

Q&As on Active Mining Operations and Superfund Activities in Butte

Overview

The Environmental Protection Agency (EPA) in conjunction with the Montana Department of Environmental Quality (MDEQ) has worked to provide clarifications and answers to community questions and concerns regarding current mining operations and potential impacts to Superfund cleanup in and around Butte.

The three operable units of the Silver Bow Creek/Butte Area Superfund Site (SBCBA) that are most relevant to the discussion about active mining are:

- The Butte Mine Flooding OU (BMFOU): BMFOU includes most of Montana Resources' mine permit area. The boundaries of the BMFOU are the Continental Divide to the east, Silver Bow Creek to the south, Missoula Gulch to the west, and the Yankee Doodle Creek and Moulton Reservoir watersheds to the north. The Berkeley Pit is the main feature of the BMFOU. (See Figure 1).
- The Butte Priority Soils OU (BPSOU): BPSOU includes the town of Walkerville to the north and Timber Butte to the south. The BPSOU is adjacent to the existing permit area, but it does not overlap with the permit boundary (See Figure 1).
- The Butte Active Mine Area OU (BAMAOU): BAMAOU is contained within the BMFOU, and the boundary is established to coincide with the operating permit area for the mine operations (See Figure 1, Existing Permit Area).

Montana Resources (MR) operates the Continental Mine which is permitted by MDEQ. EPA in consultation with multiple bureaus within MDEQ, provides oversight and has enforcement authority over the implementation of the BMFOU remedy under Superfund.

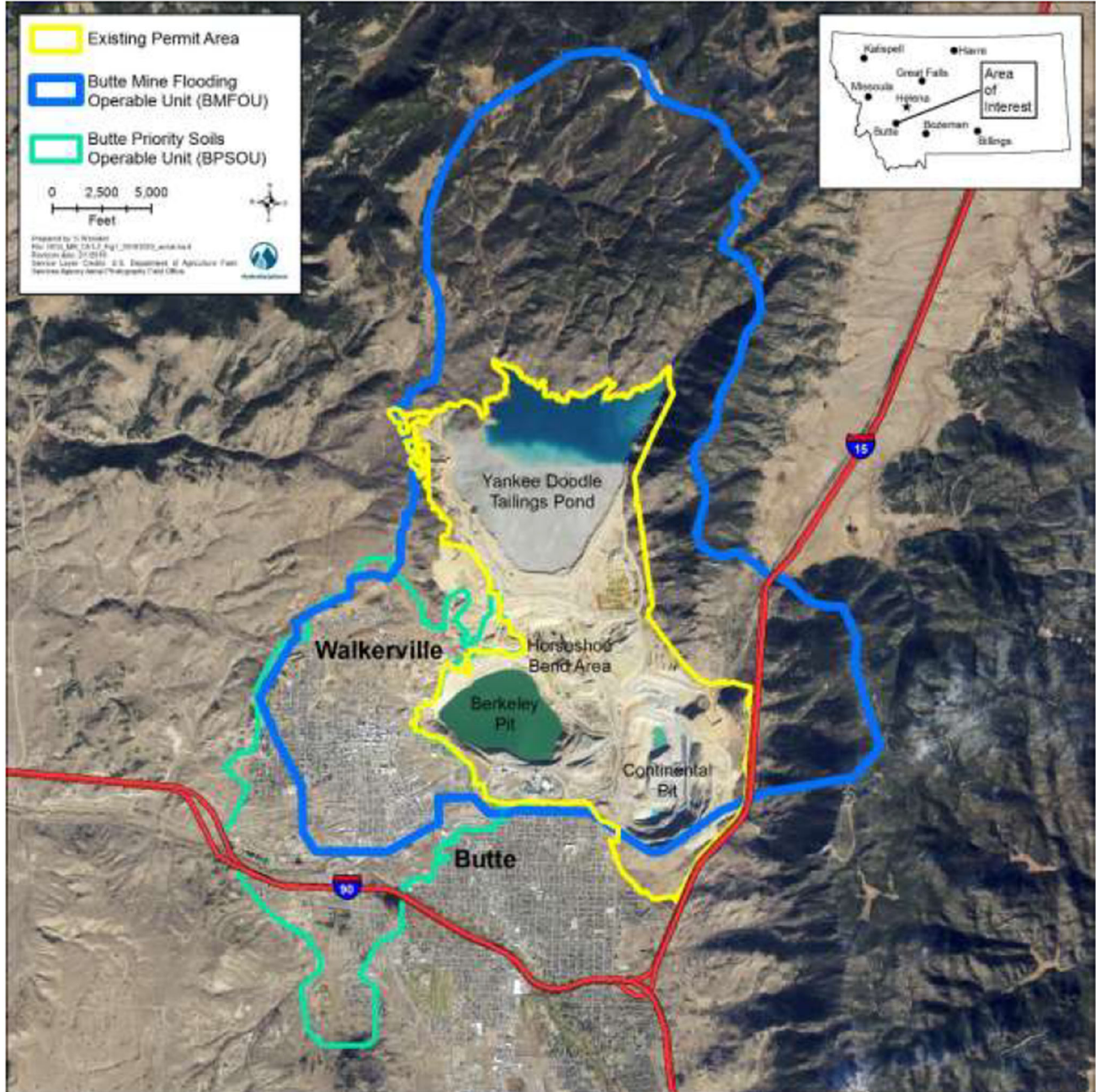
MDEQ consults and coordinates with EPA, but the operating permit issued under the Metal Mine Reclamation Act (MMRA) is regulated by MDEQ Mining Bureau and does not address the water management that falls under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund).

