STATE OF MONTANA, NATURAL RESOURCE DAMAGE PROGRAM

Charles Van Otten,
U.S. EPA, 1595 Wynkoop Street
Denver, Colorado, 80202.
vanotten.charles@epa.gov

RE: NRDP Comments on EPA's Position on the Use of Onsite Material as General Fill at Butte Priority Soils Operable Unit of the Silver Bow Creek/Butte Area Superfund Site

Dear Mr. Van Otten:

Thank you for the opportunity to comment on EPA's Position on the Use of Onsite Material as General Fill at Butte Priority Soils Operable Unit of the Silver Bow Creek/Butte Area Superfund Site ("Position"). As you are aware, the State has previously provided comments to EPA on many of the components of this proposal. EPA has provided responses to some of the legal aspects of our comments, but the technical components have not been addressed in EPA's Position.

As stated previously to EPA, if EPA does not require that all fill (whether generated on site or imported from offsite) meet Table 2 criteria (the "Backfill Material Suitability Criteria" table) for all contaminants and other criteria, NRDP requests that a site-specific analysis of the proposed use of this new category of higher contaminant concentration general fill be conducted that evaluates the protectiveness of the fill and the location-specific requirements for its onsite use. We believe this analysis is necessary to provide the protective remedy contemplated in the BPSOU Consent Decree. Without the specifics on the location-specific controls and analysis of protectiveness, NRDP cannot evaluate whether this proposal is protective and a modification to the BPSOU CD.

NRDP has three major concerns with EPA's Position, in addition to specific comments:

1. NRDP does not agree that EPA can modify written components of the BPSOU CD, including the FRESOW, other than by following Paragraph 27 of the BPSOU CD.

Accordingly, NRDP requests clarification on the extent and locations EPA intends to approve the use of this new category of higher contaminant concentration general fill prior to providing the necessary details and constraints on its use. Is EPA proposing Scenario A or Scenario B, below?

Scenario A: If EPA is proposing to use this new category of higher contamination general fill above of the wetted perimeter of the basins, and above the 3-year high groundwater elevation, but still below the basins (i.e., this appears to only be the basin berms), then we recognize that this is consistent with EPA's previous legal position on how this complies with the BPSOU CD (see Attachment A).

Scenario B: If EPA is proposing to use this new category of higher contaminant concentration general fill in locations besides underneath the Diggings East and Buffalo Gulch stormwater basins (including associated inlet and outlet structures), or underneath the Grove Gulch and Northside Tailings sedimentation basins, then we believe this is inconsistent with EPA's previous legal position (see Attachment A) and a change to the BPSOU CD. If there is a different basis in the BPSOU CD that allows for use of this fill in different portions of BPSOU, we have not seen this legal analysis and request that EPA provide this analysis.

The following comments apply to Scenario B. The State has previously commented that use of onsite fill that contains contaminant concentrations exceeding the Table 2 (the "Backfill Material Suitability Criteria" table, Criteria B General Fill) criteria conflicts with the BPSOU Consent Decree requirements, and that the Paragraph 27 modification provisions must be followed. EPA's response (see Attachment A) was that this new category of higher contaminant concentration general fill exceeding the numeric criteria in Table 2 (the "Backfill Material Suitability Criteria" table for BPSOU) could be used anywhere that "General Fill" could be used, as long as it met the non-contaminant criteria in Table 2. However, Table 2, Footnote 2, states, "*Criteria B applies to structural fill below DE and BG stormwater basins (including associated inlet and outlet structures), [and] GG and NST sedimentation basins (including inlet and outlet structures as appropriate).*" Criteria B fill is not allowed to be used anywhere else but below the basins.

Part of EPA's Position seems to directly contradict this portion of Table 2 of the FRESOW and its location-specific controls for Criteria B General Fill. Specifically, EPA is proposing to use this new category of higher contaminant concentration fill, "*in areas outside of the stormwater basin's/sedimentation bay's wetted perimeter (i.e., the area of the basin/bay high water level*)." EPA is also proposing an 18-inch cap over this new category of higher contaminant concentration fill, which seems to imply that it is not only being used under the basins as required in Table 2. Please clarify.

NRDP agrees that this new category of higher contaminant concentration general fill should not be used in the areas the State determined it was most at risk of contaminating groundwater (i.e., under the stormwater basins). However, these sorts of alterations to the FRESOW (e.g., changing Table 2, Footnote 2) constitute a modification and EPA must follow the requirements of Paragraph 27 of the Consent Decree.

2. EPA has not explained how it will assure that this proposed set of practices are protective of groundwater, surface water, and vegetation resources. EPA's evaluation of protectiveness should be included in any final Position. At the end of the comments, we are requesting additional information to evaluate the protectiveness of the Position. Based on the information currently available, NRDP cannot agree that the current draft Position is protective; additional detail is provided in the specific comments below.

Primarily, we do not agree that the Position includes enough detail to determine the protectiveness of the leaching to groundwater contaminant pathway. The Position does not represent everything technically practicable to address contamination in groundwater as it allows a new contaminant source to groundwater (See comment 3 below). EPA guidance and other State guidance demonstrate that the concentrations of contaminants in this new category of higher contaminant concentration general fill are many times higher than is typically allowed or deemed protective of groundwater (see Attachment B).

3. The Position leaves many critical issues that the State previously agreed to in the BPSOU CD and included in the FRESOW to EPA's sole discretion to make at some later date. The Position states, "[*t]he Backfill Material Characterization and Reuse Plans mentioned above will describe the additional location-specific requirements and any other appropriate design parameters for where onsite material may be used as general fill within the appropriate project areas*." The discussion thus far has been limited to what criteria on-site backfill material must meet to be used under the stormwater or sediment basins. EPA's statement above introduces further changes to general fill requirements throughout the operable unit. NRDP does not agree with this approach, and instead urges EPA to adhere to the requirements outlined in the FRESOW unless and until those requirements are shown not to be protective of human health and the environment.

