



July 2023

East Boulder Tailings Storage Facility (TSF)

DETAILS OF TAILINGS STORAGE FACILITY

Tailings Storage Facility (TSF) Name	East Boulder TSF
Operation	East Boulder Mine
Operational Status	Active – Stage 4
Operating Segment	United States Platinum Group Metals
Location	McLeod, Montana USA
Latitude, Longitude (decimals)	45.50, -110.09
Ore Source	Underground
Type of Storage Facility	Impoundment (Lined Downstream dam) Stage 4 complete, Stages 5 & 6 under construction
Deposition Methodology	Perimeter Drops
Year of Commissioning	1999
Consequence Classification (GISTM, 2020)	Very High
Operating Contractor	Sibanye Stillwater
Engineer of Record (EoR)	Knight Piesold
Current Maximum Height (m)	40 (Stage 4)
Final Maximum Height (m)	47 (Stage 6)
Maximum Storage Capacity (total tonnes)	1,600,000
Life of TSF (year)	2030 (Stage 6)



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TECHNICAL ASPECTS:

Adopted Factor of Safety (FoS)

Montana Metal Mine Reclamation Act (MCA) 82-5-376 (2015)

Stability Assessment and Mitigation Measures (if applicable)

An updated stability assessment was conducted in 2020.

Along North face there are two sections of locally steepened slopes. Slope face angles were increased by the Engineer of Record to 1.75H:1V and 1.9H:1V to accommodate site infrastructure and create additional buffer between the TSF and East Boulder River.

Dam Breach Assessment

A Dam Breach Assessment was completed in 2022.

One breach location was evaluated on the East Boulder TSF, as indicated in Figure 3. The breach location was selected to maximize the consequences of the breach event, in terms of maximum tailings release volume and downstream impacts.

Area of Inundation

A Rainy-day and Sunny-day failure scenario were each analyzed as can be seen in Figures 4 and 5.

Summary of Human Exposure

There are multiple permanent homes and ranches in the inundation zone from the mine to the nearest town 52km (32mile) downstream.

The town of Big Timber sits at the confluence of the Boulder and Yellowstone Rivers; incremental impacts due to the failure dissipate just below town. There may be minimal impact several homes in the town.

For addition impact facts please refer to Figure 6 Sweet Grass County Vulnerability Analysis.



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DOCUMENTATION:

Site Specific OMS Manual

In place. Updated annually- latest version 2022

Dam Safety Review (DSR)

Carried out by an independent third party in 2020 with no material findings. Next DSR scheduled for 2025.

Design Basis Report (DBR)

In place. Updated as needed – latest version 2022

Environmental Management Programme (EMPr)

In place. (Locally named the Environmental Management System.)

SURVEILLANCE:

Surveillance Frequency

Ongoing via telemetry network.

Exceptions reviewed daily by the Staff. Engineering Staff review data weekly and report exceptions as needed to the EoR. EoR reviews and reports on instrument data quarterly.

Surveillance Technology/System

NavStar GeoExplorer for instrument data network and K2Fly Decipher.

Deformation Monitoring – Crest & Foundation

Automated GPS Monuments & Automated In-place Inclinerometers both via telemetric network.

Phreatic Surface Levels & Pore Pressure Measurements

Automated Vibrating Wire Piezometers (VWP's) via telemetric network.



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RISK MANAGEMENT / EMERGENCY PREPAREDNESS:

Risk Assessment

2022 Annual Risk Assessment (Failure Mode Effect Analysis) completed with no untoward risks identified.

The TSF is considered Low Risk.

Risk Management

Site specific Operations, Surveillance, and Maintenance (OMS) Manual is in place

Site specific Trigger Action Response Plans (TARPs) are in place. Critical controls have been established and implemented.

Site Specific Emergency Preparedness & Response Plans (EPRP)

2022 version available

Annual emergency mock drill for a catastrophic TSF failure – undertaken in 2021 with SSW employees, Local Communities Administration, and Local Emergency First Responders.