Under Superfund, EPA and MDEQ Superfund, Abandoned Mine Lands (AML), and Construction Bureau oversee how MR and Atlantic Richfield (AR) manage waters that enter and may eventually leave the Berkeley Pit. EPA and MDEQ also regulate how MR and AR maintain groundwater levels in and around the BMFOU to ensure that mine-affected waters are managed and treated, to meet water quality standards before they are discharged to Silver Bow Creek. The monitoring and management of groundwater in the Continental Mine site is included under BMFOU remedy requirements, as well as long-term treatment of waters that leave the mine site, whether the water is sourced from the Berkeley Pit, Continental Pit, or the Horseshoe Bend.

In 2001, EPA, with concurrence from MDEQ, adjusted boundaries between EPA's BMFOU and the existing permit area, BAMAOU, (see Figure 1) and deferred authority for mine permitting decisions at the BAMAOU to MDEQ under the Montana regulatory framework. EPA reserves the right to exercise CERCLA authority at the site should the reclamation plan not be implemented by the mine operator and/or enforced by MDEQ, or the bonding proves inadequate to cover the cost of reclamation required

by the permit. EPA also reserves its CERCLA authority over the Site when it conducts five-year reviews of the Site, as provided in section 121(c) of CERCLA.

Figure 1



Question: Is the active mine impacting the Superfund site?

The current mining activity from MR is not adversely impacting the SBCBA remedy.

MDEQ regulates active mining activities through MR's hard rock mine operating permit and their Montana air quality permit. The hard rock mine operating permit does not address the water management or treatment requirements under Superfund, or the operation and reclamation of associated facilities. The hard rock mine operating permit establishes conditions for mining plans and land reclamation strategies for other facilities such as dumps, roads, borrow soil, tailings impoundment beach and embankments, with associated financial assurance for completing reclamation tasks.

The permit also includes the conveyance of process solution or surface water between the active mine facilities such as tailings slurry from the concentrator, the tailings impoundment pond, the copper precipitation plant near Horseshoe Bend and certain groundwater monitoring sites along the west side of the tailings impoundment and the adjacent West Ridge. The complex hydrology and the water management strategies that are implemented at the BMFOU, especially the water treatment at two water treatment facilities, mean that there is often mixing or overlap between the water sources and associated facilities that are regulated under Superfund and the hard rock mine operating permit. The Montana Bureau of Mines and Geology (MBMG) monitors the BMFOU water elevations and samples the water quality, primarily for groundwater across the BMFOU. These activities complement each other working in tangent to achieve permit and remedial goals.

