Appendix B: MA 004 Detailed SMC Comments in Tabular Format

MA 004 DEIS Comment Table (DEIS)							
Comment No.	**Chapter**	**Section**	**Title/Subsection**	**Page**	**Paragraph**	**Excerpt**	**Comment**
1	Summary	S.2.1	Forest Service Purpose and Need	S-2	1	SMC proposes to continue to exercise its existing rights to access ore from the J-M Reef, extending mine life for 11 to 14 years, based on current production rates, by expanding waste rock and tailings storage.	Rather than including a temporal component to the Purpose and Need, SMC recommends that the Forest Service consider revising the language in the Draft EIS to be more consistent with purpose stated in the Federal Register published on May 27, 2022, "The Forest Service's purpose for action is to consider approval of Stillwater Mining Company's East Boulder Plan of Operations Amendment 004 to expand operations on National Forest System lands in order to continue to develop and mine platinum and palladium deposits from the J-M Reef."
2	Summary	S.2.2	DEQ Purpose and Need	S-3	1	Benefits , pursuant to MEPA (ARM 17.4.617), are described in Section 1.2.3.	SMC suggests including a description of the benefits in the Summary section.
3	Summary	S.3	Regulatory Framework	S-5	Table S.3-1	Sweet Grass County	SMC suggests adding DNRC - Water Rights; EPA - UIC Permit; Sweet Grass Conservation District - 310 Permit.
4	Summary	S.5.2	Alternative 2 - Proposed Action	S-8	3	A total of 15 years is assumed for the closure and post-closure phases.	The Plan of Operations and appendices (including EBM Closure Plan) list Closure phase is up to 15 years for the Lewis Gulch TSF and Dry Fork WRSA. Post-Closure phase is up to 10 years for both facilities. Closure and Post-Closure phases are to be reassessed every 5 years. Discrepancies with the length of time are carried out through the DEIS, Tech Memos, and Specialist Reports.
5	Summary	S.5.2	Alternative 2 - Proposed Action	S-8	3	Post-closure, which includes water treatment and monitoring, would last approximately ten years for the Lewis Gulch TSF and the Dry Fork WRSA.	Water treatment and monitoring only occurs during Closure period. Post-closure (10-years) includes 5-year and event driven inspections (i.e., 1 in 500 yr rainfall event or 1 in 2,500 yr earthquake).
6	Summary	S.5.3	Alternative 3 - Agency Modified	S-9	4	Storm water percolation pond locations and the embankment toe would be allowed to be altered as necessary to meet a minimum outer embankment slope criteria of 2.H:1V.	SMC suggests rewording as follows: "...to meet overall embankment slope criteria of 2H:1V or flatter." (Please note that there typically not a period after the "2" in "2H:1V").
7	Summary	S.5.3	Alternative 23	S-10	3	Storm water percolation pond locations and the embankment toe would be allowed to be altered as necessary to meet a minimum outer containment slope steepness criterion of 2.5H:1V.	Consider rewording as follows: "...to achieve overall slope steepness criterion of 2.5H:1V." (Please note: lateral undulations and small scale-sub-watershed ridges, etc. will necessitate locally steeper variations in the 2.5H:1V slope steepness. SMC expects localized slope sections/areas may be as steep as about 1.8H:1V to facilitate the landform architectural design features, but the overall slope (crest to toe) would still be maintained at 2.5H:1V.)
8	Summary	S.5.3	Alternative 3 - Agency Modified	S-10	4	Soil Salvage and Storage: Geomorphic landform design would be limited to the volume of soil available within the proposed footprint and the agencies would require SMC to salvage all usable topsoil and sufficient subsoil to meet calculated reclamation needs. For both facilities, geomorphic landform design would be limited to the volume of soil available within the proposed footprint. The surface area for associated soil stockpiles may be increased by as much as 20 percent to accommodate the necessary soil volumes needed to meet design criteria.	This is confusing as written and appears to say that the volume of soil used for implementation of geomorphic landform design will be limited to that which is salvaged beneath the footprint of the new facilities when, in fact, a combination of newly salvaged and currently stockpiled soil will be required to complete soil placement/final reclamation across the mine site. The language in the EIS states "useable" topsoil and "sufficient" subsoil but does not define "useable". The salvage cutoff in the Plan of Operations is < 60% coarse fragments. All available suitable soil will be salvaged from beneath disturbed areas. However, given the generally shallow, rocky nature of soils in the Dry Fork WRSA area, SMC would like to have a contingency for lower (i.e., thinner) soil replacement depths if adequate soil volumes are not available as a result of the selection of Alternative 3.
9	Summary	S.5.4	Summary Tables	S-13	Table S.5-2	New Disturbance	SMC suggests that the "New Disturbance" portion of the table include not only total disturbance, but also a breakdown of the disturbance as it relates to private and federal lands.
10	Summary	S.5.4	Summary Tables	S-13	Table S.5-2	At closure, the Lewis Gulch TSF would be capped with a 24-inch layer of waste rock sourced from the Dry Fork WRSA and random fill from the Lewis Gulch TSF embankment along with installation of a geosynthetic reinforcement layer to improve trafficability over select areas of the TSF surface.	This is not a complete description of the cap. SMC suggests noting that 28 inches of growth material (topsoil + subsoil) will be placed over the fill and 12 inches of soil material over the embankments.

11	Summary	S.5.4	Summary Tables	S-14	Table S.5-2	The Dry Fork WRSA would be constructed with a consistent 2.5H:1V slope to facilitate reclamation and to maintain long-term slope stability.	Similar to the comment above relating to the Lewis Gulch TSF, there is no mention of soil placement at closure of the Dry Fork WRSA in the table. SMC suggests noting that 18 inches of topsoil will be placed on the crest of the Dry Fork WRSA. Also, with respect to slope, throughout the documents SMC suggests replacing "consistent" with "average."
12	Summary	S.5.4	Summary Tables	S-19	Table S.5-3	Impacts on soil and reclamation under Alternative 2 include the loss of vegetation and soil during the excavation of roads, stockpiles, and the tailings and waste rock storage facilities; compaction of soils where equipment use is concentrated; and potential short-term increases in sedimentation.	SMC suggests clarifying that the loss of a vast majority of soil would be temporary, as it will be replaced and utilized for reclamation.
13	Summary	S.5.4	Summary Tables	S-21	Table S.5-3	Direct impacts such as injury and mortality would be avoided by conducting migratory bird surveys prior to construction. If an active raptor or other migratory bird nest is known or located within the disturbance area, ...	SMC suggests changing to "surveys for migratory birds of special concern".
14	Summary	S.5.4	Summary Tables	S-24	Table S.5-3	Indirect and induced impacts would include loss of about 1,430 jobs (primarily in south-central Montana), loss of about $1,867,000 in Class 2 property taxes and metal mine license taxes in Sweet Grass County,	SMC suggests clarifying that the loss of $1,867,000 in Class 2 property taxes would be annually. As written, the reader could be misled into thinking the total loss in tax revenue for Alternative 1 is only $1,867,000, which is incorrect.
15	Chapter 1	1.1	Introduction	1-1	2	The site consists of the following: an underground platinum and palladium mine that sits beneath the East Boulder Plateau; access tunnels (shafts); plant site facilities...	Please change "shafts" to "adits". Shafts are vertical, adits are horizontal.
16	Chapter 1	1.1	Introduction	1-1	3	In addition, the East Boulder Mine production rate limits would be removed, and the new limit would be based on a steady-state level of 600 employees and the production limits in Montana Air Quality Permit (MAQP) No. 2653-07 : 1,095,000 tons of ore production, 1,095,000 tons of	Please see SMC's Comment Letter regarding production rate.
17	Chapter 1	1.2	DEQ Purpose and Need	1-8	2	an ongoing tax base to state and local governments; and	SMC recommends making this a separate bullet.
18	Chapter 1	1.3	Project Location and History	1-13	Figure 1.3-1	Figure 1.3-1	SMC suggest adding existing Surface Soil Stockpile A1 and A2 areas between borrow area and Stage 6 TSF.
19	Chapter 1	1.4.3	Regulatory Framework	1-18	2	In addition, personal vehicle traffic is limited to a maximum of 35 permitted vehicles per day (GNA 2009)	SMC recommends replacing "personal" with "light". This is a more accurate description because SMC does not allow any "personal" vehicles to access the site.
20	Chapter 1	1.4.3	Regulatory Framework	1-18	2	(vehicles used by contractors to perform regular contract work at the mine and by business-related visitors, such as vendors and consultants; GNA 2009).	The traffic plan also allow up to 10 commercial deliveries per day limit.
21	Chapter 2	2.1.2.2	East Boulder TSF	2-3	3	The existing East Boulder TSF was initially approved for construction in 1993 by the agencies under Operating Permit No. 00149 and the Forest Service POO. SMC constructed the impoundment in stages to use the waste rock for construction of the impoundment walls as the waste rock was being generated.	SMC suggests replacing "impoundment walls" with "TSF embankments".
22	Chapter 2	2.1.2.2	East Boulder TSF	2-3	3	The existing TSF is a staged impoundment with Stages 1 and 2 establishing the foundation of the facility.	SMC suggests changing this to: "...with Stage 1 and 2 establishing the TSF basin." The foundation area has expanded with each downstream raise to the TSF.
23	Chapter 2	2.1.2.2	East Boulder TSF	2-3	3	Stages 5 and 6 are being constructed concurrently with a scheduled completion of Stage 5 (elevation 6,330 feet) in 2025, and Stage 6 to reach a final crest elevation of 6,334 feet in 2030 .	SMC suggests revising as follows: "Stages 5 and 6 are being constructed concurrently with a scheduled completion for Stage 5 (crest elevation 6,330 feet) in 2025 and Stage 6 (crest elevation 6,344 feet) in 2027."
24	Chapter 2	2.1.2.3	Boe Ranch	2-7	2	When and if constructed, the LAD system would consist of an additional pipeline from the injection well.	SMC suggests using the phrase "injection well pumphouse".
25	Chapter 2	2.1.2.4	East Boulder Plateau	2-9	Figure 2.1-2	Figure 2.1-2 East Boulder Plateau	Please modify the Graham Creek vent raise location so it is accurately depicted inside the boundary of BUD63.
26	Chapter 2	2.1.2.4	East Boulder Plateau	2-9	Figure 2.1-3	Figure 2.1-3 Water Management Diagram	Please change Injection well from 500 gpm to 1050 gpm. See pg. 68: "BRIW-1 was completed in April 2019, indicating a design flow rate of 1,050 gallons".