The sentence quoted above appears to imply that EPA is deferring potential changes to the BPSOU Consent Decree to be decided at a later date in a CD deliverable. NRDP does not agree that this is an appropriate process for documenting the protectiveness of this proposed change.

Further, understanding the sampling methodology for identifying waste, fill, and this new higher contamination fill is critical to evaluating protectiveness. NRDP would suggest that when EPA has completed each project-specific draft Backfill Material Characterization and Reuse Plan that these questions and concerns then be vetted with the other CD signatories and the public. These draft Backfill Material Characterization and

Reuse Plans should be developed as early as possible in the design process for each location. (For example, we have not seen any of these backfill plans for any of these locations, yet EPA said at the August 30 meeting that it planned to have all designs completed by 2025.)

Specific Comments:

Comment 1: On August 18, 2023, NRDP previously provided this comment on a draft of the Position.

"How is material found onsite reused at Superfund sites?
Material found onsite has also been reused at other remediation and restoration projects in Montana, such as the Clark Fork River site and the Parrot Tailings project."

We again request that EPA edit this statement to be clearer and accurate. The issue is not using fill from onsite or generally where the source of the fill is; rather it is the maximum contaminant concentrations allowed in that fill that NRDP finds most problematic.

The contaminant concentrations allowed in fill generated onsite at the Parrot Tailings Waste Removal Project (Parrot Project), and the Clark Fork OU (CFROU), are significantly lower than what EPA would allow here. We have previously provided EPA with the relevant information about the maximum allowable contaminant concentrations of the fill used at the Parrot Project and the Clark Fork River OU (CFROU) remedial action. The comparisons are in the following table:

Total maximum contaminant concentrations comparisons for fill (mg/kg)
Clark Fork River OU = 484
Parrot Project = 3,230
EPA's new high contaminant concentration category of general fill = 11,230

In the case of the Parrot Project and the CFROU, the same numeric criteria were applied to onsite fill as to imported fill because the source of the fill is irrelevant. In the case of the CFROU, the ROD requires a total concentration of less than 484 mg/kg. The Parrot Project fill criteria required a total concentration of less than 3,230 mg/kg. In its BPSOU Position, EPA would approve the use of a maximum allowable total contaminant concentration of 11,230 mg/kg, which would be considered waste and removed as "waste" in the Parrot Project and the Clark Fork River OU.

Comment 2: On August 18, 2023, NRDP previously provided this comment on the

draft of the Position.

> ***"How is onsite material characterized for potential use as general fill?*** *Initial characterization of materials located at the Northside Tailings, East Buffalo Gulch, and Diggings East project areas was conducted between 2019-2023 to estimate the volume of waste that may need to be disposed in a repository and the volume of materials that could be suitable for use as general fill within the project areas depicted below.*
>
> *Preliminary design and modeling efforts indicate that onsite material could comprise roughly 25-35% of the general fill to be used at the Northside Tailings, East Buffalo Gulch, and Diggings East project areas."*[1]

NRDP has not been provided and are not otherwise aware of any estimates of fill and waste volumes for any project areas or any other basis for this statement. We request that EPA provide these volume estimates and a reference in this document so that this assertion may be better understood.

NRDP notes that the study performed by MBMG in 2013 indicated that most of the fill overlying the waste at Diggings East was composed of demolition debris (wood, bricks, concrete, asphalt, etc.). As noted in footnote 3 of Table 2, these materials have to meet the contaminant criteria to be used as backfill. "Inert solid wastes and construction debris includes only unpainted masonry brick, dirt, rock, and concrete, **and shall meet metals criteria in Table 2**. Concrete size shall not exceed 3 feet by 3 feet." The State reads this as requiring all contaminant criteria (i.e., "metals") be met (not simply the "other" non-contaminant criteria of Table 2).

Comment 3:

> *"During construction, any onsite material that is identified as potentially suitable for general fill will undergo extensive sampling and analysis to confirm that it meets the protective parameters and criteria in the flow diagram below and therefore is in fact suitable to be used as identified in project area work plans also described below. The BPSOU CD specifies if three of the six contaminant criteria listed are exceeded or any one contaminant is above 5,000 mg/kg, then the material is considered tailings, waste, or contaminated soil. Any such material cannot be used as general fill. Preliminary design and modeling efforts indicate that onsite material could comprise roughly 25-35%*

[1] EPA states in the Proposal that this increases *"public safety by reducing haul truck traffic on public roads by approximately 6,000-14,000 truckloads."* As noted, we have not seen the volume estimations that support this statement but suggest that if offsite backfill is obtained from the same location as the waste repository (e.g., from Montana Resources), the haul trucks could simply return full of backfill after dumping the waste at the repository as was performed at the Parrot Project. Risk from haul traffic on public roads can also be controlled by using onsite project-specific roads (as used on the Parrot Project), conveyer systems, trains (as used on Streamside Tailing OU and the Milltown OU), or slurry pipeline (as is the case for Montana Resources daily tailings waste disposal).

> *of the general fill to be used at the Northside Tailings, East Buffalo Gulch, and Diggings East project areas. Estimates will continue to be updated as the project moves further through design."*

It would be helpful to NRDP and the public if EPA would provide additional details about the sampling and analysis plans. The sampling methodology for identifying onsite materials as waste, fill, capping or this new category of higher contaminant concentration general fill that exceeds general fill criteria of Table 2 is crucial to understanding the protectiveness of the draft Position.

Comment 4: On August 18, 2023, NRDP previously provided this comment on a draft of the Position.

