Specific EE/CA Section Comments:

3. Page 8-9 – 2.1.7 – Hydrology – Section 2.1.7 indicates that a 100 year flood event would lead to an estimated peak flow of 656 cubic feet/sec., approximately 100 times the August 2004 flow. Approximately what portion of the waste rock would be inundated in such an event?

Response: The 100-year peak flow of 656 cfs would produce a maximum depth of flow in Mill Creek adjacent to the Waste Rock Piles of approximately 2.5 feet as presented in Appendix B (Sheet #3), which would likely inundate the toe of the portion of the pile approximately 2 to 2.5 feet. Therefore, as shown on Figure 6-4, riprap is proposed along the toe of the Waste Rock pile to a minimum height of 3.5 feet above the toe (one foot freeboard) in Alternative 2. This area extends along approximately 200 feet of the upstream portion of the Waste Rock Piles, which is the portion closest to the creek. This toe protection, along with the up-gradient runon-control ditches and outfalls will effectively protect the Waste Rock Piles during extreme flood events up to and including
the 100-year event.

FS Response: Please include the above discussion in the EE/CA

16. Page 48 – Paragraph 5 – The presence of "reshaped glacial deposits" in the lower waste rock pile begs the question: Are there more glacial terrace deposits in the vicinity that could be used for cover soil? This is a data gap that needs to be addressed.

Response: The site investigation observed that the lower Wenatchee Adit waste rock pile consists primarily of glacial deposits that have been leveled to accommodate the former camp site. Reconnaissance during MFG's site investigation indicated limited volumes of glacial deposits that might be used for soil cover. Further, the glacial deposits were typically too coarsely graded to be of suitable use as a cover.

FS Response: Please include the above discussion in the EE/CA

***17**. Page 49 – Paragraph 3 – The conclusion that the on-site repository "would provide the highest degree of long-term effectiveness and permanence" is not well supported. Wouldn't, the waste rock pile be within the 100 year flood plain, if left on site? Wouldn't the offsite repository be located above the 100 year flood plain and designed in a fashion not to adversely affect groundwater and surface water? maintenance of the offsite repository would be easier and more likely to be accomplished, as well. It seems that the offsite repository would be more effective in the long term and more permanent.*

Response: In the Draft Final EE/CA the on-site closure Alternative 2 would have toe protection along the portion of the waste rock within the limits of the 100-year

floodway as discussed elsewhere. This is a common practice for mine waste closures to protect such areas from erosion during extreme flood events. If designed and installed properly the solution is very effective and permanent. The off-site repository may be located outside the 100-year floodplain, if such a location can be found. If this is not the case, this repository would also require erosion protection during extreme flood events. We agree that access for O&M at an off-site repository would likely be easier than for the onsite repository, specially if the existing road to the Azurite Mine cannot be improved. Discussions regarding the long-term effectiveness and permanence of the off-site repository versus the on-site closure alternative will be modified as necessary in the Revised Draft Final EE/CA.

A better analysis could be provided in the Revised Draft Final EE/CA regarding the actual location of the potential off-site repository shown on Figure 6-5 of the Draft Final EE/CA based on additional site-specific information. We have selected a relatively close available area on FS land on a relatively level area based on a GIS search. If the Forest Service wants to have a more detailed analysis of this site, we would need better data such as better topography to verify that the location is outside the 100-year floodplain (Please see sentences 8 and 9 of "Complete Removal with Offsite Disposal" subsection, page 46). This may require hydrologic analysis of *North Fork of Trout Creek which is south of Harts Pass or Slate Creek which is located north of Harts Pass.* The Forest Service should also provide verification that this selected property is available for use as a repository. We request that the Forest Service provide the information necessary for the additional detailed analyses required to address the comments.

FS Response: A 7.5^{o} USGS topo map showing the location of the proposed Harts Pass repository is attached. The 1977 Okanogan NF Soils Resource Inventory indicates that this area is alpine meadow underlain by gravelly and sandy loams. I have confirmed that this area is outside the Pasayten Wilderness and available for use as a repository.

***23**. Page 53 – section 6.2.8 – Cost –*

- *Why are off-site O&M costs so much more than on-site costs?*
- *Appendix I indicates that operation and maintenance costs at 2.5% of total capital costs for the 1st 5 years and 1 % thereafter, please provide explanation to support this approach. This approach increases offsite O&M costs compared to on-site costs, when the opposite is likely the case.*
- *Please explain the justification for ending O&M after 30 years?*
- *Provide a reference or support for use of a 5% discount rate.*
- *Adjust off-site repository costs to reflect a presumptive cover.*
- *Adjust costs to include bat-friendly adit closures.*

Response: The off-site versus on-site O&M costs will be revisited in the Revised Draft Final EE/CA. Thirty years is a typical time period for analyzing O&M costs in a present worth analysis; however, a longer time period can also be analyzed if the Forest Service desires. Similarly, a 5 percent discount rate is a common unit for present-worth analyses; however, if the Forest Service desires another discount rate, or a range of discount rates, such analyses could be performed. We request direction from the Forest Service.