27	Chapter 2	2.1.3	Water Management	2-11	Figure 2.1-3	Figure 2.1-3 Water Management Diagram	Direct discharge to East Boulder River is permitted as Outfall 001 (yet to be constructed). SMC recommends removing "as last resort" as SMC has chosen to dispose treated water via other disposal options (e.g., perc pond). Suggest using, "if necessary."
28	Chapter 2	2.1.3.2	Mine and Process Water	2-13	4	The mill water-TSF supernatant water system is a closed loop that recycles TSF supernatant to meet 100 percent of the process water requirements for the concentrator.	Mill Water - TSF Supernatant is only part of the water system, and its not particularly closed. Consider revising to "The mill water-TSF supernatant water system recycles TSF supernatant to meet 100 percent of the process water requirements for the concentrator."
29	Chapter 2	2.1.3.2	Mine and Process Water	2-14	2	Basin underdrain water originates from the underdrain layer and flows approximately 75 gpm by gravity to the underdrain pump-house where it is pumped either back into the TSF supernatant pond or the mine water recycle pond, depending on current water balance needs.	The 2021 and 2022 Annual EOR reports lists the flows as "varies" with a total amount of 31M and 23M respectively.
30	Chapter 2	2.1.4	Reclamation, Closure, Post-closure	2-15	4	These individual plans would reassess key efforts including soil savage , storage, redistribution, and revegetation with appropriate seed mix selection.	Please change "savage" to "salvage".
31	Chapter 2	2.1.5	Closure, Post-Closure, Long-term Monitoring and Maintenance	2-20	5	Physical inspections of the East Boulder TSF would be conducted by the EOR on an annual basis during closure (Years 1 through 3) and post closure (Years 4 through 8).	Stage 6 TSF closure plan includes for a 2-3 year transition phase (Closure Cap construction), 2 to 5 years for Active Closure (regular inspections and monitoring), followed by Passive Closure (post-closure period, event driven inspections). SMC suggests revising this to state: "...during closure (Years 1 to 8) and post-closure (following Year 8)."
32	Chapter 2	2.1.5	Closure, Post-Closure, Long-term Monitoring and Maintenance	2-20	5	Periodic review of the TSF closure by the Independent Review Panel (IRP) would also be completed at a frequency detailed in the Lewis Gulch TSF Tailings Operations, Maintenance and Surveillance (TOMS) manual	This section is discussing the East Boulder TSF, not the Lewis Gulch TSF. The latest TOMS manual for the East Boulder TSF should be referenced.
33	Chapter 2	2.2	Alternative 2 - Proposed Action	2-22	3	The Dry Fork WRSA would be a double-lined facility with an underdrain collection system constructed in three stages from native borrow material with approximately 101.9 acres of total disturbance and provide 5.4 million cubic yards of storage (approximately 22 years of waste rock storage, based on current production rates).	SMC suggests clarifying that the acreage disturbed by the Dry Fork WRSA would only include approximately 44.2 acres of NFS land. Consider revising as follows: "...approximately 101.9 acres of total disturbance (comprising of approximately 44.2 acres of NFS land and approximately 57.7 acres of private land) and provide..."
34	Chapter 2	2.2.1	Permit/POO Boundary and Disturbance	2-28	1	The total disturbance associated with the Dry Fork WRSA, including the access road, haul road, laydown, soil stockpiles, drainage and seepage control, Underdrain Collection Pond, and powerline is estimated to be approximately 102 acres with the majority (101 acres) located outside of the currently permitted disturbance area.	We suggest clarifying that the acreage disturbed by the Dry Fork WRSA would only include approximately 44.2 acres of NFS land. Consider adding the following clarifying language: "Of the approximately 101 acres, approximately 44.2 acres are NFS land and approximately 57.7 acres are private land."
35	Chapter 2	2.2.2.1	Lewis Gulch TSF	2-29	3	Seepage of water through the basin underdrain liner system would flow at an estimated rate of 2 to 12 gpm.	Please clarify this to state: "seepage of water through the TSF liner system..." As currently written, it may mislead readers into believing that this is the flow through the underdrain system. Consider adding a schematic that accurately depicts the TSF liner system and underdrain collection.
36	Chapter 2	2.2.2.1	Lewis Gulch TSF	2-29	3	Monitoring wells EBMW-3, EBMW-8, EBMW-9, EBMW-10, EBMW-12 and EBMW-13 would be abandoned prior to construction and replacement groundwater monitoring wells would be established outside the footprint.	The Plan of Operations states that these wells will be relocated or decommissioned. As written, this sentence could be misinterpreted that all of the listed monitoring wells will be replaced. Consider changing text as follows: "...and EBMW-13 would be abandoned prior to construction. Additional monitoring wells are proposed outside of the footprint of the Lewis Gulch TSF to provide downgradient monitoring for both the East Boulder TSF and Lewis Gulch TSF."
37	Chapter 2	2.2.2.2	Dry Fork WRSA	2-30	1	...resulting in approximately 101.9 acres of total disturbance (Table 2.2-1).	We suggest clarifying that the acreage disturbed by the Dry Fork WRSA would only include approximately 44.2 acres of NFS land. Consider revising as follows: "...approximately 101.9 acres of total disturbance (comprising of approximately 44.2 acres of NFS land and approximately 57.7 acres of private land) (Table 2.2-1)."
38	Chapter 2	2.2.2.2	Dry Fork WRSA	2-30	1	Dry Fork WRSA would be constructed with a consistent 2.5H:1V slope to facilitate reclamation and to maintain long-term slope stability.	See previous comments regarding slope. SMC recommend revising to state: "...constructed with an overall slope of 2.5H:1V to facilitate…"

39	Chapter 2	2.2.2.2	Dry Fork WRSA	2-30	2	UCP water would be pumped to either the WTP, East Boulder Mine TSF, or Lewis Gulch TSF based on water balance needs and timing of TSF construction via the WRSA water transfer pipeline buried under the UCP access and WRSA haul roads	We recommend adding the italicized language as follows: "UCP water would be pumped *for treatment and disposal or reuse in mining operations* to either the..."
40	Chapter 2	2.2.2.2	Dry Fork WRSA	2-30	2	The UCS would be sized to provide temporary storage of a 1-in-25 year, 24-hour precipitation event, and the UCP would be sized to convey runoff resulting from the 1-in-200 year, 24-hour precipitation event.	The UCP is sized to provide temporary storage of the 1-in-25 year, 24-hour precipitation event. The UCS and UCP include overflow swales and spillways to convey the 1-in-200 year, 24-hour precipitation event.
41	Chapter 2	2.2.2.2	Dry Fork WRSA	2-30	3	The overflow swale and percolation area would be constructed with coarse riprap underlain by nonwoven geotextile.	The key in Figure 2.2-2 shows a symbol for percolation area but no percolation areas are displayed on the figure.
42	Chapter 2	2.2.2.2	Dry Fork WRSA	2-33	Figure 2.2-2	Dry Fork WRSA Development	Relocated Road should wrap around Stage 6 Embankment Underdrain Pond. Also, the Relocated Road does not align near the Dry Fork Bridge (follows existing road).
43	Chapter 2	2.2.3	Water Management	2-35	1	Management of process water generated at the Lewis Gulch TSF and Dry Fork WRSA would use the existing WTP and similar management and disposal strategies currently in use at the East Boulder Mine. SMC would submit an application to modify its MPDES permit coverage under MT0026808; any change in effluent quality would be subject to nondegradation review.	This language is not correct and should be removed or revised. Lewis Gulch TSF supernatant water will primarily be used in the mill circuit and Lewis Gulch TSF underdrain water will either be pumped back into the Lewis Gulch TSF supernatant pond or to the mine water recycle pond. Lewis Gulch TSF water will only be sent to water treatment if necessary. SMC understands that the MPDES permit may need to be modified to include the TSF water in the MPDES permit. The East Boulder Mine currently treats infiltrated stormwater collected in the embankment underdrain collection system and discharges it to the MPDES Outfalls. The water from the Dry Fork WRSA is the same source (stormwater infiltration) and would not require a modification to the MPDES permit. Lastly, it is not correct that any change in effluent quality would be subject to nondegradation. Nondegradation criteria have always and are currently included in the MPDES effluent limits. Changes in effluent quality that are within the effluent limit will have no impact on the MPDES permit.
44	Chapter 2	2.2.3.1	Lewis Gulch TSF	2-35	3	Basin underdrain water would originate from the underdrain layer and flow by gravity to the underdrain pumphouse where, depending on water balance needs, it could be pumped back into the Lewis Gulch TSF supernatant pond or to the mine water recycle pond for treatment .	Water in the water recycle pond is not sent to treatment. Please revise this to state: "…mine water recycle pond for use in the mine."
45	Chapter 2	2.2.3.1	Lewis Gulch TSF	2-35	4	Water surpluses would be managed by transferring up to 20 MG per year from the Lewis Gulch TSF to the WTP via the basin underdrain system.	Please revise to include at the end of the sentence the following: "…underdrain system, and through mechanical evaporation."
46	Chapter 2	2.2.4.2	Dry Fork WRSA Haul Road and Bridge Construction and Existing Dry Fork Road Relocation	2-37	2	In Alternative 2, access to the Dry Fork WRSA would be via a new haul road that would be constructed from the East Boulder Mine access road (at the northeast corner of the East Boulder TSF) to the WRSA (**Figure 2.2-2**).	It would be helpful to include a sentence or paragraph clarifying that public access would be maintained on the existing Dry Fork Road with a modified entrance and parking area.
47	Chapter 2	2.2.8	Reclamation, Closure, Post-closure	2-39	2	A total of 15 years is assumed for the closure and post-closure phases.	Please note prior comment regarding Closure/Post-Closure. The Closure phase is anticipated to last up to 15 years for the Lewis Gulch TSF and Dry Fork WRSA. Post-Closure phase is anticipated to last up to approximately 10 years following the Closure phase. Both phases (Closure/Post-Closure) are to be reassessed at five-year intervals. This is inconsistent throughout DEIS/Tech Memos/Specialist Reports.
48	Chapter 2	2.2.8	Reclamation, Closure, Post-closure	2-39	2	Closure of each of these facilities would take up to five years and would occur when mining activities were complete and/or the facility capacities have been met.	Please clarify which facilities are being referenced.