> *"It has been suggested that the risk of using onsite material as general fill is 3.5 times higher than the risk of using imported general fill because, in theory, the onsite material could have 3.5 times higher metals concentrations than the imported general fill. This suggestion is inaccurate; the initial data collected regarding the onsite material (available at Silver Bow Creek/Butte Area EPA website) shows that the onsite material potentially suitable as general fill does not contain metals concentrations that are 3.5 times higher than the metals concentrations applicable to imported general fill. In addition, risk from metals is not calculated by summation and so to add up metals concentrations and suggest that the risk automatically follows that cumulative number is not accurate; risk from each metal is determined individually based on toxicity profiles, dose, and effects on human health. Remedies address the risk of each metal because metals are most often co-located with each other, so addressing the metal with the highest risk also addresses other metals that may also be present."*

NRDP did not suggest or state that the "risk" is 3.5 times greater; rather it noted that the allowable contaminant levels would be 3.5 times higher, which is an accurate statement. In fact, risk is not always linear, which is our point: the relationship between contaminant levels and risk in this situation simply has not, in any publicly known way, been analyzed and determined by EPA. NRDP requests that EPA perform an evaluation of risk of your proposal and publicly provide that evaluation for review.

Comment 5: On August 18, 2023, NRDP previously provided this comment on a draft of the Position. This comment was not incorporated by EPA before releasing it to the public; instead, EPA simply added "(available at Silver Bow Creek/Butte Area EPA website)." NRDP has attempted to locate this information and would request further information on where to find it (i.e., a link to a document would be helpful).

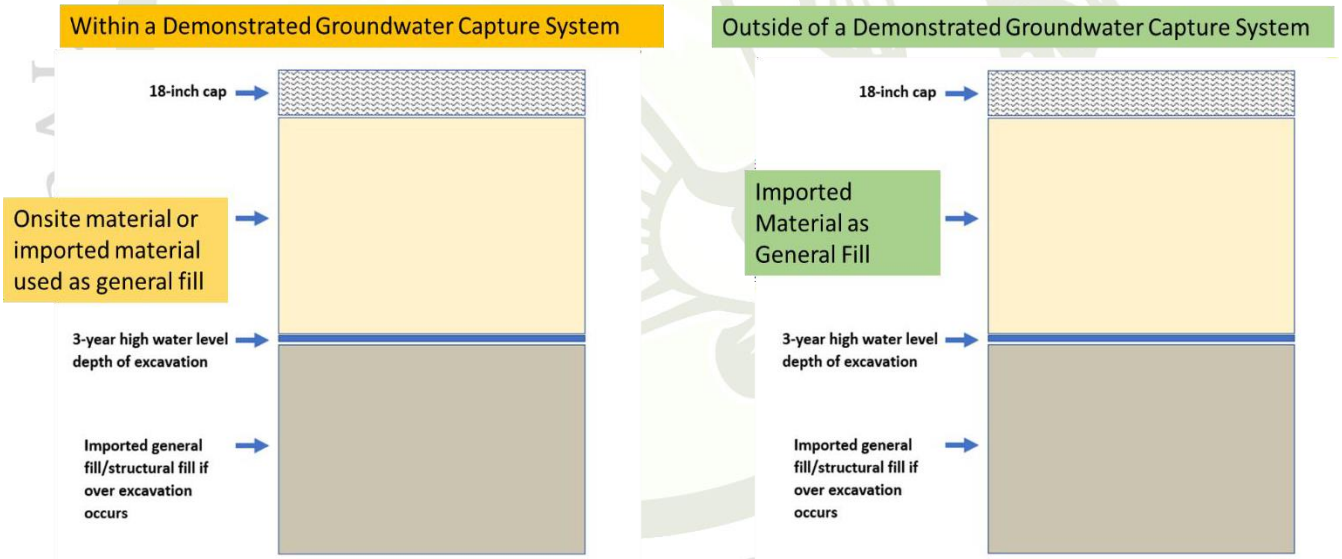
> *"the initial data collected regarding the onsite material (available at Silver Bow Creek/Butte Area EPA website) shows that the onsite material potentially suitable as general fill does not contain metals concentrations that are 3.5 times higher than the metals concentrations applicable to imported general fill."*

We recommend providing the source of this statement in a reference or preferably delete this sentence. Maximum thresholds for contaminant concentrations for solid materials/soils and water should be set at levels that are protective of human health and the environment; protection of the environment should not rely on an assumption that the contaminants will be significantly below the allowed levels.

Comment 6:

> ***"Protection of Groundwater***
> *Proposed requirements would limit reuse of onsite material for general fill to areas above the 3-year high water table and within a current or future demonstrated groundwater capture zone where groundwater is collected and treated before discharge, thereby eliminating the groundwater to surface water pathway."*

General Fill Cross Section



By only allowing this new higher contaminant concentration general fill within a "demonstrated groundwater capture system," it appears that EPA agrees that this type of higher contaminant concentration general fill, if used without well-defined and strict location specific controls, is a risk to groundwater from irrigation infiltration, precipitation infiltration, and groundwater saturation. NRDP agrees that these materials are leachable and a risk to water resources of the State, and relying on engineered controls is not protective of the resource.

The State of Montana agreed to the BPSOU CD (as well as the 2020 ROD Amendment that removed the 2006 requirement that BP-AR install a water treatment plant to meet surface water standards if other remedial elements failed to do so) with a core requirement that additional and ongoing sources of groundwater contamination would not be allowed. The State's rationale in this decision was to mitigate the risks of contaminated groundwater impacting surface water and instream sediments. Use of this new category of higher contaminant concentration fill as general fill, without an analysis of whether that material will leach to groundwater, undercuts BP-AR's responsibility to implement technically practicable solutions prior to waiving groundwater standards[2]. Although EPA has waived groundwater standards, it does not follow that practicable remedial efforts to address source removals of a state resource should be abandoned. Reducing ongoing sources of groundwater contamination also was the basis for the State moving forward with the Parrot Project. This Position potential creates a new source and new pathways to groundwater contamination if not properly addressed.

3-year High Groundwater:

The 3-year groundwater level criterion was not established in the CD with this scenario in mind. Using the high 3-year groundwater level criteria now for placement of this new category of higher contaminant concentration general fill means that it could be saturated on average every 4 years by groundwater and perhaps more frequently. Does EPA have an analysis that demonstrates that this criterion is protective? If not, then a more protective frequency should be considered, such as 7- or 10-year high groundwater.