CLOSURE & POST CLOSURE:

Closure Planning

In place – Closure plan updated by Knight Piesold in 2020.

Closure Costing

Reclamation bond of USD \$33M in place for East Boulder Mine (includes East Boulder TSF) – Bond estimate prepared by KC Harvey in cooperation with DEQ/US Forest Service.

Asset Insurance Cover

Yes, with third party liability cover.

INDEPENDENT REVIEWERS:

Independent Tailings Review Board (ITRB)

ITRB inspection was completed in June 2023 with no material concerns identified.

Future ITRB Review

Summer 2024

Performance Reviews

Annual (Sept 2022) and quarterly reports with inspections completed by EoR.



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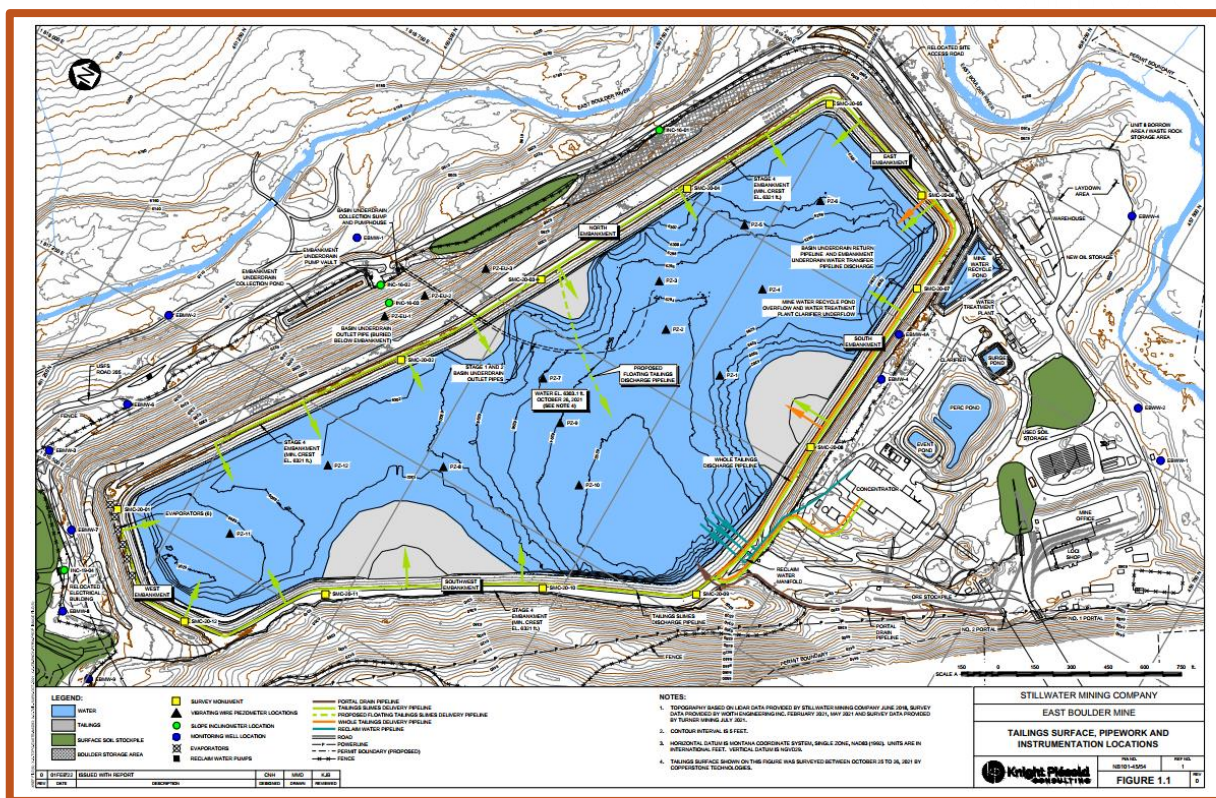