EPA exercises its CERCLA authority concerning how the responsible parties manage water that enters and may eventually leave the Berkeley Pit and how the parties maintain groundwater levels across the BMFOU to ensure that mine-affected waters are managed and treated, if necessary, to meet water quality standards and prevent further degradation. A BMFOU Consent Decree was finalized in 2002 that clarified responsibilities for the water monitoring and management. That Consent Decree can be accessed here: <https://semspub.epa.gov/src/document/08/1097894>

Question: How does Montana DEQ ensure that the active mine site is complying with applicable laws?

The MDEQ Mining Bureau is required to inspect the site three times a year under the MMRA, additional inspections or on-site meetings may occur if needed. MDEQ coordinates with MR to review current operations, updates about Superfund activities, and potential future permit actions.

Applications to amend the permit are evaluated by MDEQ for consistency and compliance with the Metal Mine Reclamation Act, the Montana Water Quality Act, the Clean Air Act of Montana, and other relevant legislation and regulations. Based on the potential significance of a proposed action, a review of environmental impacts may be required under the Montana Environmental Policy Act, including opportunities for public review and comment. In addition, the presence of the BMFOU and MDEQ's position as a party in the 2002 BMFOU Consent Decree requires that any permit actions proposed at the Continental Mine must be consistent with the BMFOU Consent Decree and other decision documents for the BMFOU. Actions that have the potential to affect the conditions at facilities within the BMFOU such as the Horseshoe Bend area or the Berkeley Pit must be coordinated with EPA.

MR submits an annual report to MDEQ which tracks the progress of mining through surface disturbance areas and material balance (volumes of soil, waste rock, ore, etc.). Additional monitoring reports are provided by the Engineer of Record and consulting firm for the tailings impoundment and adjacent areas, including construction, geotechnical, and hydrologic information. This information is available to the public through MDEQ's public records request center at:

[https://montanadeq.govqa.us/WEBAPP/rs/\(S\(jssrb3ef1g1i2pcc4utiuhpr\)\)/supporthome.aspx](https://montanadeq.govqa.us/WEBAPP/rs/(S(jssrb3ef1g1i2pcc4utiuhpr))/supporthome.aspx)

The statutory requirements for tailings impoundment facilities were updated in 2015 to provide additional technical oversight and are administered by the MDEQ Mining Bureau. There are prescriptive requirements for the design and documentation for these facilities, as well as the designation of a third-party Engineer of Record and Independent Review Panel of third-party engineers. These individuals are involved with periodic review and inspection of the facility, and they provide technical review, analysis, and recommendations for new or proposed designs and plans.

Question: Does EPA have any authority to do air monitoring related to the dust coming from the active mine?

EPA generally has authority to regulate air emissions, however, because MDEQ has an EPA approved State Implementation Plan under the Clean Air Act, MDEQ conducts such air monitoring. Air emissions from MR's active mining operations are regulated by Montana Air Quality Permit (MAQP) #1749-14 issued by MDEQ's Air Quality Bureau. MDEQ issues air quality permits under an EPA approved State Implementation Plan (SIP).

MR's MAQP Permit #1749-14 Includes:

- Provisions for air emissions from mining, drilling, blasting, haul roads, crushing, and processing operations.
- All required state and federal regulations with which MR must comply.
- Requirements for regular compliance inspections.
- Stipulations for MR to develop a long-term fugitive dust control plan that is approved by DEQ.

This information is available to the public through DEQ's public records request center at:

[https://montanadeq.govqa.us/WEBAPP/rs/\(S\(jssrb3ef1g1i2pcc4utiuhpr\)\)/supporthome.aspx](https://montanadeq.govqa.us/WEBAPP/rs/(S(jssrb3ef1g1i2pcc4utiuhpr))/supporthome.aspx)

MR and DEQ meet twice annually to review and revise the dust control plan to achieve maximum dust control and to prevent violations.