Capture Zone:

The State does not agree that additional groundwater contamination loading sources are acceptable now or in the future, which is implicit in the "capture zone" criteria (i.e., it can contaminate groundwater because groundwater will be captured somewhere else). Allowing further contamination to groundwater is not acceptable to the State.[3]

We also have concerns with the feasibility of relying on a "demonstrated" groundwater capture zone to protect the State's groundwater resources. How will the groundwater capture zone be determined in order to guide the placement of this new category of higher contaminant concentration general fill? What guidance will EPA use to determine groundwater capture zones? How can the groundwater capture zone be adequately defined to explain the placement of onsite fill for current projects when future remedial elements for groundwater capture are still years away from design, implementation, and effectiveness determination?

[2] *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration*, 1993, Directive 9234.2-25, page 13, "A demonstration that ground-water restoration is technically impracticable generally should be accompanied by a demonstration that contamination sources have been, or will be, identified and removed or treated to the extent practicable."

[3] *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration*, 1993, Directive 9234.2-25 at page 20, "Source containment has several benefits. First, source containment will contribute to long-term management of contaminant migration by limiting further contamination of ground water and spread of potentially mobile sources . . . ."

Comment 7:

> *"Capping with cover soil, then revegetating or installing a hard surface such as a sidewalk or parking lot will reduce likelihood of erosion, movement of soils, and potential leaching. With these measures in place, reuse of onsite materials is not expected to impact current groundwater conditions. Additionally, there is currently a restriction on the use of groundwater in place."*

Capping:

The figure entitled, "General Fill Cross Section" shows an 18-inch cap over the "onsite fill," which appears to be a requirement of the Position. Capping with 18 inches of soil does not provide adequate protection from infiltration and leaching to groundwater in Butte, MT. For the design of the 18-acre Evapotranspiration Cover System for the Parrot Project, NRDP modeled this infiltration contaminant transport mechanism, which led to the design and construction of a 36-inch-thick cap, made of very specific soils to interrupt and address the risks for this infiltration pathway.

In addition, irrigation will not be allowed on the Parrot Project ET Cover System. EPA and BP-AR have been proposing to artificially irrigate many areas within the Diggings East, Northside Tailings and Buffalo Gulch storm water basin areas, which would add even more water and lead to additional leaching of contaminants to groundwater. If EPA is still considering allowing additional water associated with irrigation, then modeling should be performed to show protection of groundwater. When FRESOW Tables 1, 2, and 3 were developed for the BPSOU CD, irrigation was not considered as an acceptable end land use in mine waste projects where all the waste is not being removed. Please clarify how/if irrigation will be allowed.

EPA also notes that Buffalo Gulch, Northside Tailings, and Diggings East have certain upland areas where this "onsite material" may be used as general fill with upland caps. Table 3 limits uplands caps to Diggings East and Northside Tailings. Please see General Comment 1. How does EPA propose modifying the CD to address this change to Table 3?

Hard Surfaces:

We cannot tell what role the "hard surface" would play in this Position. Would hard surfaces be required to ensure this Position is protective of leaching to groundwater? If so, how would EPA ensure that the parking lots would remain in place in perpetuity and how would this be enforceable? Whether these hard surfaces would remain in place in perpetuity and how this would be enforced is critical to evaluating the protectiveness of this Position.

Comment 8:

> ***"Where would onsite material be used as general fill?***

The use of onsite material within certain protective parameters allows the remedy to be constructed in a timely manner while protecting human health and the environment now and into the future. Initial EPA proposed design parameters include:

- *Onsite Material can be used in areas outside of the stormwater basin's/sedimentation bay's wetted perimeter (i.e., the area of the basin/bay high water level).*
- *Onsite Material can only be placed above any groundwater elevation measured in the last 3- years.*
- *Onsite Material will not be located within any 100-year floodplain or channel/stream, including future channel alignments (i.e., ROCC's designated channel alignment), in riparian areas or within the stormwater or sediment ponds or inlet structures.*
- *Onsite Material can only be placed in areas within a demonstrated groundwater capture system.*

The project areas of Buffalo Gulch, Northside Tailings, and Diggings East have certain upland areas that meet the above criteria such that onsite material used as general fill is protective of human health and the environment. See general fill cross section above, where EPA is proposing onsite material would be used as general fill in relation to imported general fill."

It appears that EPA is stating that this new category of higher contaminant concentration general fill can be used anywhere within the Buffalo Gulch, Northside Tailings, and Diggings East project areas if it:

- Is located above the 3-year high groundwater,
- above the wetted perimeter of the stormwater/sedimentation ponds; and
- is in the groundwater capture zone as solely determined by EPA.

NRDP does not believe this is consistent with the BPSOU Consent Decree or EPA's own legal analysis (see Attachment A). Table 3 defined upland caps for Diggings East and Northside Tailings only. Please see NRDP's first general comment.

However, the Position clearly states that this material will only be used in the Buffalo Gulch, Northside Tailings, and Diggings East project areas. NRDP understands that EPA is not proposing to use this new category of higher contaminant concentration general fill elsewhere and this Position does not provide legal or technical justification for use elsewhere in BPSOU.

Information Request: EPA's determination that this proposal is protective of State surface water, groundwater, and vegetation seems to be predicated on a few things that NRDP has not

seen, as far as we are aware. Please provide copies of the following to aid in our evaluation of EPA's proposal:

1. An analysis that the 18-inch cover, new category of higher contaminant concentration general fill groundwater saturation every 4 years, and irrigation is protective of groundwater from all infiltration. Attachment B lists the EPA's calculation of screening levels for contaminant concentrations in fill material that protects groundwater (the Regional Screening Levels (RSL) Table (November 2022)).

2. An analysis of the groundwater capture zone currently and into the future for the State's review.

3. "Initial characterization of materials located at the Northside Tailings, East Buffalo Gulch, and Diggings East project areas was conducted between 2019-2023 to estimate the volume of waste that may need to be disposed in a repository and the volume of materials that could be suitable for use as general fill within the project areas depicted below.

