Dawson Gold Mine Surface Water Contamination Risk

From Proposed Zephyr Minerals Mine, Fremont County, Colorado

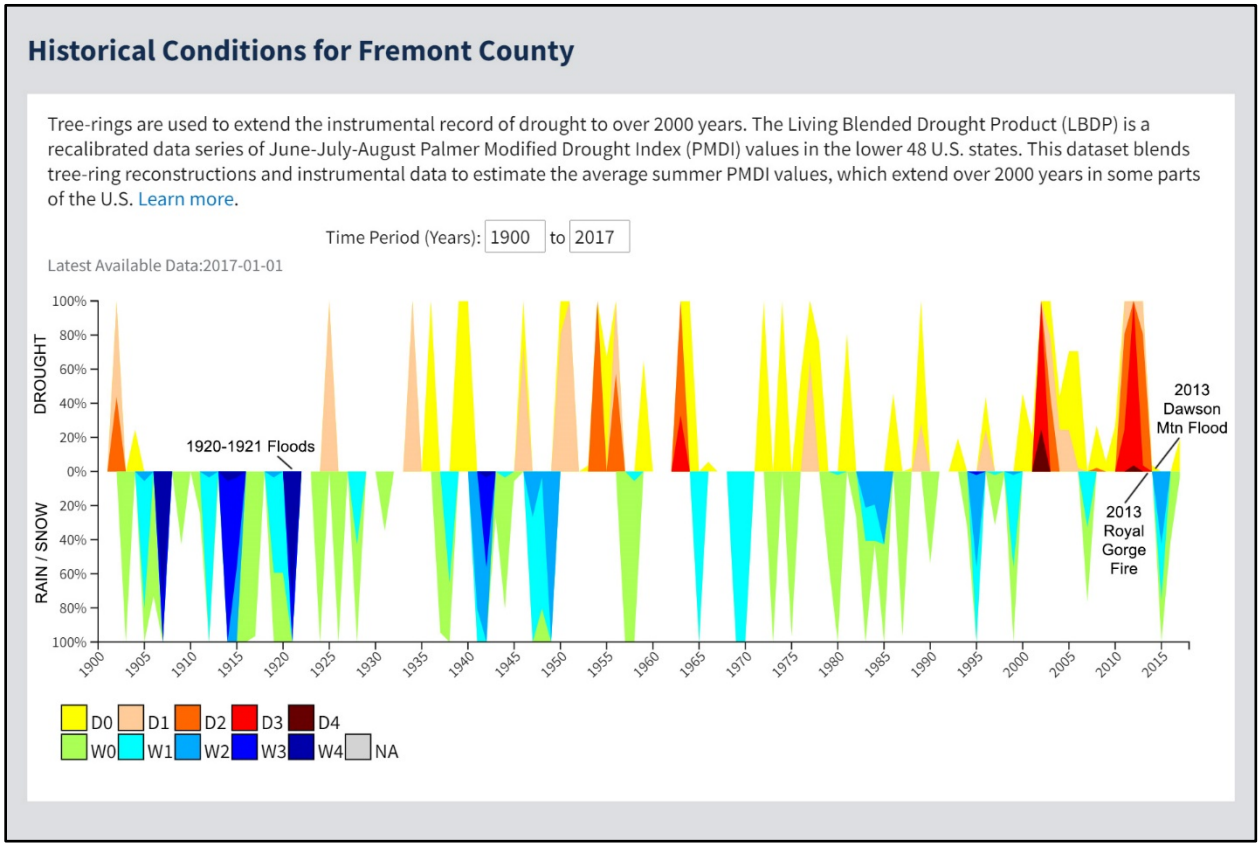
OVERVIEW

The proposed Zephyr Gold Mine lies in a valley below Dawson Mountain. The mining permit application submitted on June 30, 2021, describes "an underground gold mine and mill." The surface around the mine portal includes 81.98 acres of chemicals and explosives storage facilities, an overburden storage pile, a sedimentation pond, and operations.

The proposed mine lies within the watershed of Grape Creek. Drainage from Dawson Mountain runs through the middle of the proposed mining facility and into an existing wash that empties into Grape Creek, 2.5 miles away. A heavy rain event could wash contaminants from the mining site into Grape Creek. Roughly one mile downstream from this point, Grape Creek enters the Arkansas River. One-half a mile further downstream is the City of Cañon City Water Department (CCWD) water intake.