There are also process requirements for modifying the MAQP for changes to facility equipment or operations. Permit modifications, if more than administrative, include a public comment period and MDEQ responds to all public comments. The responses are available at [Permitting | Montana DEQ \(mt.gov\)](#) There have been no significant permit actions in the last several years.

Question: What kind of air monitoring is conducted by Montana DEQ in the area?

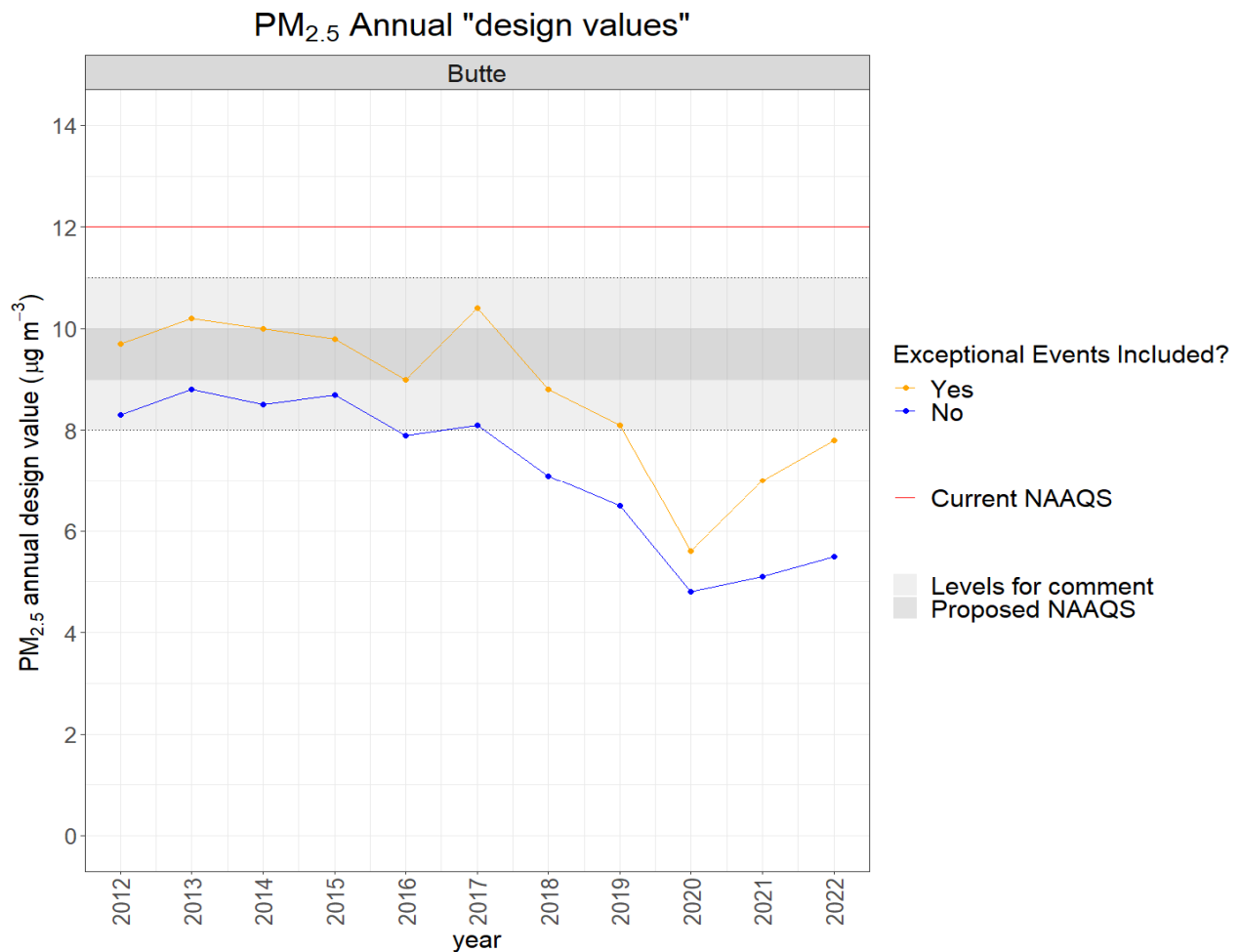
MDEQ operates and maintains a permanent air quality monitoring station in Butte's Greeley neighborhood, south of the existing permit area. MDEQ monitors air quality in Butte for large and small inhalable particulate matter fractions (PM10 and PM2.5, respectively).