Figure 1: Layout of East Boulder Mine Complex

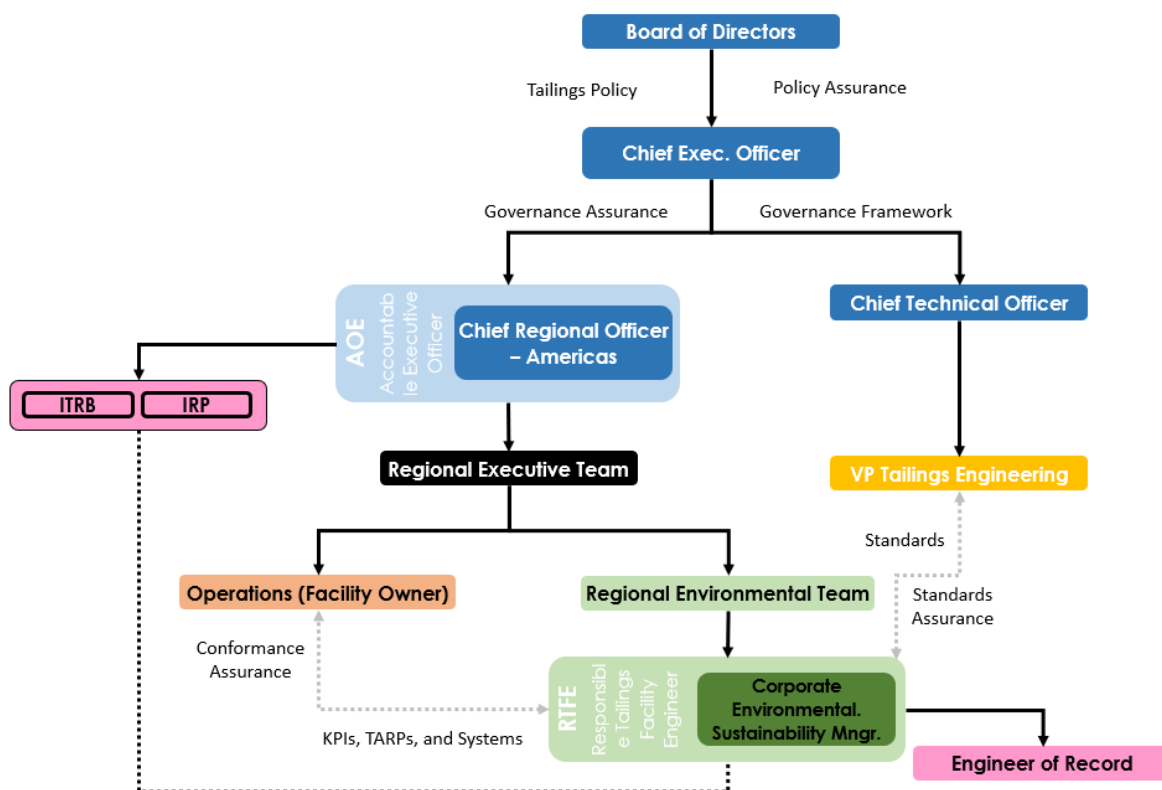


Figure 2: US Tailings Management Governance Structure

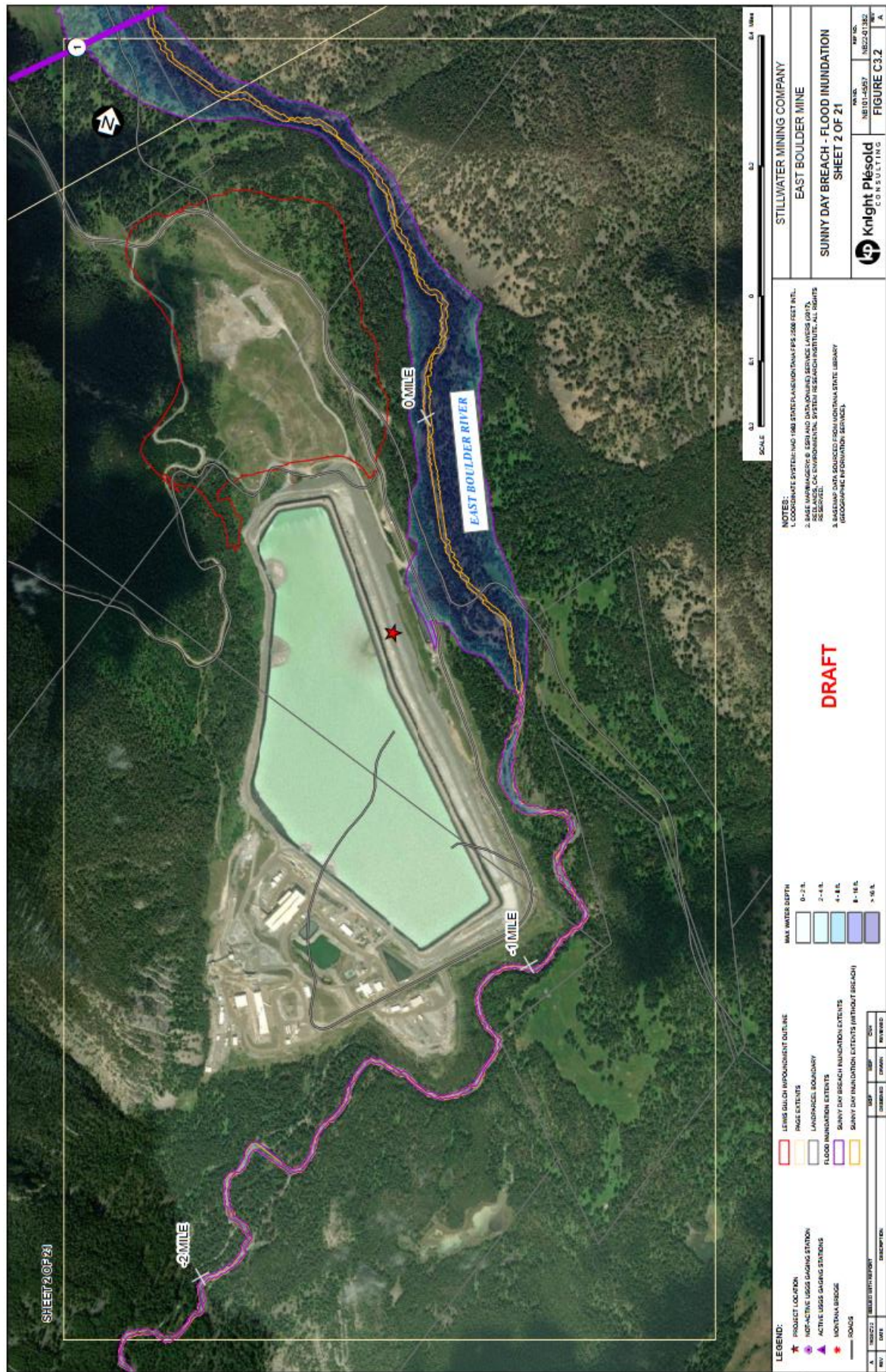


Figure 3: Breach Location



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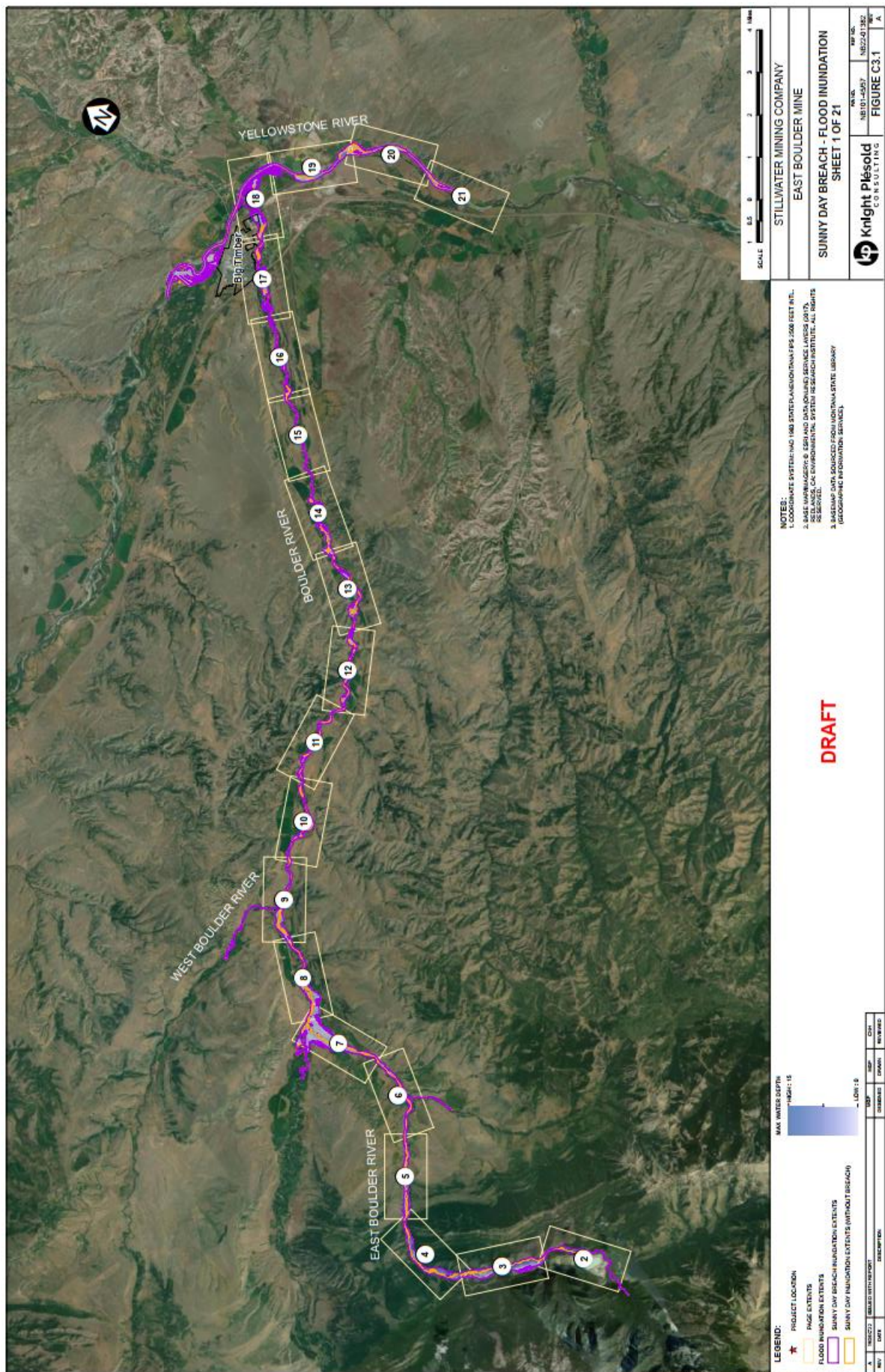


Figure 5: Consolidated view of the sunny-day failure scenario inundation boundaries.



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Sweet Grass County Vulnerability Analysis; Dam Failure

Category	Sweet Grass Co. (balance)	Big Timber (City)
Critical Facilities Exposure Risk \$	\$431,340	\$0
# Critical Facilities at Risk	3	0
Bridge Exposure \$	\$15,204,727	\$0
# Bridges at Risk	16	0
Persons at Risk	196	3
Persons Under 18 at Risk	40	1
Persons Over 65 at Risk	54	1

Figure 6: Summary of Human Exposure (source: Tetra Tech October 2021 Multi-Hazard Mitigation Plan Sweet Grass County MT)



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