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Herb Rolfes - EMB
Montana Dept. of Environmental Quality
PO Box 200901
Helena, MT 59620-0901

RE: Comments of Montana Fish, Wildlife & Parks on the Draft EA for the Tintina Alaska Exploration, Inc. Amended Exploration Permit for the Black Butte Copper Project

Dear Mr. Rolfes:

We trust DEQ receives these comments in the spirit intended by §75-1-201(1)(c), MCA with Montana Fish, Wildlife & Parks (FWP) being a public service agency entrusted with responsibility for and expertise in managing the public fish and wildlife resources of Montana. The proposed Black Butte Copper Project is located near Sheep Creek, which is a very important public resource not only in terms of the resident fishery, but also to the highly valued Smith and Missouri river fisheries and Smith River State Park.

The project lies in immediate proximity to a section of Sheep Creek that was physically rehabilitated in the 1960's to mitigate the impacts from human-caused disturbance (road building) on Highway 89 and Sheep Creek Road (Forest Road 119). We have a wealth of fisheries and stream information from these sections spanning from the 1950's through the 1990's. The nature of the rehabilitation involved restoring streamside vegetation in a section located 4.7 miles upstream from the project site that was straightened by highway construction and affected historic weed spraying practices. The other section is located 1.5 miles downstream of the project site. Here log drop structures were installed in a straightened section of channel in order to dissipate stream energy and provide deep water habitat for fish. In 1980, FWP considered gathering rainbow trout from Moose Creek to be used in our hatchery system because preliminary studies showed these fish outperformed hatchery trout in both growth and survival. In 1982, Montana State University completed a graduate research project in this area evaluating the fish populations.

Our most recent fisheries work in this area occurred from 2007 to 2012 and involved three independent studies of trout behavior in the Smith River drainage. We surgically implanted radio transmitters in fish and monitored their movements to identify habitats for spawning, summering and wintering. Our studies have shown 52% of the tagged rainbow trout in the Smith River spawn in the main stem, and 42% spawn in tributaries. The Sheep Creek drainage accounts for

55% of the tributary spawning and includes Sheep Creek proper, Calf Creek and Moose Creek. We have documented rainbow trout from the Missouri River traveling 190 miles round trip to spawn in Moose Creek. This discovery demonstrates the importance of Sheep Creek in supporting or sustaining the Smith River and Missouri River trout fisheries.

We hold instream flow water rights for Sheep Creek (30 cfs) and the Smith River (125-150 cfs).

The rights are often not met. In fact, we presently have called on junior priority water right holders to cease diverting water in order to meet the minimum instream flow to sustain fish and wildlife habitat. Such a request is unfortunately common in the Smith River basin where stream flow is too often not adequate to fully support the fishery.

In addition to providing valuable fish habitat for the Smith River and Missouri River, Sheep Creek is vital for maintaining the quality recreation experience of the Smith River floating section. Over the past 17 years, the average number of angler days spent on the Smith River float section was 11,155 per year, and the average annual revenue generated for the state economy from these trips is estimated at \$1,202,868 (Table 1). Out of 1,200 fisheries the state monitors for angler use statistics, the average rank for the Smith River float section is number 10 in the region and number 60 in the state.

Table 1. Angler use and economic statistics for the Smith River recreation float section (section 2), 1995-2011.

	Resident value \$	State rank	Region rank	Non-res value \$	Angler days	Resident AD	Non-res AD	Total \$
2011	46.83	54	8	244.44	11,480	5,402	6,078	1,738,682
2009	44.55	45	8	232.53	18,100	11,680	6,420	2,013,187
2007	43.04	63	9	224.65	8,375	3,751	4,624	1,200,225
2005	40.43	51	8	211.03	14,188	8,371	5,817	1,566,001
2003	38.13	88	15	199.04	6,854	2,742	4,112	923,005
2001	36.80	64	10	192.06	9,088	6,362	2,726	757,677
1999	34.57	83	16	180.42	7,645	6,422	1,223	442,662
1997	33.23	47	9	173.44	13,391	8,302	5,089	1,158,512
1995	32.34	50	8	168.78	11,272	6,425	4,847	1,025,861

The Draft EA states in Section 1 that the purpose of the exploration is to determine feasibility of future mining. The development of the decline during the exploration phase essentially constitutes developing the entire access portion of the mining phase. We believe the Draft EA should have disclosed and fully considered this fact.