49	Chapter 2	2.2.8.2	Dry Fork WRSA	2-40	5	During closure (a duration of approximately four years), the UCS would remain operational to transfer meteoric water directly to the WTP. If monitoring and modeling demonstrate achievability, during Year 4 of closure, a subsurface passive bioreactor system (passive system) would be constructed.	The duration is approximately 15 years which will be reassessed every five years.
50	Chapter 2	2.2.8.2	Dry Fork WRSA	2-40	5	Current modeling assumes the effluent of the passive system would be expected to achieve nitrogen nondegradation status and meet water quality nondegradation standards.	In several places, the draft refers to nondegradation requirements and nondegradation rules. It should clarify which parameter or rule it is referring to (i.e.: flow, nitrogen, other?) or just refer to compliance with the Water Quality Act. Specifically, when referring to nutrients, it should state compliance with the WQA, because the nondegradation requirements for nutrients are in flux. See, p. 2-40 (and throughout the document, including p. 3-137, 3-143)
51	Chapter 2	2.2.8.2	Dry Fork WRSA	2-41	1	SMC would review source control technologies throughout the lifespan of the Dry Fork WRSA to determine if any technologies are feasible to promote a shorter timeframe to meet water quality standards than the currently estimated nine years after cessation of waste rock placement. Following confirmation of suitable water quality, the passive treatment would be decommissioned and removed, the area would be regraded and revegetated, and the underdrain outlet pipework would drain to percolation areas.	Water treatment/disposal will continue for approximately four years after cessation of waste rock placement until discharge demonstrates adequate concentration for passive system. Passive system would then be installed and operated for approximately nine additional years (about 13 years total).
52	Chapter 2	2.3	Alternative 3 - Agency Modified	2-45	3	Alternative 3 was designed by the agencies to address issues and concerns raised in public scoping comments (see the *Public Scoping Report*; ERO 2022). Specifically, this alternative is intended to address the following public concerns:	SMC suggests replacing "designed" with "developed."
53	Chapter 2	2.3	Alternative 3 - Agency Modified	2-45	3	As proposed by SMC, the storm channel designs for the Dry Fork WRSA may be insufficient to convey storm water from large precipitation events (i.e., designed for a volume rather than peak flow).	This statement is incorrect. Storm water conveyance have been sized for peak flows resulting from specified return period events.
54	Chapter 2	2.3.1	Alternative 3 - Agency Modified	2-47	Figure 2.3-1	Alternative 3 – Agency-Modified Alternative	The relocated road appears to be shown within the Stage 6 Embankment (East). Please revise for accuracy.
55	Chapter 2	2.3.2	Required Design Criteria	2-49	2	Storm water percolation pond locations and the embankment toe would be allowed to be altered as necessary to meet a minimum outer embankment slope criteria of 2.H:1V.	SMC suggests replacing "a minimum outer" with "the overall embankment slope criteria of 2H:1V" (Please note that there typically not a period after the "2" in "2H:1V").
56	Chapter 2	2.3.2	Required Design Criteria	2-49	3	Storm water percolation pond locations and the embankment toe would be allowed to be altered as necessary to meet a minimum outer containment slope steepness criteria of 2.5H:1V.	Please change to "to maintain the overall slope steepness criteria of no more than 2.5H:1V ".
57	Chapter 2	2.3.7	Long-term Care and Maintenance	2-52	2	Using geomorphic landform design may lessen the long-term bond amount	SMC suggests using different terminology when referencing the long-term care and maintenance financial assurance. It is generally understood that bonds are released once the reclamation objectives are met. As we understand it, the long-term financial assurance the CGNF describes is not intended to be returned to SMC. Additionally, please clarify how Alternative 3 could lessen the long-term bond amount.
58	Chapter 2	2.3.7	Long-term Care and Maintenance	2-52	4	System failure of the reclaimed facilities at the East Boulder Mine is not expected to happen quickly or unexpectedly; rather, there will likely be signs beforehand that the reclaimed facility is not performing as designed. For example, standing water throughout the year on the TSF surface, water seeps along the toe of the WRSA, or a sediment discharge below a diversion ditch could all be evidence that a particular engineered system is not performing as intended.	Please clarify what "not expected to happen quickly or unexpectedly" means. What is this timeframe? Additionally, SMC suggests replacing system failure with the language used elsewhere in the DEIS to "the engineered facilities may be susceptible to system nonperformance over time" to more accurately reflect this future scenario. Also consider adding the following to the sentence, "...susceptible to system nonperformance '<u>or lowered performance</u>"..."

59	Chapter 2	2.3.7	Long-term Care and Maintenance	2-53	1	Impacts on resources from such failures would likely be minor at first but could escalate to more significant impacts if left unaddressed.	Please clarify what is meant by "more significant impacts." Consider removing the phrase or use different language. The DEIS does not identify any likely significant adverse impacts to environmental resources resulting from Amendment 004.
60	Chapter 2	2.4	Mitigations Common to Alts 2 and 3	2-55	Table 2.4-1	Mitigation 4: In each annual report to the agencies, SMC shall provide near-surface (within 200 feet vertically or laterally of the ground surface) stope elevations for the next 12 months of mining and disclose where mining occurred within 200 feet (vertically or laterally) of the ground surface in the previous 12 months. At a minimum, information concerning ground competency, distance to surface till, nearby water structures, topography of the surface features, and bolting/grouting/backfilling procedures shall be provided.	To the extent this stipulation seeks confidential business information (CBI) needed specifically for USFS purposes (which may include stope elevations and locations), SMC requests that the stipulation clarify that the information be provided directly to the USFS.
61	Chapter 2	2.4	Mitigations Common to Alts 2 and 3	2-55	Table 2.4-1	MItigation 10: To limit impacts on whitebark pine, SMC shall avoid all five-needled pines if identification is in doubt (limber pine exists in the Project area and can occur with whitebark pine at the upper limits of its habitat). Limber pine is present in the area of direct effects while whitebark pine is not. Because limber pine is a tree species that is in decline across the forest it is still desirable to avoid it whenever possible.	It would be more efficient and effective to require a detailed survey of the area proposed for disturbance to confirm or disprove the presence of whitebark pine. The phrase "shall avoid all five-needle pines, if identification is in doubt" is a subjective requirement. As Limber Pine is not a listed species, it seems an impractical mitigation to flag all five-needle pine trees or to ask equipment operators to avoid all five-needle pine trees.
62	Chapter 2	2.4	Mitigations Common to Alts 2 and 3	2-56	Table 2.4-1	Mitigation 14: SMC shall minimize impacts on wildlife during spring and summer migration and maintaining year-long wildlife movement connectivity.	Should this say "maintain" rather than "maintaining"?
63	Chapter 2	2.4	Mitigations Common to Alts 2 and 3	2-56	Table 2.4-1	Mitigation 14: Restrictions would include timing limitations on those activities that would disturb migrating animals during periods of high use (as determined by monitoring). Restrictions would be prescribed by CGNF and DEQ or MFWP wildlife biologists.	SMC requests that this restriction be further defined. Timing limitations can vary widely.
64	Chapter 2	2.6.1	Preferred Alternative	2-57	2	Under Alternative 3, the Dry Fork WRSA storm water channels would be sized to convey a 1-in-200 year, 24-hour precipitation event, while Alternative 2 has a storm channel design that may be insufficient to convey storm water from large precipitation events (i.e., designed for a volume rather than peak flow)	This statement is Incorrect. Storm water measures have been sized for peak flows resulting from specified return period events. The inclusion of geomorphic reclamation objectives would not change the sizing criteria.
65	Chapter 2	2.6.3	Implementation Steps for Selected Alternative	2-58	3	Within 30 days of the issuance of the RODs, SMC would submit a revised AM4 POO,	Please consider adding this to the mitigation list similar to Stipulation 2 on WRMP. Additionally, SMC requests that the agencies consider a longer timeframe than 30 days. Please see SMC Comment Letter.
66	Chapter 3	3.1.2	Prior NEPA/MEPA	3-5	Table 3.1-1	Group 10 Metals	Now Stillwater Critical Minerals.
67	Chapter 3	3.1.3	Description of Cumulative Actions	3-9	Figure 3.1-1	Figure 3.1-1 Comments	The location of Stillwater Mine's Hertzler TSF/LAD Area is not correct. Note: this figure is also used in the Specialist Reports. In addition, the Boe Ranch LAD Permit area is much larger than shown in Figure 3.1-1.
68	Chapter 3	3.1.3	Key Past, Present, or Reasonably Foreseeable Future Actions	3-12	Table 3.1-2	Benbow: 2011 to 2023	Please consider changing to reflect approved MA 013 changes. WTP will remain until suitable WQ is met, so past, present, and reasonably foreseeable.
69	Chapter 3	3.1.3.1	Past Actions	3-15	5	**Boe Ranch pipeline:** After analysis in the 2012 EIS (DEQ and Forest Service 2012a), SMC constructed a buried pipeline from the East Boulder Mine to the Boe Ranch in the NFS Road #205 road prism	The Boe Ranch pipeline was constructed in 2000/2001 following approval from the agencies under a minor revision.
70	Chapter 3	3.1.3.3	Future Actions	3-19	5	SMC submitted an application on April 10, 2023, to amend its operating permit and POO for the Stillwater Mine to allow for additional waste rock and tailings storage in 2023.	SMC suggests changing this to "SMC submitted a *draft* MA 14 application on April 10, 2023, to amend its operating permit and POO for the Stillwater Mine to allow for additional waste rock and tailings storage ~~in 2023~~."