Since the mining operation is on land owned by Zephyr or private parties, no Environmental Impact Statement (EIS) has been conducted

HISTORICAL PRECEDENT



NOAA-National Integrated Drought Information System (NIDIS) at Drought.gov

Fremont County weather vacillates from severe drought to sudden downpours where dry washes become impassible torrents of water. So much has been written about the great Pueblo Flood of 1921 that few remember that Fremont County experienced seven flood events in one year. Rainfall on the low-permeable mountain rock cascaded quickly down the slopes. A couple of inches of rain over one to three hours produced extensive flooding.

HISTORICAL EVENTS Reported in *The Cañon City Daily Record*

September 2, 1920: Terrific rainfall in the mountains of western Fremont County washes out both railroad property and highways from Cotopaxi to Texas Creek. The Arkansas River rose 12 feet above the usual level in the Royal Gorge and five to six feet in Cañon City.

June 3, 1921: One of the biggest rainfalls in a generation visited the entire upper Arkansas valley from Salida to Pueblo. The government rail gauge maintained for the weather bureau of the Department of Agriculture showed that more than two and a half inches of rain fell between 1:00 p.m. and 4:00 p.m. The streets of Cañon City were turned into broad, shallow avenues of water. Skyline Drive was badly damaged.

June 5, 1921: Skagway dam broke, sending water to rush down on the Schaeffer dam on upper Beaver Creek, Penrose. Schaeffer dam collapsed, sending water into Pueblo. At Portland, a six-foot wall of water swept thru the town, flooding every store and dwelling.

July 15, 1921: Three inches of rainfall in a few hours in the mountains west of Cañon City did considerable damage to public highways, the D&RG track, and the water pipeline. The cloud burst occurred in the vicinity of Twin Mountains, Eight-Mile Park, and the Royal Gorge. Water came down from the top of the Royal Gorge with such rapidity as to cover railroad tracks to a depth of two to three feet. A literal wall of water came down Sand Creek taking out an 80-foot section of the city pipeline.

July 22, 1921: A cloudburst in the Greenhorns (including Dawson Mountain and Tanner Peak) south of Cañon City swept through Empire Zinc company *(north of today's Dawson Ranch)* with great force turning every creek, arroyo, and gully into a roaring torrent of water. From its western terminus to the far east of Lakeside Cemetery, Elm Avenue flooded one foot deep.

August 1, 1921: A terrific rainfall in the mountains northwest of Cañon City in the Currant Creek watershed washed away bridges. Water swept down the Arkansas, Sand Gulch, and Copper Gulch to the east portal of the Royal Gorge, sending a fourteen-foot wall of water into South Cañon City. It was the worst flood since 1909.

August 12, 1921: At Salida, a cloudburst sent Powder Gulch, usually a dry wash, on a rampage. Water was several inches deep in the railroad station. Cloud bursts near Cotopaxi sent a torrent down a ravine and covered the D&RG railroad tracks with mud and debris several feet deep. Near Florence, a flood came down Chandler Creek.

Two years later, on July 16, 1923, heavy rain swept about two feet of water through eastern Florence. When the crest of the flood in Sand Creek reached the town of Coal Creek, it was 20 feet high.

RECENT EVENTS

In recent years, three rainstorms on Dawson Mountain caused considerable flood damage to the communities below.

"On July 25, 2009, in Dawson Ranch, the rainfall measured 2.05 inches between 4:39 and 5:52 p.m. Another 0.07 had fallen by 8 p.m." *The Pueblo Chieftain*, July 26, 2009

In the summer of 2013, Dawson Ranch residents reported that six inches fell within 75 minutes, flooding basements and garages.

On July 23, 2018, a rainstorm on Dawson Mountain flooded the communities on the mountain's slopes. Wind speeds measured more than 90 mph before the power went out. Rainfall measured at a rate of approximately 5 inches per hour.

"Judy Repass, the chairperson for the Dawson Ranch Homeowners Association, said the destruction residents saw on July 23, 2018, was the same damage they sustained on July 25, 2009." *The Cañon City Daily Record*, August 11, 2018

A Dawson Ranch resident said, "I'm tired of these 100-year flood events happening every five years."

