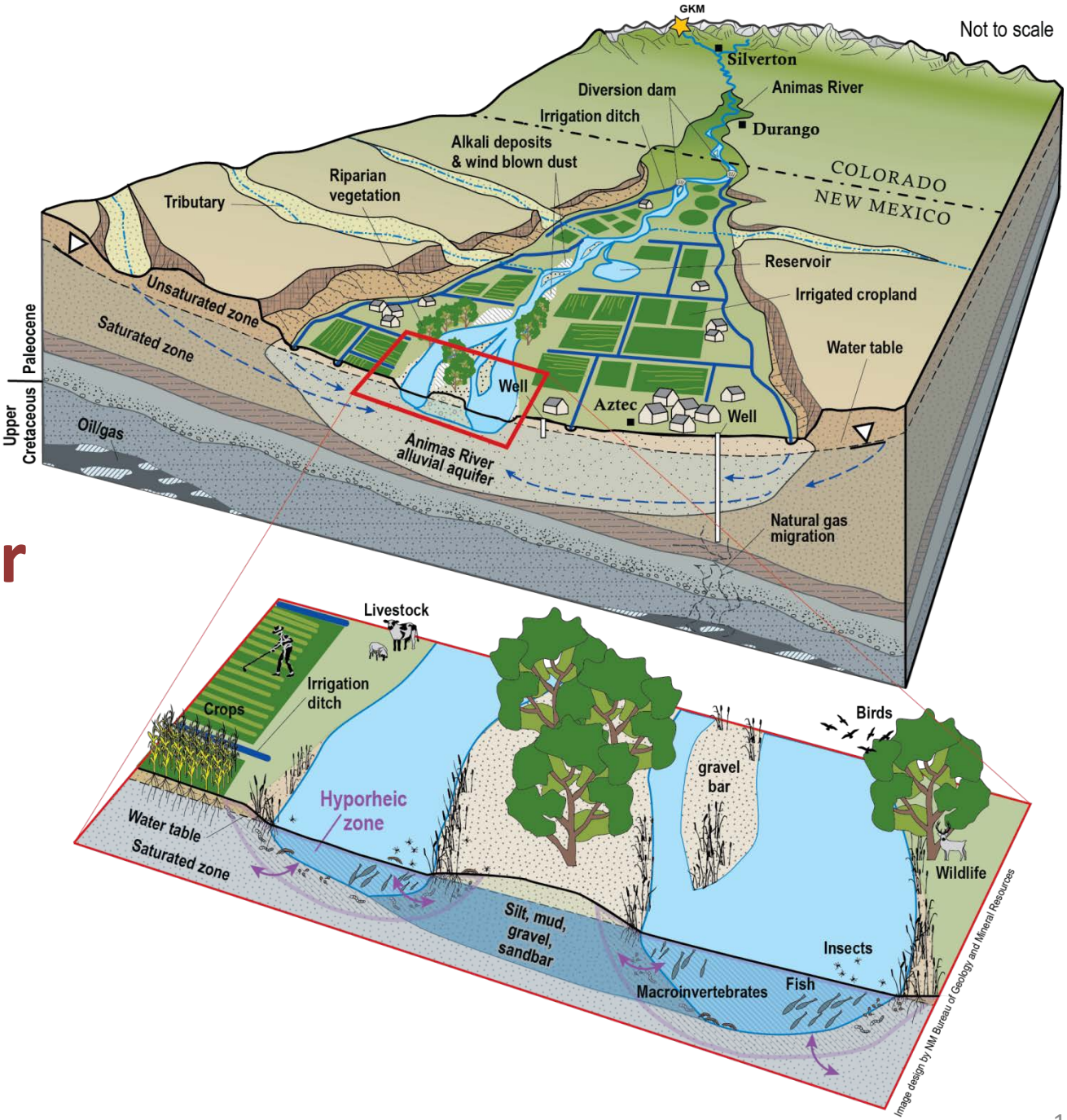
Contaminated River Sediment

Animas River
near Silverton,
March 7, 2016

Animas floodplain near Durango,
Feb. 18, 2016
3,100 mg/kg lead

Most of the 880,000 pounds of contaminated solids released by the GKM spill are believed to still be in the Animas River watershed in Colorado.

Animas River Watershed System



N.M. Long Term Monitoring Plan

- Public Drinking Water Systems
- Surface Water Quality
- River and Irrigation Ditch Sediment
- Soil in Irrigated Croplands
- Hyporheic Zone (where ground and surface water mix)
- River-Aquifer Hydraulics
- Private Domestic Wells Under Influence of Surface Water
- Airborne Dust
- Bio-Monitoring
  - Benthic, aquatic and riparian organisms
  - Fish tissue
  - Wildlife
  - Livestock
  - Crops
  - Humans