   Preliminary design and modeling efforts indicate that onsite material could comprise roughly 25-35% of the general fill to be used at the Northside Tailings, East Buffalo Gulch, and Diggings East project areas."

4. "Initial data collected regarding the onsite material (available at Silver Bow Creek/Butte Area EPA website) shows that the onsite material is potentially suitable as general fill does not contain metals concentrations that are 3.5 times higher than the metals concentrations applicable to imported general fill." Please provide the data and analysis that supports this statement.

5. How would the new category of higher contaminant concentration general fill be identified (sampling methods and frequency)? NRDP has asked for this previously and has not received it.

Sincerely,

Digitally signed by Douglas H Martin
Date: 2023.09.08 17:07:58 -06'00'

Doug Martin
Acting NRDP Program Manager

Attachment A

From: Morgan, Jonathan
To: Agee, Erin; Jackson, Sarah; Bielenberg, Ben; Poetter, Joe; Urdiales, Aaron; Greene, Nikia; Schefski, Kenneth (KC); Madigan, Andrea; Thompson, Christopher; Lindsey, William; Harris, Harley; Steinmetz, Amy; Garcin-Forba, Katherine; Ford, Jim; Cunneen, Padraig; Reed, Daryl; Hausrath, Katherine; Balliew, Carolina
Subject: RE: Follow-up Meeting NRDP/MDEQ/EPA
Date: Tuesday, July 18, 2023 1:34:23 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png

Hi Erin,
Thank you for the response to our legal position regarding the backfill material criteria and whether the modification provisions of CD paragraph 27 have been triggered. We respect EPA's lead agency role in the cleanup, and EPA's willingness to consider our concerns on this through the State's role as CD signatories and DEQ's/NRDP's respective consultative/coordination roles. Although the State and the US view the paragraph 27 provisions differently, the State nevertheless looks forward to continued discussions on the reuse of onsite materials and the location-specific controls that will be used to ensure a protective remedy, documented appropriately. The State also looks forward to reviewing and commenting on EPA's public proposal on this matter, which we are informed we should expect by the end of the month.

We support the tech teams re-engaging on technical issues under agreed-upon parameters, and trust that moving forward our teams will share information in a timely and accurate manner so that management, legal, project management, and technical staff have a clear picture of proposed design considerations, as well as the ability to ask clarifying questions when needed. We think that all parties to the CD will agree that this is the best path forward to ensure a timely and protective cleanup for the community and citizens of Butte.

Thanks again for the discussion and consideration on this issue.

Jonathan Morgan | *Legal Counsel*
Montana Department of Environmental Quality
Office: 406-444-6589 | Mobile: 406-465-6704

DEQ Montana Department of Environmental Quality

How did we do? »

From: Agee, Erin <Agee.Erin@epa.gov>
Sent: Monday, July 10, 2023 3:31 PM
To: Morgan, Jonathan <JMorgan3@mt.gov>; Jackson, Sarah <Jackson.Sarah@epa.gov>; Bielenberg, Ben <Bielenberg.Ben@epa.gov>; Poetter, Joe <poetter.joe@epa.gov>; Urdiales, Aaron <Urdiales.Aaron@epa.gov>; Greene, Nikia <greene.nikia@epa.gov>; Schefski, Kenneth (KC) <Schefski.Kenneth@epa.gov>; Madigan, Andrea <Madigan.Andrea@epa.gov>; Thompson, Christopher <Thompson.Christopher@epa.gov>; Lindsey, William <Lindsey.William@epa.gov>; Harris, Harley <HarleyHarris@mt.gov>; Steinmetz, Amy <ASteinmetz@mt.gov>; Garcin-Forba, Katherine <Katie.Garcin-Forba@mt.gov>; Ford, Jim <JFord@mt.gov>; Cunneen, Padraig <PCunneen@mt.gov>; Reed, Daryl <dreed@mt.gov>; Hausrath, Katherine <KHausrath@mt.gov>; Balliew, Carolina <Carolina.Balliew@mt.gov>
Subject: [EXTERNAL] RE: Follow-up Meeting NRDP/MDEQ/EPA

Jon,

Thank you for your email explaining the Montana Natural Resource Damage Program and Montana Department of Environmental Quality's (collectively "the State") view of the language cited in EPA's April 20, 2023, letter regarding the use of onsite material as general fill at the Butte Priority Soils Operable Unit (BPSOU). EPA shares the State's commitment to ensuring the protectiveness of the BPSOU remedy. EPA will not approve any remedial design elements that do not adequately protect human health and the environment. This is an underlying principle of the Superfund program to which EPA is unwaveringly committed. We do, however, believe that the BPSOU Consent Decree (CD) permits the use of onsite material as general fill where consistent with remedial goals, provided it does not trigger the Table 1 Waste Identification Criteria of the FRESOW. This position is reached in consultation with the Department of Justice (DOJ).

Your email suggests that onsite general fill material must meet all the requirements in Table 2's Criteria B. That reading conflicts with the FRESOW language agreed to by the parties in the Consent Decree. For convenience, the language in question from the CD is as follows:

> If onsite materials do not exceed the Waste Identification Criteria in Table 1 of Appendix 1, the material may be used onsite as general fill provided it meets all other requirements for general fill in Table 2 of Appendix 1 (e.g., texture, pH).