In 2018, the City of Cañon City used $214,731 from the Stormwater Fund on drainage repairs. In 2020-2021, an additional $1,081,074 was spent for a 30% improvement of stormwater drainage and holding ponds. The funds were approved because this type of weather event was likely to happen again.

July 23, 2018, Storm: View looking N/NW at Dawson Mountain from Wetmore, CO.
Courtesy Melissa Harris

July 23, 2018, a rainstorm produced flooding through a normally dry area

2020-2021 Drainage improvement project

FREMONT COUNTY PRE-DISASTER MITIGATION PLAN, January 2015
https://www.fremontco.com/files/emergency-management/010715hazardmitplan.pdf

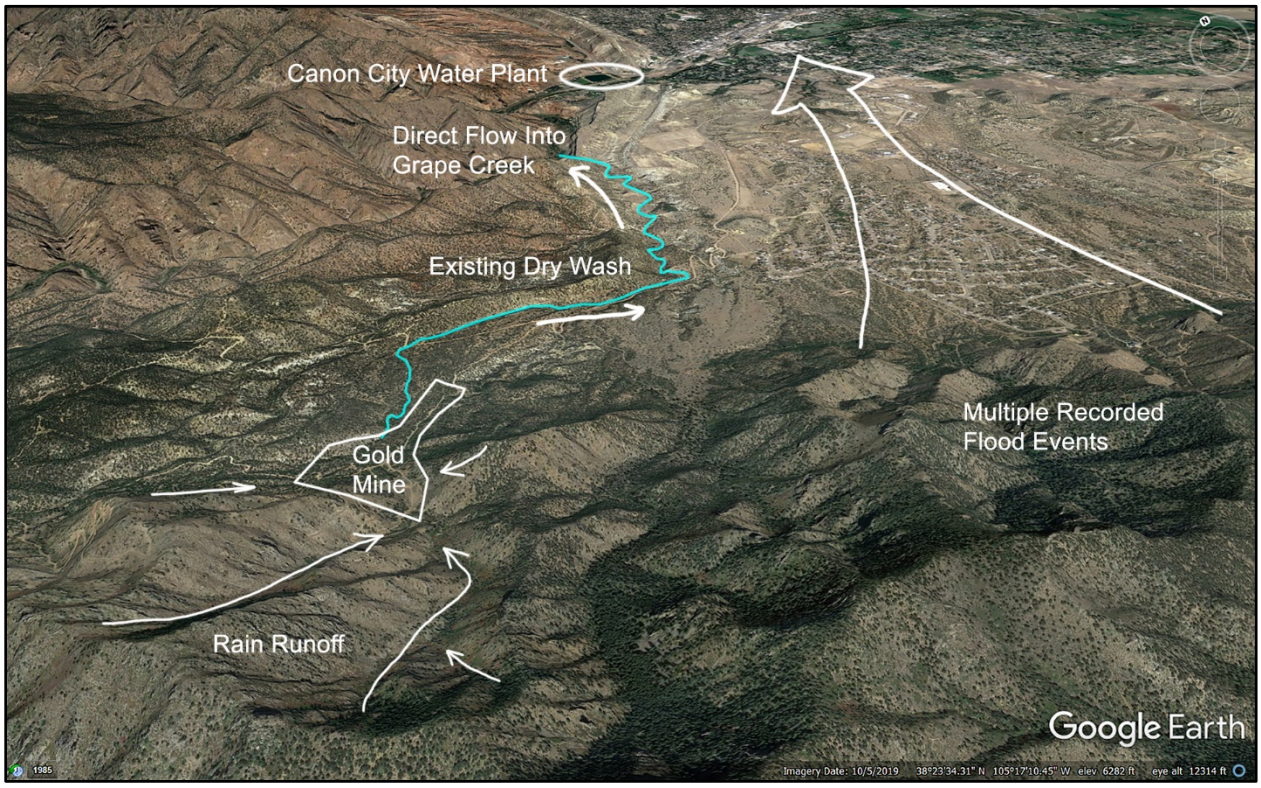
Section 11.9 ISSUES

- The major issues for flooding are the following:
- Flash flooding that occurs with little or no warning will continue to impact the planning area.
- The duration and intensity of storms contributing to flooding issues *may increase due to climate change.*
- Flooding may be exacerbated by other hazards, such as wildfires.
- *Damages resulting from a flood may impact tourism*, which may have significant impacts on the local economy