71	Chapter 3	3.1.4	Projected Changes in Climate	3-20	5	Projected Changes in Climate	Consider giving Climate Change its own section rather than a subsection of the Chapter 3 Introduction.
72	Chapter 3	3.1.4.1	Project Area Climate	3-21	3	There are approximately 272 frost-free days per year at the mine site.	Please verify and/or provide a citation. It seems more likely to be 272 frost days and 93 frost-free days although 93 still seems like a high estimate.
73	Chapter 3	3.1.4.3	GHG Emissions Trends	3-28	Table 3.1-4	Sibanye-Stillwater's CO_2e Emissions for U.S. PGM Operations	Editorial: 4th Column, 1st Row should be 56,000 and 4th Column, 5th Row should be 375,000.
74	Chapter 3	3.1.4.3	GHG Emissions Trends	3-29	1	This annual CO_2e emissions total is equivalent to 82,114 gasoline-fired automobiles operating for one year	It may be useful to the reader to also compare EBM CO2 emissions to total CO2 emissions in the State of Montana. For example, the EBM CO2 emissions represent 0.00xxx% of the total CO2 emissions in the State of Montana.
75	Chapter 3	3.2.3.2	Underground Air Quality	3-36	4	Fresh air inputs and exhaust ventilation are provided currently by the Brownlee and Simpson ventilation shafts and the Graham Creek and Frog Pond ventilation adits	Please include "East Boulder Mine adits" so that this sentence more accurately reads: "Fresh air inputs and exhaust ventilation are provided currently by the East Boulder Mine adits, the Brownlee and Simpson ventilation shafts, and the Graham Creek and Frog Pond ventilation adits"
76	Chapter 3	3.2.4	Environmental Consequences	3-38	1	Personal vehicles are limited to 35 permitted vehicles per day; a traffic monitoring program exists to verify	"Light vehicles" is a more accurate description as "personal vehicles" are not allowed to access the site.
77	Chapter 3	3.2.4.2	Alternative 2	3-42	2	Temporary increases in traffic over typical daily levels would also be expected during construction, resulting in short-term increased emissions from vehicles during the construction period; however, SMC would be limited to 35 permitted vehicles per day (GNA 2009) or another GNA-approved variance (Lane 2023a).	SMC suggests that it would be helpful to clarify that the terms of the GNA and the practical application are meant to inform the agencies about the status quo and are not considered additional permit requirements. Please see SMC Comment Letter.
78	Chapter 3	3.2.4.2	Alternative 2	3-42	2	During construction, dust impacts would be mitigated by minimizing the amount of disturbed bare ground at any given stage of construction. BMPs outlined in the Stormwater Pollution Prevention Plan (SWPPP) would be implemented to decrease both air and water soil erosion.	SMC recommends updating to: "...would be implemented to prevent air quality impacts and to manage storm water."
79	Chapter 3	3.3	Surface Water Hydrology and Wetlands	3-47	4	Soil and water conservation best management practices (BMPs) are the primary mechanism to minimize water quality impacts from nonpoint-source pollution and still allow dispersed land management activities to occur on National Forest System land.	This only pertains to surface water. Consider revising accordingly.
80	Chapter 3	3.3.2.1	Data Collection	3-55	2	Hydrology data were provided in the *2022 Baseline Environmental Survey at the East Boulder Mine* (KC Harvey 2022b) and the *East Boulder Mine Plan of Operations Amendment 004* (KC Harvey 2022a)	Please also include Hydrometrics baseline.
81	Chapter 3	3.3.2.1	Data Collection	3-55	2	Climate information for the East Boulder Mine was evaluated from data provided in Appendix A5 to AM4.	Appendix titles to AM4 are cited above, include title for Appendix A5.
82	Chapter 3	3.3.2.1	Data Collection	3-55	3	Montana's numeric water quality standards are quantified in Circular DEQ-7 (DEQ 2019). Montana's base numeric nutrient standards are described in Department Circular DEQ-12A (DEQ 2014).	Section 3.3.2.1, p. 3-55 (and throughout the document, including p. 3-138) states that Montana has "base numeric nutrient standards" which is inaccurate. SB358 (2021) requires Montana to set and implement a narrative nutrient standard. Instead of calling Circular DEQ-12A a standard, just refer to the circular and consider adding a footnote indicating that nutrient regulation in Montana is not clear, but this analysis compares nutrient levels to DEQ-12A and an algal nuisance threshold of 125 mg per square meter, which are conservative
83	Chapter 3	3.3.2.1	Data Collection	3-55	4	The current MPDES Permit MT0026808 interim limits, originally scheduled to expire October 31, 2020, have been administratively extended until October 31 , 2023.	Interim limits are effective through August 31st, not October 31st. The permit was renewed during the pendency of this draft EIS comment period. The renewed permit was issued on August 1, 2023, and takes effect September 1, 2023. This paragraph should be updated accordingly.
84	Chapter 3	3.3.3	Affected Environment	3-59	Figure	Figure 3.3-2	LBR-001 is a groundwater monitoring location. Figure shows it as a surface water site. Please revise accordingly.

85	Chapter 3	3.3.3.1	Relationship of Ground and Surface Water	3-63	2	The East Boulder Plateau has a shallow glacial/alluvial groundwater system consistent with the larger hydrogeologic setting.	It would be more accurate to describe the shallow glacial/alluvial groundwater as multiple isolated groundwater systems.
86	Chapter 3	3.3.3.1	Relationship of Ground and Surface Water	3-63	3	The mill site area is drained by Dry Fork Creek and Lewis Gulch within the permit boundary and by Wright Gulch, Twin Creek, and Fuller Gulch downstream of the permit boundary.	The East Boulder River should be included in this list.
87	Chapter 3	3.3.3.1	Relationship of Ground and Surface Water	3-63	4	The total thickness of the valley fill sediments at the mine site is not known.	SMC contacted weathered bedrock with one of the of the geotechnical drill holes in the area of the Lewis Gulch TSF. We suggest using this depth as an approximation of the valley fill sediments. In Geological and Geotechnical Conditions Report.
88	Chapter 3	3.3.3.1	Relationship of Ground and Surface Water	3-64	1	Monitoring wells completed in the glacial till are low yielding with a hydraulic conductivity of less than 1 foot per day, while the permeability of the outwash deposits ranges from moderate to extremely high, with hydraulic conductivities on the order of 65 to 582 feet per day.	The upper range of permeability of the outwash deposits may be high relative to other material near the mill site; however, it is within the range literature values for gravel aquifers. Consider removing the word extremely.
89	Chapter 3	3.3.3.1	Relationship of Ground and Surface Water	3-64	4	The majority of the groundwater discharging to the East Boulder River occurs within the lower portion of this reach between EBR-BTC and EBR-005 with an approximately 4.4-cfs (1,970-gpm) increase in flow to the East Boulder River between these locations.	SMC suggests adding "during low flow periods".
90	Chapter 3	3.3.3.1	Relationship of Ground and Surface Water	3-64	5	The aquifer beneath the mill site is also recharged by discharges to the infiltration pond; septic system discharge; seepage through the TSF liner, if any; and seepage through the TSF embankment liner, if any.	Should note that the aquifer is also recharged by the East Boulder River.
91	Chapter 3	3.3.3.2	Surface and Wetlands Monitoring	3-66	1	The Project area represents the uppermost potential source of human impacts in the East Boulder River watershed (DEQ and Forest Service 2012a).	Currently, it is the uppermost source of human impacts, however, as demonstrated by the name "Placer Basin," there was historic mining in the East Boulder River headwaters upstream of the project area. *See* https://gis.mtdeq.us/hosting/rest/services/Hosted/Montana_Abandoned_Mine_Lands_Hard_Rock_Mining_Districts/FeatureServer/0/161/attachments/32
92	Chapter 3	3.3.3.2	Surface and Wetlands Monitoring	3-66	3	The current MPDES Permit MT0026808 interim limits, originally scheduled to expire October 31, 2020, have been administratively extended until October 31, 2023.	Interim limits were extended through August 31, 2023. The permit was renewed during the pendency of this draft EIS comment period. The renewed permit was issued on August 1, 2023, and takes effect September 1, 2023. This paragraph should be updated accordingly.
93	Chapter 3	3.3.3.2	Surface and Wetlands Monitoring	3-67	Table 3.3-1	Analysis Area Surface Water Monitoring Locations and Data References	LBR-001 is a groundwater monitoring site. Please correct throughout document.
94	Chapter 3	3.3.3.3	Surface Water Hydrology	3-73	2	Historic data from a USGS gaging station (06197800) located below the confluence of Dry Fork Creek indicates streamflow varied from a low of 1,346 gpm (3.00 cfs) in March 2022 to a high of 396,318 gpm (883 cfs) in June 2022 (USGS 2022).	The flows in March are reported as estimates by the USGS and should be qualified accordingly.
95	Chapter 3	3.3.3.3	East Boulder River Conditions (Storm Water)	3-75	1	Maintenance and corrective actions	SMC recommends including administrative controls (i.e., housekeeping, waste management, maintenance, etc.).
96	Chapter 3	3.3.3.3	East Boulder River Conditions (Adit Water)	3-75	3	Effluent from the clarifier is routed to the biological treatment system (BTS) where the water flows through fixed-bed bioreactors for primary denitrification followed by a moving bed bioreactor, where nitrifying bacteria convert ammonia to nitrate and then denitrifying bacteria reduce nitrate compounds to nitrogen gas.	Primary is no longer "fixed bed." Five of six cells have been converted to moving bed bioreactors. SMC suggests rephrasing this to state: "…where the water flows through moving bed bioreactors, where nitrifying bacteria convert ammonia to nitrate and denitrifying bacteria reduce nitrate compounds to nitrogen gas."