On its face, this language ("Onsite Material Language") allows for onsite materials that do not exceed the Table 1 criteria to be used as general fill if they meet "all other requirements" for general fill set forth in Table 2, for example, texture and pH. The State advocates for a more "expansive" reading of "e.g." to include all of the Table 2 criteria, explaining that "e.g." "was used throughout the FRESOW when referring to the Table 2 criteria." As an initial matter, the State's explanation does not appear to be correct. The only uses of "e.g." when referring to Table 2 that EPA has been able to locate in the FRESOW appear in the above Onsite Material Language. That aside, the use of "e.g." does not suggest that the metals limitations in Table 2 must be met for onsite fill. Instead, the examples provided -- texture and pH -- contextualize the "other requirements" referenced in the Onsite Material Language. Texture and pH are two of the seven non-metals criteria in Table 2's Criteria B; the others are course fraction, EC/Salinity, SAR, soil saturation percentage, and

vegetation. These seven criteria are the "other requirements" referenced in the Onesite Material Language. If all of Table 2 were intended to be included, there would be no need for either the word "other" or a parenthetical with examples to help contextualize those "other requirements." Note that the Onsite Material Language does not inherently authorize the use of onsite material with a metals content below the Table 1 criteria in all circumstances – the permissive "may" is used, rather than "must" or "shall." EPA, in consultation with DEQ, would not authorize use of such material as general fill if the proposed use was not protective of human health and the environment.

EPA and DOJ believe the conclusion that the Table 2 metals requirements must apply to onsite general fill material misreads the FRESOW in several ways. First, such a conclusion renders the initial clause of the Onsite Material Language relating to the Table 1 Waste Identification Criteria meaningless. If the intention was for all material to meet the metals criteria of Table 2 in order to be suitable as general fill, there would have been no need to include the initial clause delineating certain onsite material that does not exceed the Waste Identification Criteria of Table 1, because any material meeting all the criteria in Table 2 would never exceed the limits in Table 1.

Second, the most logical understanding of what "all other requirements" refers to in reference to Table 2 is the non-metal requirements of Table 2. Because the first part of the Onsite Material Language refers to the Waste Identification Criteria of Table 1, the term "other" is used to distinguish the parameters already provided for in Table 1 (the metals criteria) from those additional requirements provided for in Table 2. As stated above, reading the term "other" to incorporate the metals criteria from Table 2 renders both the initial clause of the Onsite Material Language and the word "other" meaningless.

Third, the Consent Decree language that the State provided in its analysis does not contradict the Onsite Material Language. The FRESOW language from sections 1.1.2, 2.1.2, 3.1.2, and 4.1.2 that the State cites as "directly contradictory" in fact is directly consistent with the Onsite Material Language in the FRESOW. Because the Onsite Material Language addresses material that does <u>not</u> exceed the Waste Identification Criteria of Table 1, and the FRESOW language the State cites as contradictory concerns material that does exceed the Waste Identification Criteria of Table 1, the State's language simply does not concern the onsite material at issue. Further, the provisions the State cites that include the initial condition that material be "suitable for use as backfill" under Appendix 1, Table 2 are also consistent with EPA and DOJ's understanding of the FRESOW. Because the Onsite Material Language renders certain onsite material suitable for use as general fill provided it does not exceed the Waste Identification Criteria of Table 1 and meets the non-metals requirements of Table 2, the "unless suitable for use as backfill" clause in the FRESOW works in concert with EPA and DOJ's understanding, not against it. In order for the State's interpretation to work, one must either ignore the Onsite Material Language entirely, or use an alternative interpretation of the Onsite Material Language. Ignoring the language renders it meaningless, and no alternative has been articulated. Reading the FRESOW as a whole, that is, giving meaning to both the Onsite Material Language and to Table 2, leads to the conclusion that the onsite material in question could indeed be suitable for use as general fill under Appendix 1, Table 2. The State also quotes language related to "inert solid waste and construction debris," as directly contradictory, but this language addresses a specific subset of material and is consistent with EPA and DOJ's understanding of the Onsite Material Language.

The State suggests that EPA's intention to require location-specific restrictions on the use of onsite material as general fill "calls into question the reasonableness of [EPA's] interpretation and its consistency with the goals of CERCLA." EPA does not agree. As with all design elements in the CD, appropriate parameters must be in place to ensure the remedy is protective and consistent with the Site's remedial goals. CERCLA's design process is intended to facilitate just that. The fact that EPA will exercise its authority to ensure a design element in the CD is protective of human health and the environment is fully consistent with the goals of CERCLA. More specifically, the Onsite Material Language explicitly states, "the material *may* be used" (emphasis added). The permissive term "may" affirms EPA's authority to determine what design criteria must be in place to ensure any use is protective of human health and the environment. This language, which was agreed to by all the CD parties, including DEQ and NRDP, provides EPA, in consultation with DEQ, the authority to place additional restrictions on the use of any such onsite material.

While EPA and DOJ do not agree that the use of onsite material constitutes a change to the CD (i.e., the SOW), EPA believes that the Onsite Material Language provides discretion to EPA, in consultation with DEQ, to require restrictions on the use of any such material as part of the design process. As indicated in EPA's April 20, 2023, letter, EPA believes that the proper place to memorialize such restrictions is in the Backfill Material Characterization and Reuse Plans, as contemplated in the FRESOW. These plans must be approved by EPA, in consultation with DEQ, and any restrictions included in the Plans will be enforceable as part of the CD.^^ EPA believes that the State and EPA are likely in alignment on which location-specific controls may be warranted. EPA therefore recommends the CD parties continue in earnest to work through the design details so that work at the Site may continue.

Thank you,

Erin

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^^*See* Paragraph 79 of the BPSOU CD, "'Compliance' by the Settling Defendants shall include completion of the activities and obligations, including payments, required under this Consent Decree or any work plan or other deliverable approved under this Consent Decree identified below in accordance with all applicable requirements of law, this Consent Decree, the SOW, and any plans or other documents approved by EPA pursuant to this Consent Decree and within the specified time schedules established by and approved under this Consent Decree.".