Sections 2.1 and 3.8 characterize land use in part as outfitted fishing and big game hunting. In addition to this use, non-outfitted anglers and hunters use the Sheep Creek drainage. This additional use should be reflected in the Final EA.

Our most fundamental concern with the Draft EA relates to the removal of surface water and fishery resources from further study. Presumably, the aquatic resources category was also removed from further study, although the Draft EA does not specifically indicate this. The removal of fishery (and presumably all aquatic resources) from further consideration appears

predicated on the removal of surface water resources. The removal seems to rely on an artificial distinction between surface and ground water, which is in fact a singular resource in this setting. Potential negative impacts to ground water quantity and quality would be ultimately expressed in surface water, necessitating the further study and mitigation of impacts to surface water and related resources. We believe the Final EA should be expanded to encompass these resource categories and to include a thorough analysis of these resource categories, including monitoring, standards and mitigation that should be required in the Amended Exploration Permit.

Section 2.2.6 of the Draft EA does not list fisheries and aquatic resources as a resource category considered in the monitoring plan. We believe it would be difficult to ascertain if the actions associated with the exploration would have any impact on the fisheries and aquatic resources of Sheep Creek without including this data gathering in the monitoring plan. These data would provide a basis to determine if exploration or mining has any impact on fisheries and aquatic resources. While the agency-mitigated alternative focuses on preventing ground-water impacts that would also negatively impact surface water and related resources, these alternatives provide no clear assurance that such impacts will not occur, and therefore monitoring is needed. The mitigation of any impacts should also be identified and disclosed in the Final EA and made part of the Amended Exploration Permit.

Section 2.2.6.2 of the Draft EA states that surface water has been monitored at eleven sites on a quarterly basis. We recommend the applicant consider installing a USGS real-time discharge gage with seasonal thermal recording near with site SW-1 (Figure 6, Draft EA). Flow in Sheep Creek undoubtedly influences the fishery. Independent flow data gathered by USGS may be used to establish correlations to help determine if changes in the fishery are due to non-mine related impacts on stream flow or due to mine-related impacts. While the Draft EA, in many instances, references the short duration of the exploration activities (8-16 months), it does not identify a specific term for the Amended Exploration Permit. The assumption that all activities would occur within the projected timeframe is not sufficient to dismiss monitoring requirements, such as continuous monitoring provided by a USGS gage. Further, impacts to surface water quantity would continue after the temporary or permanent closure of the exploration shaft as the shaft refills with water. Consideration of surface water impacts should continue until the shaft refills to present groundwater levels. In light of new information provided herein, we believe the Final EA should evaluate and disclose the purpose and benefits of more rigorous water quantity monitoring. Such should also be a condition of the Amended Exploration Permit.

Section 2.3 (and 4.2) of the Draft EA do not offer any information for fisheries and aquatic resources. We recommend the Final EA disclose meaningful information on this resource category.

Section 4.1.2.2 of the Draft EA states that, at a pumping rate 100 gpm, the cone of depression will not impact the Sheep Creek alluvial aquifer. This conclusion seems to misconstrue the findings of the Evaluation Adit Drawdown Analysis Memorandum from Hydrometrics, Inc. dated January 29, 2013. In that Memorandum, Hydrometrics concludes, "The resultant simulations show limited potential for drawdown effects in the Sheep Creek alluvium due to the high permeability of the alluvium." It is true that drawdown will decrease substantially as the cone of depression reaches the Sheep Creek alluvial aquifer, as the high permeability aquifer will quickly replenish the water being pumped. However, some level of drawdown will ultimately extend to Sheep Creek, causing a diminishment in stream flow. Hydrometrics is careful not to assert that there will be no impact to flow in Sheep Creek. Unfortunately, the Draft EA seems to

misinterpret Hydrometrics' findings to conclude that impacts to flow in Sheep Creek would be unlikely, and that drawdown would not reach the alluvial aquifer, stating, "...the cone of depression...would not extend to the Sheep Creek alluvial aquifer." Hydrometrics made no such claim. Figure 4 in the Memorandum (same as Figure 9 in EA) may contribute to that erroneous conclusion, as it only shows drawdown of 5 ft or more and does not show the full extent of the cone of depression. The full extent of the predicted drawdown should be depicted and considered.