97	Chapter 3	3.3.3.3	Stream Conditions	3-79	4	Between 2016 and 2022 (July through September) , the maximum total nutrient concentrations in surface water at monitoring sites located in the East Boulder River were 0.5 mg/L of total nitrogen (at EBR-003, EBR-004A, EBR-005A, EBR-008, and LBR-001) and 0.031 mg/L of total phosphorus (at LBR-001), which are higher than the Montana numeric nutrient standards for aquatic life of 0.30 mg/L (total nitrogen) and 0.03 mg/L (total phosphorus).	The data discussed in this paragraph appear to be based on the calculated total nitrogen (TN). The calculated TN values are up to five times greater than the TN values using the persulfate method and even higher than the total inorganic nitrogen concentrations. This is seen at both upgradient (EBR-003) and downgradient (EBR-004A and EBR-005) in July through August 2019 where the TN using the persulfate concentration is less than 0.2 mg/L at all sites and the TN calculated is at 0.5 mg/L. The calculated TN values should either be qualified or the TN using the persulfate method should be used to describe the TN concentrations in the East Boulder River. Also, please remove LBR-001 per comment above.
98	Chapter 3	3.3.3.3	East Boulder River Conditions (Adit Water)	3-81	4	...to Outfall 002 was 0.03 to 35.8 mg/L with an average of 2.89 mg/L; and the daily maximum range of nitrate plus nitrite concentrations of treated adit water discharged to Outfall 002 was 0.12 to 35.8 mg/L	The EIS should qualify that the maximum concentrations are from a period of upset conditions where drilling muds caused inefficiencies in the biological treatment system resulting in elevated nitrate plus nitrite. The East Boulder Mine has since installed a thickener upstream of the clarifier to remedy this upset condition. Nitrate plus nitrite concentration have remained below 6.8 mg/L since installation of the thickener.
99	Chapter 3	3.3.3.6	Wetlands	3-121	Figure 3.3-4 .	Wetlands and Drainages in the Directly Affected Project Area	The wetland and drainages are not shown well on the map. Figure 3.3-4 does not show drainage/wetland delineation. The Figure only provides labels.
100	Chapter 3	3.3.3.6	Wetlands	3-123	1	Wetlands in the overall analysis area have not been delineated in the field; however, wetlands overlying the claims to mined in the East Boulder Plateau area	Change "to mined" to "to be mined".
101	Chapter 3	3.3.3.8	Operating Permit/ POO Stipulations	3-127	6	All water quality and quantity data must be submitted as hard copy .	SMC suggests removing or archiving this part of the stipulation in the next CORP update.
102	Chapter 3	3.3.4.1	Stream Conditions	3-136	3	No Action Alternative to be directed to onsite percolation ponds, where they flow underground to gaining reaches of the East Boulder River. Due to the complex interaction between surface water and groundwater in gaining and losing reaches of the East Boulder River, stream water temperature is not expected to be impacted from those groundwater discharges for the No Action Alternative.	This description should also note that temperature impacts are minimized through mixing in the groundwater system and the long residence time in the groundwater prior to discharging to surface water.
103	Chapter 3	3.3.4.1	East Boulder River Conditions (Adit Water)	3-138	1	Numeric nutrient standards for aquatic life for this region include 0.03 mg/L of total phosphorus and 0.30 mg/L of total nitrogen (DEQ 2014).	Please clarify nutrient regulation applies "from July 1st - September 30th" and that the use of the numeric criteria found in Circular DEQ 12A as water quality standards has been impacted by Senate Bill 358 (2021), which requires narrative standards; however, for conservative purposes, the EIS analyses relied on the numeric criteria from Circular DEQ-12A as well as an algal nuisance level of 125 mg/meter squared.
104	Chapter 3	3.3.4.1	undwater-Dependent Ecosystems, Wetlands, and Riparian Management Zones	3-139	1	While dewatering of GDEs has not been identified to date, there is potential for dewatering of GDEs in areas where the underground mining or vent raises disrupt or intercept saturated faults and fractures.	The potential impacts to GDEs should be qualified similar to those of potential impacts to springs in Section 3.3.4.2 and note that the most vulnerable GDEs to potential impacts are those that are located immediately above existing and planned near surface mine workings. The EIS should also note that due to the vertical nature of the ore body/mine, this area is relatively small and only encompasses a very small number of GDEs. These include GDE sites JB220926-02 and JA220928-03. All other GDE sites and associated springs are not located above near-surface mine workings. A figure showing GDE sites compared to potential near surface mine workings will be sent to the agencies.
105	Chapter 3	3.3.4.2	Stream Conditions	3-141	1	Therefore, similar to the No Action Alternative, the Proposed Action represents a long-term minor adverse impact on water quantity associated with streams in the East Boulder Plateau area.	The EIS should acknowledge that the 200' crown pillar where the ore underlies surface water reduces the potential adverse impacts.
106	Chapter 3	3.3.4.2	East Boulder Plateau	3-142	2	Springs that would be most vulnerable to potential impacts include those that are located immediately above existing and planned near-surface mine workings and those that receive recharge from fractured bedrock groundwater.	Specific springs have not been identified however, the GDE survey identified only two areas of springs and seeps that are located above existing and planned near-surface mine workings. These include springs and seeps associated with GDE sites JB220926-02 and JA220928-03. All other GDE sites and associated springs are not located above near-surface mine workings. A figure showing GDE sites compared to potential near surface mine workings will be provided to agencies.

107	Chapter 3	3.3.4.2	East Boulder River Conditions (Adit Water)	3-146	2	Potential water quality impacts on springs SP-11 and SP-12 would be limited to groundwater discharges to the springs originating from the planned storm water percolation basins or existing treated adit water percolation basin.	p. 3-146, discussion of Spring Conditions at the Mill Site Area – the treated adit water should be referred to as compliance with the WQA, which indicates no adverse impacts to beneficial uses
108	Chapter 3	3.3.4.2	East Boulder River Conditions (Adit Water)	3-146	4	East Boulder River Conditions (Adit Water)	This section limits the discussion to nitrate plus nitrite. SMC suggests adding a discussion on nutrient data (total nitrogen (TN) and total phosphorus (TP)) in the East Boulder River and note the following: -Nutrient limits are limited to July through September. -TN concentrations using the persulfate method, which is the preferred method, show TN concentrations below the standard of below 0.3 mg/L and below the nonsignificance concentration identified for the East Boulder River in the 1992 Environmental Impact Statement. - The EIS would also benefit from noting aquatics data shows that the increases in TN in the East Boulder River have not shown a postive correlation to the discharges from the East Boulder Mine.
109	Chapter 3	3.3.4.2	East Boulder River Conditions (Adit Water)	3-147	2	As the majority of excess treated adit water discharge would continue to be directed to the percolation pond for the Proposed Action, it is expected that the East Boulder River would experience an increase (from existing conditions) in nitrate plus nitrite concentrations, but as with existing conditions, it is expected to remain below regulatory standards, constituting a short-term minor adverse impact on East Boulder River water quality. Impacts would be direct and indirect/secondary and would occur during operations and closure phases.	Water quality “below regulatory standards” does not have an adverse impact on beneficial uses, so it should state that there will be no impact.
110	Chapter 3	3.3	East Boulder River Conditions (TSF/WRSA Stability)	3-148	2	Further, there is potential for water quality impairment through spills of substances used for mineral exploration such as fuel, lubricants, drilling additives, and surfactants.	The reference to “water quality impairment” should be changed to “water quality impact”. An “impairment” has a specific meaning within the WQA and means that beneficial uses are not met. This seems to only be talking about an impact that does not impair beneficial uses and should be changed.
111	Chapter 3	3.3.4.2	Wetlands	3-150	1	The *Joint Application for Proposed Work in Montana’s Streams, Wetlands, and Other Water Bodies* (Hydrometrics, Inc. 2022g) would be used to meet USACE PCN submittal requirements, as well as for DEQ stream permitting.	Although Hydrometrics did the wetland inventory, the joint application was prepared by KC Harvey. (KC Harvey, Environmental, LLC., 2023. Lewis Gulch TSF and Dry Fork WRSA Roads - Joint Application for Proposed Work in Montana's Stream, Wetlands, Floodplains & Other Water Bodies. May 24, 2023.)
112	Chapter 3	3.3.4.3	Wetlands	3-155	5	Wetlands	There are conflicting statements in this paragraph. It first states that the geomorphic design would impact additional wetlands. Later, it states that no roads or facilities would be permitted in wetlands beyond the impacts previously described in Alternative 2. Consider revising the paragraph to first state that as currently designed adding geomorphic design may impact additional wetlands. Then add a stipulation that the geomorphic design will be required to not impact additional wetlands beyond the impacts described in Alternative 2.
113	Chapter 3	3.3.4.3	RMZ	3-155	6	Riparian Management Zones	The initial sentence of this paragraph is in conflict with the remainder of the paragraph as it indicates that the geomorphic design has the potential to cause direct impacts on RMZs greater than Alternative 2. The remainder of the paragraph indicates that no additional RMZs are expected to be impacted in Alternative 3 beyond those described in Alternative 2 and that no additional impacts will be permitted under Alternative 3. The initial sentence should be removed or revised to be consistent with the final findings described in the remainder of the paragraph.
114	Chapter 3	3.4.3.2	Mill Site Glacial/Alluvial Groundwater Hydrology	3-162	2	Their permeability ranges from moderate to extremely high; hydraulic conductivities derived from aquifer pumping tests ranged from 12 to 567 feet per day (Hydrometrics, Inc. 2017a).	Consider removing the word "extremely" as it can be misinterpreted.

115	Chapter 3	3.4.3.4	Water Balance	3-164	1	Water Balance	This section is not highly applicable to Groundwater Hydrology. Please consider moving the description of the Water Balance to Section 2.1.3.
116	Chapter 3	3.4.3.5	Mill Site Glacial/Alluvial Groundwater Hydrology	3-167	1	the mine was returned to use of ammonium nitrate and fuel oil	Suggest adding acronym (ANFO).
117	Chapter 3	3.4.3.5	Mill Site Glacial/Alluvial Groundwater Hydrology	3-167	1	nitrate-nitrite concentrations	Consider revising to "nitrate+nitrite" or "nitrate plus nitrite" concentrations.
118	Chapter 3	3.4.3.5	Mill Site Glacial/Alluvial Groundwater Hydrology	3-167	2	During June in 2015 and 2016 ,	This is an annual event, not just 2015 and 2016. Consider revising this sentence to read "During the months of June and July each year..."
119	Chapter 3	3.4.3.5	Mill Site Glacial/Alluvial Groundwater Hydrology	3-167	2	The changes in concentrations coincide with, and are a result of, direct dilution from the seasonal influx of water from Lewis Gulch.	Data suggested that direct dilution is a minor factor in the changes in concentrations and it is more of a hydrologic control due to infiltration of water from Lewis Gulch pushing the plume toward EBMW-11 as discussed below. Consider removing this sentence.
120	Chapter 3	3.4.3.5	Mill Site Glacial/Alluvial Groundwater Hydrology	3-167	4	Recent water quality trends are shown in the most recent *Annual Water Resources Monitoring Report* (Hydrometrics, Inc. 2022c).	This paragraph discusses nitrate, total inorganic nitrogen, and nitrogen interchangeably. Each of these constituents, although similar, have different regulatory standards. Consider changing this discussion to only talk about nitrate as it is the only one that has a standard in groundwater.
121	Chapter 3	3.4.3.5	Water Quality Differences North and South of the East Boulder River	3-170	1	Water Quality Differences North and South of the East Boulder River	The relevance of this comparison is unclear. It would seem more appropriate to describe the water quality of each area.
122	Chapter 3	3.4.4.2	Environmental Consequences	3-176	3	Alternative 2	Throughout the majority of the environmental consequences in the surface water Hydrology section, the EIS specifically notes that if the impacts for Alternatives 2 and 3 are the same as the No Action Alternative, there is no impact. This should be carried forward throughout the Environmental Consequences Section for Groundwater Hydrology, and other sections.
123	Chapter 3	3.4.4.2	Mill Site Area	3-177	1	With the installation and approval of the Boe Ranch injection well, the relative proportion of groundwater recharge may vary between the mill site and Boe Ranch areas under Alternative 2 depending on how SMC chooses to manage water discharge between the two sites .	The Boe Ranch injection well is currently permitted; therefore, this statement is true for Alternatives 1, 2, and 3.
124	Chapter 3	3.4.4.2	Boe Ranch	3-178	1	Water quantity effects on groundwater at the Boe Ranch area associated with Alternative 2 (Proposed Action) would be similar to those discussed for Alternative 1 (No Action Alternative), where the impact would be proportional to the amount of groundwater recharged and would represent a short-term minor beneficial impact.	This should be changed to water discharged to groundwater not recharge.