Erin Agee (she/her)
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Environmental Collaboration and Conflict Resolution Specialist
US EPA Region 8 | Office of Regional Counsel | CERCLA Enforcement Section
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Phone: (303) 312-6374 | agee.erin@epa.gov

From: Morgan, Jonathan <JMorgan3@mt.gov>
Sent: Thursday, May 25, 2023 11:37 AM

To: Jackson, Sarah <Jackson.Sarah@epa.gov>; Bielenberg, Ben <Bielenberg.Ben@epa.gov>; Poetter, Joe <poetter.joe@epa.gov>; Urdiales, Aaron <Urdiales.Aaron@epa.gov>; Greene, Nikia <Greene.Nikia@epa.gov>; Schefski, Kenneth (KC) <Schefski.Kenneth@epa.gov>; Madigan, Andrea <Madigan.Andrea@epa.gov>; Thompson, Christopher <Thompson.Christopher@epa.gov>; Agee, Erin <Agee.Erin@epa.gov>; Lindsey, William <Lindsey.William@epa.gov>; Harris, Harley <HarleyHarris@mt.gov>; Steinmetz, Amy <ASteinmetz@mt.gov>; Garcin-Forba, Katherine <Katie.Garcin-Forba@mt.gov>; Ford, Jim <JFord@mt.gov>; pcunneen@montana.gov; Reed, Daryl <dreed@mt.gov>; Hausrath, Katherine <khausrath@mt.gov>; Balliew, Carolina <Carolina.Balliew@mt.gov>
Cc: Balliew, Carolina <Carolina.Balliew@mt.gov>; Cunneen, Padraig <PCunneen@mt.gov>
Subject: RE: Follow-up Meeting NRDP/MDEQ/EPA

All,

Thank you for meeting Monday afternoon. As you requested, we are providing the analysis as to why we do not think the interpretation set out in EPA's April 20, 2023, letter is the only plausible one for several reasons. This analysis represents both NRDP and DEQ's position. First, there are alternative ways to read the word "other" and the associated punctuation in the parentheticals in the sentence EPA relies on (the use of "e.g."). The State's understanding is that EPA has elected to read this parenthetical as only applying to soil texture requirements, essentially reading the FRESOW to state,

> "If onsite materials do not exceed the Waste Identification Criteria in Table 1 of Appendix 1, the material may be used onsite as general fill provided it meets all other [soil texture] requirements for general fill in Table 2 of Appendix 1 (e.g., texture, pH). FRESOW at Section 1.1.3."

The State's view is that this interpretation unnecessarily introduces language into the CD that the parties elected not to include in the final version of the FRESOW. As written, the language in the FRESOW states that on-site material may be used as backfill provided it meets all other requirements found in Table 2. The parenthetical, while limited to soil texture requirements, is phrased as the e.g. "for example," rather than the i.e. "that is," "therefore," or "specifically." While use of the i.e, would tend to support EPA's reading of this section of the FRESOW, the e.g. was used throughout the FRESOW when referring to the Table 2 criteria. A more inclusive reading of the Table 2 criteria, which is encouraged using the more expansive e.g, opposed to the narrowing i.e., is consistent with our second and third points below.

Second, there are other, directly contradictory clauses in pertinent parts of Attachment C that make clear that backfill contaminant levels are governed by Table 2 without distinguishing between where that backfill came from. We attach a table that identifies some of that contradictory language. For example, the FRESOW requires that any backfill sources from offsite materials or on-site inert solid waste meet all the Table 2 criteria. Further, on-site waste materials may not be rehabilitated by mixing the waste with clean off-site material, as blending of waste materials with clean material is clearly prohibited. If we accept this intent to ensure a baseline level of protectiveness of backfill material, then the parties must view the use of on-site material that exceed backfill suitability criteria for contaminants as a change to the scope of work.

Finally, EPA's own interpretation recognizes the need to apply "location-specific restrictions" to the use of higher contaminant-level backfill to ensure protectiveness, which calls into question the reasonableness of the interpretation and its consistency with the goals of

CERCLA. As written, the FRESOW simply states that materials that meet Table 2 backfill criteria may be used as fill below the Diggings East and Buffalo Gulch stormwater basins and the Diggings East and Northside Tailings sedimentation basins. No further allowed locations nor any location-specific restrictions are included, as the parties agreed it would be protective to use materials as backfill in these areas if they met the Table 2 criteria. The addition of location-specific restrictions to materials that do not meet all the suitability criteria for backfill, while potentially reasonable as a modification to the FRESOW (depending on the allowed locations), illustrates that the parties never agreed to the use of those materials as backfill pursuant to the scope of the remedy as written in the CD.

We believe that if all parties could recognize that this is an area where there are two plausible ways to read the CD, it would then be clear that applying Table 2 contaminant criteria to all sources of fill is the more protective – and thus applicable – interpretation. As a result, any determination to utilize fill (onsite or offsite) in a manner not consistent with Table 2 would require an analysis (e.g. basis/need, protectiveness, location-specific measures) and decision under Paragraph 27 of the BPSOU CD.

Please let us know if you would like to further discuss.

Sincerely,

Jonathan Morgan | *Legal Counsel*
Montana Department of Environmental Quality
Office: 406-444-6589 | Mobile: 406-465-6704

DEQ Montana Department of Environmental Quality

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How did we do? » [arcg.is]

-----Original Appointment-----
From: Jackson, Sarah <Jackson.Sarah@epa.gov>
Sent: Wednesday, May 10, 2023 9:16 AM
To: Jackson, Sarah; Bielenberg, Ben; Poetter, Joe; Urdiales, Aaron; Greene, Nikia; Schefski, Kenneth (KC); Madigan, Andrea; Thompson, Christopher; Agee, Erin; Lindsey, William; Harris, Harley; Steinmetz, Amy; Garcin-Forba, Katherine; Morgan, Jonathan; Ford, Jim; pcunneen@montana.gov; Reed, Daryl; Hausrath, Katherine
Cc: Balliew, Carolina; Cunneen, Padraig
Subject: Follow-up Meeting NRDP/MDEQ/EPA
When: Monday, May 22, 2023 2:30 PM-3:30 PM (UTC-07:00) Mountain Time (US & Canada).