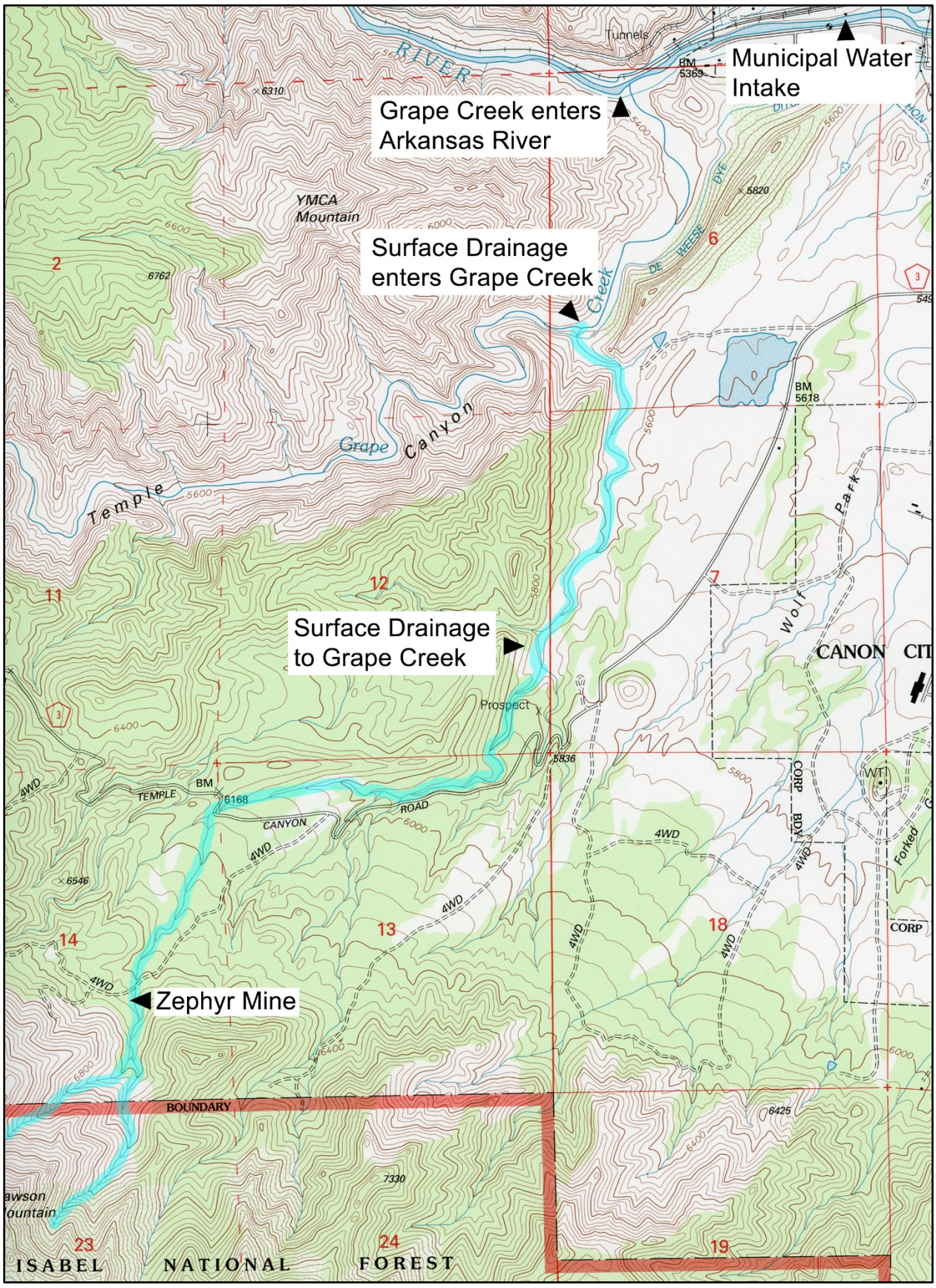
CONCLUSION

The proposed mine lies within the watershed of Grape Creek. Drainage from Dawson Mountain runs through the middle of the proposed mining facility and into an existing wash that empties into Grape Creek, 2.5 miles away. A heavy rain event could wash contaminants from the mining site into Grape Creek. Roughly one mile downstream from this point, Grape Creek enters the Arkansas River. One-half a mile further downstream is the City of Cañon City Water Department (CCWD) water intake.