125	Chapter 3	3.4.4.2	Mill Site Area	3-178	5	Any Dry Fork WRSA leakage during operations is not expected to impact underlying groundwater quality due to the minimal leakage rates relative to groundwater flux (leakage rate is estimated between 0.2 and 1.3 gpm relative to an estimated groundwater flux of 79.6 gpm).	The estimated groundwater flux provided in this section is correct for the area associated with the Underdrain Collection Pond (UCP). The flux is much greater for the Underdrain Capture System (UCS) due to the significantly larger width of the WRSA and associated UCS, which is approximately 2,400 feet. Based on the larger width and the lower hydraulic conductivity in the vicinity of the WRSA (34 ft/day) a gradient of 0.038, and a thickness of 15 feet, the groundwater flux is about 240 gpm that the seepage from the WRSA would mix with. This discussion should be expanded to evaluate the resultant concentration in groundwater from the analyzed seepage rates and estimated concentrations of nitrate plus nitrite from the Dry Fork WRSA at the downgradient extents of the permit boundary. Below is a simple mixing calculation for the UCP and UCS based on the information summarized in the Updated Dry Fork WRSA closure analysis (referenced as Hydrometrics, 2022b in the DEIS) and estimated flux beneath the Dry Fork WRSA described above. **UCP** MaxSeepage = 0.2 gpm Nitrate + Nitrite (N+N) in Seepage= 750 mg/L Groundwater Flux near UCP = 79.6 gpm N+N in Groundwater near UCP = 0.18 mg/L Groundwater Flux west of East Boulder River (EBR) = 400 gal/min N+N in Groundwater west of EBR = 3 gpm Resultant N+N at permit boundary = 2.8 mg/L **UCS** MaxSeepage = 1.3 gpm N+N in Seepage= 750 mg/L Groundwater Flux near UCP = 240 gpm N+N in Groundwater near UCP = 0.18 mg/L Groundwater Flux west of East Boulder River (EBR) = 400 gal/min N+N in Groundwater west of EBR = 3 gpm Resultant N+N at permit boundary = 3.5 mg/L These simple mixing analyses show that the nitrate plus nitrite concentration at the permit boundary will remain below the nondegradation criteria of 7.5 mg/L.
126	Chapter 3	3.4.4.2	Mill Site Area	3-179	1	...and upon discharge of groundwater to the East Boulder River, nitrate concentrations may range from 0.14 to 0.17 mg/L.	Please consider removing the last half of the sentence as it is not relevant to the Groundwater Hydrology Section.
127	Chapter 3	3.4.4.6	Other Revelant Mandatory Disclosures	3-183	Table 3.4-5	The Project would result in unavoidable encroachment on the RMZ and impacts on wetlands for road construction, which is necessary because of the need to cross the river to access the Dry Fork WRSA from the existing mill site. The crossing would be partially on private land, but some impacts at the crossing site on CGNF land would be unavoidable. Impacts would be minimized by designing the impacts to be as narrow as possible and disturbing the smallest amount of land necessary for the crossing.	Please consider removing impacts due to fill of wetlands. These impacts do not apply to groundwater.
128	Chapter 3	3.5.1	Analysis Area	3-185	2	The period evaluated for this analysis includes construction, operations, and completion of reclamation and post-closure monitoring (approximately 15 years after completion of operations).	See previous comment(s) regarding post-closure.

129	Chapter 3	3.5.3.4	Ore and Waste Rock Geochemistry	3-190	5	SMC must conduct quarterly sampling and chemical analysis of the waste rock and tailings and analyze annually the acid producing potential of waste rock from high sulfur content zones and other geologic zones where mobilization of metals, increased TDS, or reduced pH of stormwater and snowmelt runoff from the waste rock piles could result.	Please remove "annually." The acid potential is analyzed quarterly along with chemical analysis.
130	Chapter 3	3.5.3.4	Ore and Waste Rock Geochemistry	3-191	3	Data from the 15-year period of record consistently show nondetectable levels of metals in the leachate.	SMC suggests that the 2012-2022 waste rock and tailings characterization data also be reviewed and added to this summary. SMC has 25 years of data available and will provide this data to DEQ and the USFS. SMC believes it is important to establish long-term evidence of low potential for metals leaching and ARD potential.
131	Chapter 3	3.5.3.6	Existing Mine Area	3-192	4	. A 'Critical Slope Stability Section' has been assigned adjacent to the northeast part of the TSF where the crest of the escarpment lies about 125 feet from the existing toe of the TSF and about 40 feet above the river floodplain	Please note that the proposed Lewis Gulch TSF is more than 275 ft from the East Boulder River.
132	Chapter 3	3.5.4.1	East Boulder TSF Stability	3-197	4	Additionally, the post-earthquake analysis resulted in a FoS ranging from 1.55 to 2.00, which is higher than the minimum 1.2 FoS requirement in all seven cross-sections. Therefore, the stability analyses indicate that an uncontrolled release of material from the TSF due to a reduction in material strength parameters or an earthquake is very unlikely in both the short term and long term.	Please consider defining the FMEA terms for risk or probability such as "very low" and "very unlikely" in the glossary and consistently apply throughout the document.
133	Chapter 3	3.5.4.2	Geology and Geochemistry	3-198	2	The sulfide minerals that could potentially pose a risk of acid generation occur almost exclusively in the ore zone being removed by mining . This conclusion is supported by water monitoring data collected at the East Boulder Mine (DEQ and Forest Service 2012a) and continued waste rock and ore monitoring associated with the Waste Rock Characterization Plan(SMC 2023a).	SMC suggests that this sentence be replaced with a quote from Section 3.5.3.4 "Guidance for geochemical predication methods indicates that sulfur (as sulfide) levels less than 0.3 percent, positive Net Neutralization Potential (NNP) values, and NP:AP ratios greater than 3 are indicative of materials that are not considered acid forming."
134	Chapter 3	3.5.4.2	Lewis Gulch TSF Stability	3-199	4	Following cessation of operations, erosion and stability of the TSF would be monitored for a minimum of eight years, after which stability would be monitored once every fifth year following post-closure, and dam safety reviews would be conducted every five years by the IRP members or by a panel meeting the requirements of Section 82-4-377, MCA.	For consistency, SMC recommends using "periodic inspections" as referenced in Section 82-4-380, MCA, rather than dam safety reviews. Additionally, SMC is not aware of an eight-year monitoring requirement, this is typically five years post-closure or per EOR or IRP recommendation.
135	Chapter 3	3.5.4.4	Geotechnical Stability Impacts Common to All Alternatives	3-201	1	Erosion , river avulsion, or slope creep below and near the toe of the tailings embankments could over time reduce support of localized portions of the embankment...	This statement is true for Stage 6; however, for Lewis Gulch, the river bends away and Lewis Gulch sits on the valley bench.
136	Chapter 3	3.5.4.7	Other Relevant Mandatory Disclosures	3-203	Table 3.5-1	Same as Alternative 2 except Alternative 3 would result in approximately 180 acres of disturbance (compared to 167 acres under Alternative 2).	SMC suggests the following revision to this sentence: "Same as Alternative 2 except Alternative 3 would potentially result in up to approximately 180 acres of disturbance (compared to 167 acres under Alternative 2)."
137	Chapter 3	3.6.3.2	Project Area Soils	3-208	2	In addition, the coarse content of the test pits followed the same general format	SMC suggests adding coarse "fragment" content.
138	Chapter 3	3.6.3.5	Reclamation Bond	3-212	3	DEQ and the Forest Service hold a joint reclamation bond to ensure reclamation of the East Boulder Mine. Currently, approximately 249 acres are bonded in the Project area (SMC 2023a).	Please reference the 2021 Annual Report Section D in Appendix I of the 2023 CORP. Bonded disturbance as of Q4 2021, there were 263.54 acres permitted for disturbance.
139	Chapter 3	3.6.3.5	Reclamation Bond	3-212	5	The agencies will compare the completed reclamation against these requirements in the approved POO and operating permit, determine if the reclamation bond release is acceptable, and only allow full joint reclamation bond release upon successful reclamation to those standards.	Please consider adding that "partial" bond release can be approved as work is completed in stages such as earthworks, building demo, or topsoil placement.

140	Chapter 3	3.6.4.2	Alternative 2	3-218	6	Post-closure would last approximately 10 years for the Lewis Gulch TSF and 15 years for the Dry Fork WRSA.	Post-Closure to last approx. 10 years for both the Lewis Gulch TSF and Dry Fork WRSA. Please see prior comments related to this.
141	Chapter 3	3.6.4.4	Reclamation Impacts Common to all alternatives	3-223	1	There is the potential for upward flow through the tailings and the cover in the early stages of tailings consolidation after cover placement .	Experience Nye TSF indicates that upward flow during cap placement would be relatively minor and have little to no impact on reclamation timing and or success.
142	Chapter 3	3.6.4.5	Cumulative Effects	3-223	4	This impact on soil productivity would be long-term and adverse. Soil productivity would slowly return to pre-mine conditions as organic matter from the decomposition of vegetation accumulates into reclaimed soil, providing nutrients and water-holding capacity, but this could take years beyond joint reclamation bond release .	SMC suggests adding that "although it may take many years to reach pre-mine productivity, impacts to soil would not limit implementation of successful revegetation and reclamation."
143	Chapter 3	3.7.1	Analysis Area	3-226	2	Timing is approximate as production rates would impact duration, and completion of reclamation and post-closure monitoring would be dependent on SMC achieving certain benchmarks.	This is a repeat of the prior sentence.
144	Chapter 3	3.7.2	Analysis Methods	3-226	4	This analysis includes a review of the existing files and literature and cultural resource survey reports that have been conducted to determine the presence of historic properties in the APE .	Please provide references of files and reports.
145	Chapter 3	3.7.3.4	Alternative 2	3-229	1	Vegetation clearing could disturb features at the site. Mitigation of adverse effects on 24SW252 would likely be needed and could consist of a combination some form of public interpretation, HABS documentation, and monitoring.	Please note typo: "...combination <u>of</u> some...".
146	Chapter 3	3.8.4.2	Alternative 2	3-242	1	The new disturbance would occur mostly within mature and early seral Douglas fir forests in areas adjacent to the existing mine (Figure 3.8-2).	We suggest clarifying that the new disturbance described in the text and depicted in Figure 3.8-2 would occur predominately on private land owned by SMC. Consider revising as follows: "...in areas adjacent to the existing mine*, and predominately on private lands owned by SMC* (Figure 3.8-2)."
147	Chapter 3	3.8.4.2	Table 3.8.4	3-253	Table	Unavoidable adverse impacts on vegetation would include disturbance of up to 167 acres for the life of the mine.	We suggest clarifying in the table the proportion of the impacts to vegetation relating to Alternatives 2 and 3 that would be on federal versus private property owned by SMC.
148	Chapter 3	3.9.3.1	Aquatics	3-260	4	Sediment monitoring found no measured changes in sediment or turbidity due to the mine exploration or road construction activities, and the concern for sediment discharge was so low that unless there were new potential sources, sediment monitoring was suspended (Rhithron 2021).	Given the citation, it reads as Rhithron reported the sediment monitoring results. SMC recommends breaking this into two statements and the second emphasizing the biological community response.
149	Chapter 3	3.9.3.1	Water Quality and Quantity	3-262	3	For additional information on surface water and groundwater resource conditions, and other aquatic habitats including wetlands located in the analysis area and potential impacts on those resources, see the *Hydrology and Wetlands Specialist Report* (ERO et al. 2023).	The discussion on water quality and quantity would benefit from a discussion on nutrient concentrations in the East Boulder River. This discussion should note that although Total Nitrogen (TN) concentrations using the persulfate method are elevated above background concentrations between EBR-004 and EBR-005 they remain below the DEQ-12A criteria for the Middle Rockies Ecoregion during the months the standard is applicable (July through September). It may also be helpful for this section to note that historical and current data suggest no exceedances (>4.0 HBI) have occurred during the sampling period, suggesting that any additional nutrient enrichment in the East Boulder River has not adversely affected the BMI community.
150	Chapter 3	3.9.3.2	Aquatic Biota	3-264	1	Long-term biological monitoring of macroinvertebrates, periphyton (ash-free dry mass [AFDM] and Chlorophyll *a*), and diatoms have shown inconsistent results, indicating both unimpaired and moderate impairment conditions in the East Boulder River	Is the use of the term “impairment” intended to mean impairment as that term is understood in the WQA? The threshold for use “impaired” is pretty high, most likely this should refer only to adverse impacts, not impairment.