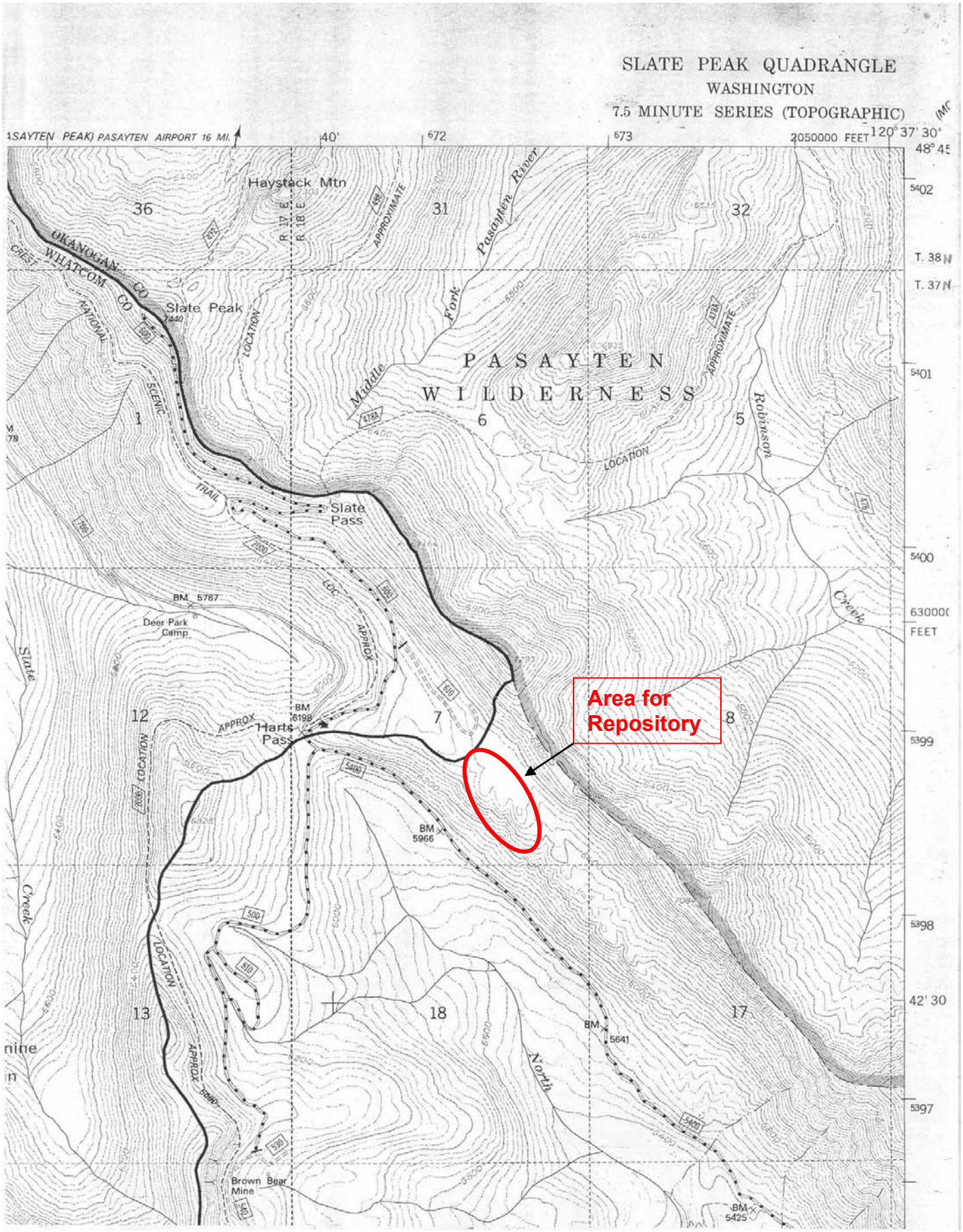
FS Response: A 30-year analysis period is acceptable, but please add an explanation for its use (e.g. typically 30 years is used to estimate monitoring periods, actual monitoring may occur over a longer of shorter time period).

A 5% discount rate is probably close enough for our purposes but some further explanation is needed in the text (e.g. the discount rate adjusts the out-year O&M costs for the time value of money including opportunity cost and risk). I believe in this case, the current US Treasury Bill interest may be used to estimate opportunity cost (I think it is now about 5%) and current inflation rate (1-2%?) for risk.

24. *Appendix H, Page H-1, last paragraph: What magnitude earthquake is modeled in the geotechnical analysis? How does it compare to the magnitude 5 earthquake identified on page 7-8? Include analysis of the new on-site alternative.*

Response: The earthquake seismic factors used in the analyses represent a 10 percent probability of occurrence in 50 years, or an approximately 500-year recurrence interval as shown on page 3 and Reference C (USGS National Earthquake Information Center) of the calculations presented in Appendix H. This represents an earthquake having a magnitude of approximately 5.5 at the site or a magnitude of approximately 6 near the site. Stability analyses of the new on-site alternative will be included in the Revised Draft Final EE/CA.

FS Response: I can't locate the page 3 you reference above. Also I have no Reference C in Appendix H (only A & B). Please add the above earthquake magnitude information in Appendix H, Page H-1.


SLATE PEAK QUADRANGLE
WASHINGTON
7.5 MINUTE SERIES (TOPOGRAPHIC)
Haystack Mtn
Pasayten River
Middle Fork
PASAYTEN WILDERNESS
Slate Peak
Slate Pass
Harts Pass
Deer Park Camp
Brown Bear Mine
Robinson Creek
North Creek
Slate Creek
OKANOGAN CO
WHATCOM CO
CREST NATIONAL SCENIC TRAIL
LOCATION
APPROXIMATE
APPROX
BM 5787
BM 6198
BM 5966
BM 5641
BM 5425
Area for Repository