Samples are also collected weekly for chemical makeup or “speciation” of PM2.5 as part of the national Chemical Speciation Network program. These samples are analyzed for 66 unique inorganic and organic chemical substances, including arsenic, cadmium, chromium, copper, lead, manganese, and zinc.

Particulate matter has been continuously monitored in Butte for more than 50 years at 42 different locations. A storyboard summary of MDEQ’s historical particulate monitoring efforts and studies is available at: <https://gis.mtdeq.us/portal/apps/storymaps/stories/722ed91440c44d84908043fa357a5f7>

The results of on-going monitoring at the Greeley School show no current violation of ambient air quality standards. Data has consistently and repeatedly shown Greeley School to be the most representative and health-protective monitoring site in Butte.

Today Butte is in attainment for existing PM2.5 and PM10 National Ambient Air Quality Standards (NAAQS) and proposed lower PM NAAQS.



All state monitoring is publicly available through a data portal at: https://discover-mtdeq.hub.arcgis.com/datasets/7ff8441bb7014aa1b8a1da58f51c16db_0/explorer?location=46.460764%2C-109.995100%2C7.00&showTable=true

Question: Are there any additional air monitoring efforts at the site?

MR has contracted a third-party engineering firm to conduct additional ambient air monitoring in the Greeley neighborhood at the same site maintained by DEQ.

Monitoring has been conducted continuously since March 2019 and covers PM10, total suspended particulate (TSP) and the following metals: arsenic, cadmium, copper, manganese, molybdenum, lead and zinc. Data are submitted by MR to MDEQ quarterly and are available to the public through MDEQ's public records request center available at:

[https://montanadeq.govqa.us/WEBAPP/rs/\(S\(jssrb3ef1g1i2pcc4utiuhpr\)\)/supporthome.aspx](https://montanadeq.govqa.us/WEBAPP/rs/(S(jssrb3ef1g1i2pcc4utiuhpr))/supporthome.aspx)

Based on public input and requests, MR has expanded their contracted monitoring to include two additional sites in the Greeley neighborhood, one on either side of the existing Greeley monitoring site. Monitoring will be for Total Suspended Particulate (TSP) and metals. Dustfall surveys for assessment of nuisance dust levels will be conducted at all three Greeley neighborhood locations.

Question: Are there other examples of an active hardrock mine next to a residential community surrounded by land designated as federal Superfund OUs in various stages of remediation?

Yes, for both active and inactive. In Utah, the Kennecott South Zone and North Zone Sites include a large active copper mine and mill operated by Rio Tinto Kennecott (RTKC), located in the southwest quadrant of Salt Lake Valley. CERCLA work is overseen by EPA and the Utah Department of Environmental Quality (UDEQ).

The UDEQ – Division of Air Quality has lead authority under the State Implementation Plan to permit RTKC's active operational major and minor sources of potential air pollutants, including the open pit. Air monitoring is performed by RTKC as required by the permits. During Superfund remedial and response action cleanups, air monitoring is required as part of engineering controls to ensure there is adequate suppression of dust (pursuant to the UDEQ Fugitive Dust Rule).

In Montana, the Kootenai Development Corp. (formerly WR Grace) holds a hard rock mine operating permit for the inactive vermiculite mine near Libby. This mine is included in Operable Unit 3 of the Libby Asbestos Superfund site and is located 3 miles from Libby, MT.

More information is available at: <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0801744>