151	Chapter	3.9.3.2	Aquatic Biota	3-264	1	The data suggest that stream habitats are intact and that there is little to no evidence of metals contamination (Rhithron 2018, 2020). Diatoms suggested low probability of impairment related to sediment deposition or nutrient enrichment, and Chlorophyll-*a* concentrations were below the suggested nuisance level standard (125 mg per square meter [mg/M^2]) excluding outliers (Rhithron 2020).	There is no algal nuisance level standard in Montana, this should be revised to read "…were below the conservative nuisance level of 125 mg per square meter…"
152	Chapter 3	3.9.3.2	Aquatics	3-267	1	Both fish monitoring reports and biological monitoring reports discuss how the East Boulder River has been impacted by *Didymosphenia* blooms. *Didymosphenia geminate* is known to be introduced into streams on the wading boots of anglers, and blooms are related to changes in phosphorous concentration. *Didymosphenia* infestation in the East Boulder River has been variable and has not been attributed to mine operations as the algae is abundant both upstream and downstream of the mine (GEI 2020; Rhithron 2020).	Didymo is a native taxon but can exist at nuisance levels. "Didymosphenia geminate" should be corrected to "Didymosphenia geminata". Also, Didymo numbers are very low in EBM's count data. Other stalked diatoms such as the abundant Achnanthidium spp. resemble Didymo at the stream side observations. Since 2009, Didymo has comprised less than 2.5% relative abundance of any of the diatom community composition counts.
153	Chapter 3	3.9.3.2	Aquatics	3-271	Figure 3.9-2	Aquatic Habitat Distribution and Monitoring Sites in Analysis Area	Figure 3.9-2 should be updated to include EBR-002.
154	Chapter	3.9	Alternative	3-274	2	Ongoing biological and fisheries monitoring as outlined in the revised *Biological Monitoring Plan* (SMC 2018) and the Good Neighbor Agreement would continue to occur.	Please consider removing the reference to the GNA. This monitoring is not reported to the agency. If not, consider referring to it as voluntary and is likely to continue; otherwise the text implies it is a regulatory requirement.
155	Chapter 3	3.9.4.2	Groundwater and Surface Water Effects on Aquatic Habitat and Biota	3-277	4	Due to the complex interaction between surface water and groundwater in gaining and losing reaches of the East Boulder River, stream water temperature impacts from those groundwater discharges for the Proposed Action are anticipated to be minimal or unlikely.	This section should also note that temperature impacts are minimized through mixing in the groundwater system and the long residence time in the groundwater prior to discharging to surface water.
156	Chapter 3	3.9.4.2	Groundwater and Surface Water Effects on Aquatic Habitat and Biota	3-277	4	Project activities do not include any direct surface water diversions, and although surface water discharges to the East Boulder River are permitted (MPDES) for stormwater and treated adit water, none have occurred to date or are expected in the future under normal operating conditions	We suggest clarifying this sentence to state: "…although <u>direct</u> surface water discharges..."
157	Chapter 3	3.10.4.2	Alternative 2 - At-risk Species	3-296	1	The BA also did not address impacts at the monitoring well location downstream from the mill site; any development of wells at that location may require separate Section 7 consultation under the ESA.	Please specify which monitoring well location. Is the 12-acre monitoring well area included in analysis?
158	Chapter 3	3.10.4.2	Alternative 2 - Migratory Birds	3-308	1	As described in **Section 2.4, Agency Mitigations Common to Alternatives 2 and 3**, raptor and other migratory bird surveys would be conducted prior to Project implementation. If an active raptor or other migratory bird nest is known or located within the disturbance area, it would be protected and buffered from planned activities to protect the integrity of the nest site and maintain bird use during the reproductive season.	SMC requests that the agencies consider the following revision to this statement: "As described in **Section 2.4, Agency Mitigations Common to Alternatives 2 and 3**, <u>and in accordance with Section 3(e)(9) of EO 13186, surveys for raptor and migratory bird species of concern (Table 3.10-3)</u> would be conducted prior to Project implementation. If an active raptor or migratory bird species of concern nest is known or located within the disturbance area, it would be protected and buffered from planned activities to protect the integrity of the nest site and maintain bird use during the reproductive season."
159	Chapter 3	3.11.3.1	TSF Dam Failure Hazards Analysis	3-320	5	a total of 37 risks were identified – 1 medium risk rating, 29 low risk ratings, and 7 very low risk ratings – resulting in an overall low risk rating.	There are 12 failure modes identified for the Lewis Gulch TSF. With mitigation, all were very low or low. If there was a medium risk, the overall risk would be medium. It may be helpful to cite the previous FMEA and EA, but the numbers here should represent the Lewis Gulch FMEA and LG breach analysis.
160	Chapter 3	3.11.4.1	Alternative 1 - No Action	3-332	5	Additionally, secondary impacts, or further impacts on the environment, may be stimulated or induced by a TSF failure.	SMC suggests detailing which resources would be affected as a result of a failure.
161	Chapter 3	3.11.4.2	Alternative 2: TSF and WRSA Failure	3-333	3	Additionally, secondary impacts, or further impacts on the environment, may be stimulated or induced by a TSF failure.	SMC suggests detailing which resources would be affected as a result of a failure.

162	Chapter 3	3.11.4.2	Alternative 2: TSF and WRSA Failure	3-334	3	Throughout the facility operating life and through the closure phase, annual inspections of the Lewis Gulch TSF would be conducted by the EOR and periodic dam safety reviews by the IRP .	SMC recommends changing the term here to "tailings facility reviews." Dam Safety Review is an industry/GISTM term, not an IRP term.
163	Chapter 3	3.8.4.2	Alternative 2	3-342	3	The Proposed Action would directly disturb about 167 acres of land, of which about 115 acres would be on National Forest Service lands. The new disturbance would occur mostly within mature and early seral Douglas fir forests in areas adjacent to the existing mine (**Figure 3.8-2**).	We suggest clarifying that the new disturbance described in the text and depicted in Figure 3.8-2 would occur predominately on private land owned by SMC. Consider revising as follows: "...in areas adjacent to the existing mine, and predominately on private lands owned by SMC (Figure 3.8-2)."
164	Chapter 3	3.8.4.2	Montana Species of Concern	3-350	1	If Montana species of concern were to occur, and if dewatering of GDEs were to occur, adverse direct and secondary impacts could result, including aquatic life impacts, groundwater impacts, and surface water impacts.	SMC suggests the following revision for more clarity: "In the event that Montana species of concern occur in the area, and there is evidence of GDE dewatering..."
165	Chapter 3	3.13	Visual Resources	3-353	Figure	Figure 3.13-1 Visual Resources	Please consider showing both private land boundary and low scenic integrity objective, where applicable.
166	Chapter 3	3.8.4.6	Other Relevant Mandatory Disclosures	3-353	Table 3.8-4	Unavoidable Adverse Effects	We suggest clarifying in the table the proportion of the impacts to vegetation relating to Alternatives 2 and 3 that would be on federal versus private property owned by SMC.
167	Chapter 3	3.14.4.6	Other Revelant Mandatory Disclosures	3-385	Table	Same as Alternative 2.	Under Unavoidable Adverse Effects, we recommend adding that "Alternative 3 would result in the loss of about 276 acres of National Forest System land for dispersed recreation."
168	Chapter 3	3.15.1	Analysis Area	3-386	3	The analysis area for direct, indirect/secondary, and cumulative socioeconomic effects is Sweet Grass County	Please include secondary/indirect impacts to country and national security if U.S. source of PGMs goes away or is significantly reduced and these critical minerals must be obtained elsewhere. This could result in supply chain issues, increase in prices, etc.
169	Chapter 3	3.15.1	Analysis Area	3-387	3	For all socioeconomic impacts, the period evaluated for this analysis would be approximately 31 to 34 years in duration, beginning with construction through active operations, and the completion of reclamation and post-closure monitoring 15 years later.	Please revise this to "25 years later." As noted in prior comments, the Closure phase goes through Year 15, then post-closure monitoring continues to Year 25.
170	Chapter 3	3.15.2	Analysis Methods	3-389	Figure 3.15-1	Socioeconomics and Environmental Justice Analysis Area	This figure does not include outline/details for Hertzler TSF/LAD Storage Pond. See comment above.
171	Chapter 3	3.15.3.2	Community Characteristics	3-391	2	Interstate 90 bisects the county, the towns of Big Timber and Greycliff, and the communities of Quebec and Reed Point.	SMC suggests removing reference to Quebec. Quebec is a historic railroad station. There are no remaining buildings at this location.
172	Chapter 3	3.15.3.3	Population and Employment	3-392	1	As indicated by **Table 3.15-2**, Sweet Grass County's average earnings and per capita income are lower than the Montana averages.	The narrative should note that per capita income is slightly higher than the Montana average for 2020.
173	Chapter 3	3.15.4.1	Environmental Consequences	3-399	4	The risk of occurrence of adverse effects is considered low based on the completed analyses,	We recommend using FMEA terminology. FMEA determined that the risk of occurrence of this type of failure is 'very unlikely', not 'low'.
174	Chapter 3	3.15.4.1	Environmental Consequences	3-400	1	Overall, the risk of a TSF failure that would impact socioeconomics, including human health and safety and road infrastructure, is low or very low .	We recommend using FMEA terminology. FMEA determined that the risk of occurrence of this type of failure is 'very unlikely', not 'low or very low'.
175	Chapter 8	8.1	Glossary	8-1	Table	Closure	As noted in prior comments, the Closure phase is 15 years for both the Lewis Gulch TSF and Dry Fork WRSA, and is reassessed every five years.
176	Chapter 8	8.1	Glossary	8-2	Table	Post-closure	As noted in prior comments, the post-closure phase is 10 years for both the Lewis Gulch TSF and Dry Fork WRSA, and is reassessed every five years
177	Chapter 8	8.1	Glossary	8-2	Table	seepage through the cover	"[S]eepage through the cover" is included twice in the Glossary. We suggest using a single definition for the term.
178	Appendix A	A.1.21	Energy Act and Critical Minerals	A-14	2	EO 13817 is the Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals.	We recommend including reference to the Infrastructure Investment and Jobs Act (30 U.S.C. 1607) as it relates to Congressional recognition of the vital role critical minerals play in the U.S. economy, competitiveness, and security, as well as the instruction to USFS to complete federal permitting and review processes relating to critical mineral production on federal