Where: Microsoft Teams Meeting

Agenda:

1. Opening Remarks – Ben/Harley/Amy
2. Discussion of Paragraph 27 – Harley

- Outline the purpose and intent of Paragraph 27 and what does and does not constitute a Modification
  - NRD/DEQ – Position Clarification
  - EPA – Position Clarification

4. Attachment C – Harley

- Outline the purpose and intent of Attachment C
  - NRD/DEQ – Position Clarification
  - EPA – Position Clarification

6. Technical Workgroups - Ben

- Guidance for Technical Workgroup
  - Re-engage to continue analyses of onsite material

8. Action Items and Next Steps – Ben/Harley/Amy

Meeting scheduled by Sarah Jackson, Jackson.Sarah@epa.gov

Microsoft Teams meeting

Join on your computer, mobile app or room device
Click here to join the meeting [teams.microsoft.com]

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Passcode: Bbe6M7
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sip:teams@video.epa.gov
Video Conference ID: 115 201 343 1
Alternate VTC instructions [video.epa.gov]

Or call in (audio only)

Attachment B

Table 2 of 4: Comparison of EPAs new General Fill definition for BPSOU to other jurisdictional requirements to protect groundwater from impacts of contaminated infiltration (mg/kg dry weight)

Contaminants (mg/kg)	EPA's New General Fill Contaminant Criteria (2023)[1]	Existing BPSOU CD Table 2 General Fill Contaminant Criteria (2023)[2]	EPA Residential Soils for Protection of Groundwater (2022)[5]	Maryland Cleanup Standards to Protect Groundwater (2018)[12]	NJ Migration to Ground Water Soil Remediation Standards (2021)[7]
Arsenic	200	200	0.29	0.03	19
Cadmium	20	20	0.38	1.4	1.9
Copper	5,000	1,000	46	56	910
Lead	5,000	1,000	14		90
Mercury	10	10	0.14	0.066	0.1
Zinc	1,000	1,000	370	740	930
Totals =	**11,230**	**3,230**	**430**	**797**	**1,949**
General Fill MACC:MACC [9]	**1.0**	**3.5**	**26.1**	**14.1**	**5.8**

Notes:

1 - New General Fill Criteria Proposed by EPA in their April 21, 2023 letter to NRDP (2023).

2 - General Fill Criteria in Attachment C, Table 2 of the BPSOU CD. The definition of Waste in the CD is in Table 1. If three of the six contaminant criteria listed are exceeded or any one contaminant is above 5,000 mg/kg then, the material is considered tailings, waste, or contaminated soil (i.e.

5 - EPA Regional Screening Level (RSL) Resident Soil, Protection of Groundwater Table SSL (TR=1E-06, HQ=1, 2022)

7 - NJ Soil and Soil Leachate Remediation Standards for the Migration to Ground Water Exposure Pathway Basis and Background (2021)

8 - As defined in EPA's Unilateral Administrative Order (UAO) for BPSOU

9 - Ratio of EPA's new General Fill Criteria Total Maximum Allowable Contaminant Concentration (MACC) to comparison MACC.

12 - State of Maryland, Department of Environment, Cleanup Standards for Soil and Groundwater (2018). Standard based on EPA RSLs May 2018 SSLs for protection of groundwater migration using a

Table 3 of 4: Comparison EPAs new General Fill definition for BPSOU to maximum allowable concentrations for vegetation and terrestrial receptors (mg/kg dry weight)

Contaminants (mg/kg)	EPA's New General Fill Contaminant Criteria (2023)[1]	Existing BPSOU CD Table 2 General Fill Contaminant Criteria (2023)[2]	State of Montana and CFROU Vegetation Suitability Criteria (2023)[11]	EPA Ecological Soil Screening Levels (2005)[6]			
				Plants	Soil Invertebrates	Avian	Mammals
Arsenic	200	200	30	18		43	46
Cadmium	20	20	4	32	140	0.77	0.36
Copper	5,000	1,000	100	70	80	28	49
Lead	5,000	1,000	100	120	1,700	11	56
Mercury	10	10					
Zinc	1,000	1,000	250	160	120	46	79
Totals =	**11,230**	**3,230**	**484**	**400**	**2,040**	**129**	**230**
General Fill MACC:MACC [9]	**1.0**	**3.5**	**23.2**	**28.1**	**5.5**	**87.2**	**48.7**

Notes:

1 - New General Fill Criteria Proposed by EPA in their April 21, 2023 letter to NRDP (2023).

2 - General Fill Criteria in Attachment C, Table 2 of the BPSOU CD. The definition of Waste in the CD is in Table 1. If three of the six contaminant criteria listed are exceeded or any one contaminant is above 5,000 mg/kg then, the material is considered tailings, waste, or contaminated soil (i.e. "waste") (2018).

6 - EPA Ecological Soil Screening Levels for protection of plants, soil invertebrates, birds, and mammals (2005)

9 - Ratio of EPA's new General Fill Criteria Total Maximum Allowable Contaminant Concentration (MACC) to comparison MACC.

11 - Clark Fork River Operable Unit (CFROU) Strategic Plan Table 4 (2023)

Anacondas Total Metal Index

Soil Metal Index (sum of total As+Cu+Zn in mg/kg)	General Plant Stress Level Due to Soils Conditions
700 -	Very Low
1,200	Low
1,450	Low - Moderate
1,700	Moderate
2,300	Moderate - High
2,900	High
3,500+	Very High

The need to determine an in-situ threshold for residual contamination that Total Metal Index (TMI) correlates metal and metalloid concentrations (either the sum of total arsenic [As], copper [Cu], and zinc [Zn], or only arsenic) with qualitative plant stress levels. Arsenic is useful as an indicator contaminant both because increases and decreases in arsenic concentrations were consistent with other combined metal concentrations and because EPA used it at the Site to determine human health risks for different land uses.

The TMI is being used to determine if in-situ remediation is likely to be successful based on the degree of contaminant related phytotoxicity. If the post-remediation plant stress level is likely to be moderate or higher (>1,700 TMI),used at high and very high TMI areas include stripping and removal of the very contaminated surface soil layer, or applying cover soil and then seeding.