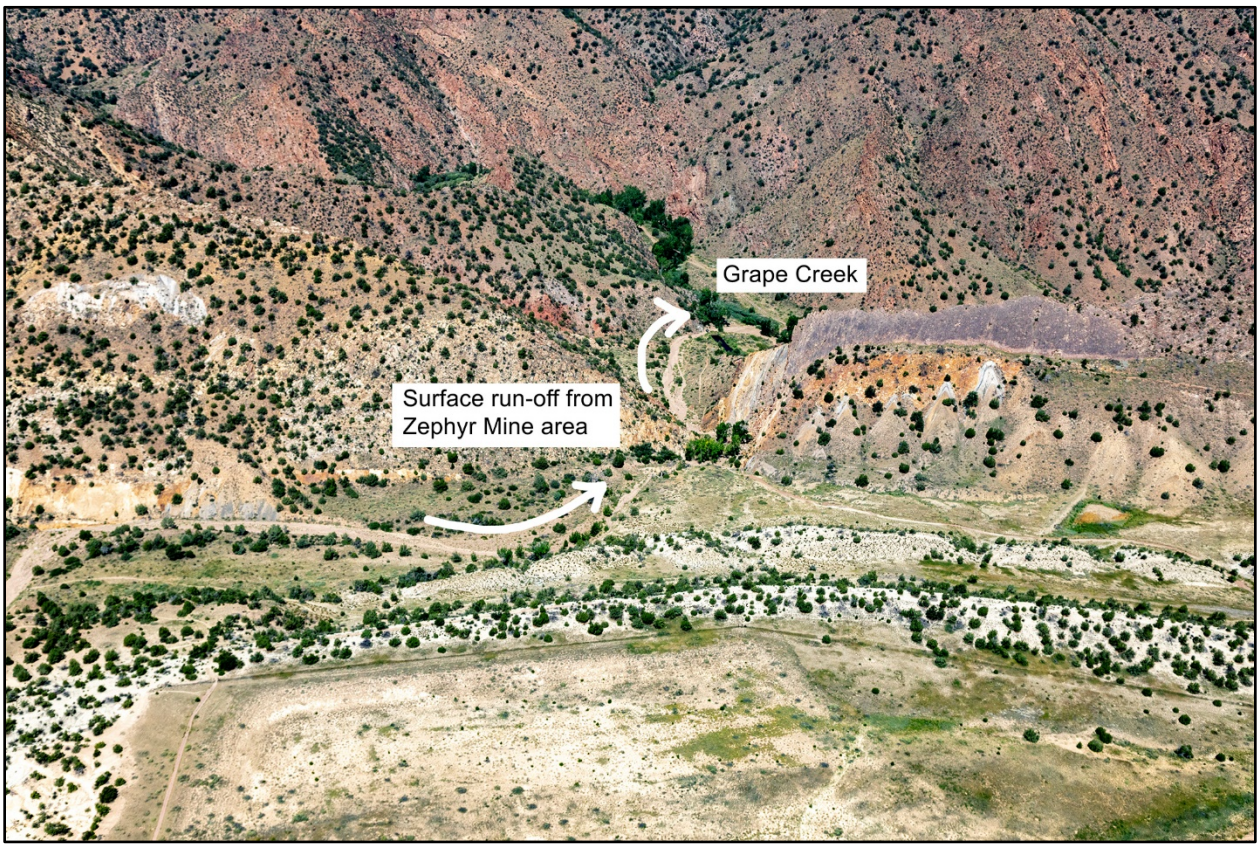
One of our typical, localized heavy rain events could wash contaminants from the mining site into Grape Creek. This is one of the reasons we strongly oppose the mining application. We respectfully request that this permit application be denied.



Comparison of multiple recorded Dawson Mountain floods to future mining site runoff



USGS Contour Map: Royal Gorge Quadrangle



Existing dry wash flowing from Zephyr Minerals Gold Mine area directly into Grape Creek

Respectfully submitted by Eve Nagode, historian and photographer, Fox Run Art Photography,
a Fremont County business, on August 31, 2021