							land with "maximum efficiency and effectiveness". Update Table 1.4-1 consistent with this comment.
179	Appendix B	B.2.2	Filtered Tailings Storage Facility Alternative	B-4	2	CGNF subject matter experts independently determined that studies conducted to date have not established the feasibility of producing a geotechnically stable filtered tailings product that can be transported and placed in a FTSF that will remain free-standing and stable, and would result in a reduction in environmental risk	We recommend including reference to the May 22, 2023 USFS memorandum where it details its consideration, analysis, and dismissal of a possible filtered tailings storage facility alternative. A member of the public reviewing only the DEIS and appendices may not know to look for the USFS memorandum unless it is clearly referened in the DEIS.

MA 004 DEIS Comment Table (Tech Memo 1)					
Comment No.	**Title/Subsection**	**Page**	**Paragraph**	**Excerpt**	**Comment**
1	Overarching Comments and Discrepancies	4	1	Hydrometrics also states within the document that implementation of a passive system would “reduce the time for active treatment by 7 years” but does not state that this alternative is the preferred alternative, as stated in the POO. Please see the “Secondary Treatment Option Summary” section for more detail and recommendations on this topic.	Hydrometrics memo provides a scientific analysis of the nitrogen concentrations from the DF WRSA and provides alternatives to simple direct discharge. It is not a decision document. The POO should be used to guide the final design of the project.
2	Infiltration Precentages	5	2	The infiltration percentage is directly proportional to the infiltration rate. A larger infiltration percentage results in a greater volume of water captured by the proposed UCP during operations and therefore greater nitrate removal rates.	This statement is not supported by the data from the TSF embankment. As noted on page 7 of the Hydrometrics memo and shown on Figure 3, there is not a direct relationship between nitrogen removal rate and changes in infiltration.
3	Specific Hydrology-Related Recommendations	6	1	A more conservative slug test value for hydraulic conductivity is 34 ft/day measured in well EBMW-16. This value could be included as a sensitivity test since it could have a notable effect on the groundwater flux.	The author previously stated that it only has a 1% change on the threshold concentration therefore, this does not seem to be a sensitive parameter. Furthermore, the hydraulic conductivity value used for the mixing analysis is directly downgradient of the proposed infiltration area and is located within the area where the leachate will mix with groundwater. EBMW-16 is located on the opposite side of a drainage than the proposed infiltration area and is outside of the area the mixing zone will be located. The use of the hydraulic conductivity value from the well located within the mixing zone is appropriate.

4	Review of Nitrate Removal Rate Calculation	7	1	A constant removal rate may be a valid assumption during operations, but the removal rate would most likely not remain constant during the post-closure scenario. As the source of nitrate + nitrite (and ammonia) in the waste rock depletes over time due to leaching and lack of addition of more source material, the solubility of nitrate + nitrite would shift to accommodate this change in equilibrium dynamics. Since the rate of nitrate + nitrite leaching is concentration dependent, as the concentrations of nitrate + nitrite decreases, the rate of dissolution (or leaching) decrease resulting in lower nitrate + nitrite removal rates over time and this should be considered in the model.	Although it is correct that a constant removal rate (e.g., 20% during closure) was assumed, it is important to note that the removal rate is defined and applied in the model as percentage removal of remaining nitrogen in waste rock rather than initial nitrogen in the waste rock. Applied in this manner, a constant removal rate yields an exponential decay curve where the actual removal rate on a mass/concentration basis (rather than a percentage basis) declines over time in an exponential fashion (see reference to this in Hydrometrics memo, first sentence of last paragraph, pg 12). It is this exponential decay that yields the classic decay curve shape to the modeled UCP nitrate concentrations shown post-closure (years 2048 and beyond) on Figure 4 and nitrate removal concentrations are modeled to decrease over time. Furthermore, as noted in the Uncertainty Analysis discussion the saturation limit for ammonium nitrate is significantly higher than the concentrations in the UCP water. Therefore, solubility of nitrogen and equilibrium dynamics would not be affected by the lower infiltration rates.
5	Specific Nitrate Removal Rate Recommendations	7	2	Consider using a non-constant post-closure nitrate removal rate in the model. The removal rate would likely not be constant after closure due to a steady depletion of nitrate in the WRSA over time, resulting in a shift in equilibrium dynamics.	See comment above. Furthermore, as noted in the Uncertainty Analysis discussion the saturation limit for ammonium nitrate is significantly higher than the concentrations in the UCP water. Therefore, solubility of nitrogen and equilibrium dynamics would not be affected by the lower infiltration rates.
	Conclusions and Final Recommendations	12	4	A more conservative slug test value for hydraulic conductivity is 34 ft/day measured in well EBMW-16. This value could be included as a sensitivity test since it would have an effect on the groundwater flux.	See comment above on this topic.

MA 004 DEIS Comment Table (Tech Memo 2)

Comment No.	Title/Subsection	Page	Paragraph	Excerpt	Comment
2	Long-term Care and Maintenance	10	3	Long-term Care and Maintenance	Please see comments related to Long-term Care and Maintenance in "MA004 DEIS Comment Table."
1	Recommended Alternative	13	3	Capping Alternatives	The use of an ET cap may be effective at some sites, however, at the East Boulder Mine, precipitation is dominated by snow and infiltration occurs primarily during the spring as the snow melts and during spring rains. Hydrometrics has not evaluated if the use of ET caps at the East Boulder Mine; however, the climatic conditions in this area would likely limit the effectiveness of any ET cap. Furthermore, an ET cap would result in waste rock with nitrogen residuals remaining in place for an undetermined amount of time. Nitrogen would only be removed during large precipitation or snowmelt events when the ET cap was not effective. These events are more difficult to manage and are not well suited for a passive treatment system that needs a consistent flow of water with nitrogen to provide sufficient treatment. A more permeable cap, as proposed, allows for effective management of the leachate from the WRSA during the closure and post-closure phases. Consistent leaching of nitrogen from the waste rock provides the passive treatment system with sufficient nitrogen to allow for effective treatment. In addition, the removal of nitrogen during post-closure from the waste rock assures that the nitrogen is removed to acceptable levels and limits the potential release of nitrogen to the environment during post-closure and following this phase.

MA 004 DEIS Comment Table (Tech Memo 3)					
Comment No.	**Title/Subsection**	**Page**	**Paragraph**	**Excerpt**	**Comment**
1	Summary of Finding	1	2nd Bullet	Reported stability issues for tailings dams indicate a disproportionately larger number of issues when using upstream dam construction methods, while filtered tailings and single-lift compacted embankment construction methods reflect a lower incidence of stability issues.	SMC suggests adding, single-lift "downstream" compacted embankment.
MA 004 DEIS Comment Table (USFS FTSF Tech Memo)					
Comment No.	**Title/Subsection**	**Page**	**Paragraph**	**Excerpt**	**Comment**
1	Summary of Finding	1	2nd Bullet	CGNF's evaluation of a filtered tailings storage facility alternative is limited by the existing testing and laboratory work completed for the slimes portion of the tailings produced at the East Boulder Mine.	SMC suggests replacing "limited" with "supported".
2	Assessment Material	5	3rd Paragraph	Tests indicated a flow moisture point of 20.1% moisture was not achieved for any of the pressure filtration tests with reagents, however, the 25- and 60-mm chamber tests reached a moisture content of 20.2%.	Please note, the 20.2% moisture content is with a reagent, without reagent, the moisture content is 18.5%.
3	Additional Studies Requested for Alternative Screening	7	1st full paragraph	Technical Memorandum 3was	Editorial: Technical Memorandum 3 was
MA 004 DEIS Comment Table (Specialist Reports)					
Comment No.	**Title/Subsection**	**Page**	**Paragraph**	**Excerpt**	**Comment**
1	Soils: Incomplete and Unavailable Information	17	1	Specific soil studies have not been completed for the proposed expansion based on the relevant and significant data that have been previously published.	An NRCS soil survey of the proposed disturbed areas exists, and the baseline soil survey confirmed these map units. Soil pits were excavated and observed/described within the footprint of the DFWRSA. Geotech pit logs/photos within the LGTSF were reviewed.
2	Alternative 3 – Agency-Modified Alternative	56	3	Stormwater percolation pond locations and the embankment toe would be allowed to be altered as necessary to meet a minimum outer containment slope steepness criteria of 2.5H:1V.	SMC suggests replacing "a minimum outer" with "the overall embankment slope criteria of 2H:1V" (Please note that there typically not a period after the "2" in "2H:1V").
3	Summary of Environmental Effects	63	1	salvage all usable soil and not just a depth of 28 and 18 inches (as proposed in Alternative 2) resulting in the surface area of soil storage areas being 10 to 20 percent larger as compared to Alternative 2.	See comment #8 on MA 004 DEIS Comment Table