The Draft EA acknowledges some level of impact may occur on Sheep Creek by stating, "Thus the impact on Sheep Creek would be below the level of significance." We find this conclusion deficient in light of the procedure for determining significance, which requires consideration of the potential conflict with state law ARM 17.4.608(1)(g). Our prior instream water rights all too often go unmet. Preventing water from moving to another person having a prior right is a violation of the Water Use Act §85-2-114, MCA. The proposed dewatering activities have the strong potential to prevent water from moving to Sheep Creek and ultimately the Smith River, where we have prior rights. This action would constitute violation of state law and result in a significant impact.

Further, it is fundamentally unfair that junior water rights would be requested to cease water use while a subsequent reduction in surface water would occur as a result of unmitigated mine dewatering. This request is a social impact that needs to be developed in the Final EA, unless dewatering impacts are fully analyzed and mitigated as part of the Amended Exploration Permit. In order to avoid a significant impact, we recommend the Final EA and Amended Exploration Permit require more rigorous ground-water monitoring and modeling during dewatering and after temporary or permanent closure to determine the quantitative impact on Sheep Creek, which then must be mitigated. We believe this requirement should be part of the Amended Exploration Permit and should not be delayed until the possible Operating Permit review as is suggested in section 4.2.2.3 of the Draft EA.

The Draft EA relies on the 100 gpm drawdown analysis conducted by Hydrometrics. We believe this analysis is misplaced, as predicted dewatering rates may be as high as 200 gpm with grouting according to the Hydrometric Memorandum. While the applicant has committed to grouting, to the extent necessary to reduce dewatering to 100 gpm, the Draft EA did not disclose any assurance that this is reasonably physically possible. Also, the initial dewatering rates would be higher, potentially changing the outcome of the drawdown analysis. Hydrometrics describes the intent of their work as being to direct monitoring, as opposed to reaching conclusions about drawdown effects at specific locations. Consistent with Hydrometrics' own characterization of their work, we believe the Final EA should include more rigorous monitoring and complex modeling to determine the actual quantitative impact on water resources. Such should be made requirements of the Amended Exploration Permit along with requirements to fully mitigate any predicted reduction in flow in Sheep Creek.

The Draft EA does not evaluate the potential for the ground-water LAD portion of the project to partially mitigate impacts to flow in Sheep Creek. It appears from the potentiometric surface data displayed in Figure 2 of Hydrometrics' January 29, 2013 Memorandum that water disposed of in the LADs may well express as surface water in the vicinity of SW-6 and points downstream. From a quantitative perspective, this water could mitigate depletion to flow in Sheep Creek due to dewatering. However, DNRC records show there is an irrigation point of

diversion on Little Sheep Creek just north of the Sheep Creek Road, and that system could intercept this water, thus preventing it from providing any mitigation of the Sheep Creek dewatering impacts. If this LAD water is to be considered as mitigation for depletion of flow in Sheep Creek, it must be protected from diversion for irrigation and be of suitable quality to be considered appropriate surface water mitigation. The Final EA should address this new information and provide for necessary operating permit conditions to address this concern.

Even if the ground-water LAD does provide some level of mitigation to surface water quantity impacts, the water treatment operations that would remove water from the hydrologic system should be mitigated. The RO system would evaporate as much as 20,000 gallons per day of brine water when processing 100 gpm. Over 16 months of operation, this evaporation translates to nearly 30 acre-feet of water alone. Further water loss from the local ground-surface water system would occur with use of the surface LADs, as well as net evaporation from the seepage ponds. Also, potential increased evapotranspiration in wetlands influenced by the ground-water LAD may further remove water from the local ground-surface water system. These unknown amounts should be quantified and considered in the Final EA and conditions of the Amended Exploration Permit.

Section 4 of the Draft EA lists the resource categories that have the potential of being affected by the proposed action, but does little to disclose what the likely impacts would or could be. Most notable is Table 8 under Fish and Wildlife "...if surface water quality and quantity are not impacted, fisheries and aquatic resources would not be impacted..." We are concerned that quarterly monitoring may not be adequate for detecting changes in surface water quantity. Monthly water quantity monitoring should occur for all surface water sites, with weekly monitoring at SW-6 and continuous monitoring at SW-1 via a USGS gage station. This increased monitoring should be used to complement, but not replace, rigorous monitoring and modeling to determine actual impacts.

Furthermore, the Draft EA does not disclose any information on present status of fisheries and aquatic resources as a basis to compare post-exploration status. As such, it seems unlikely that impacts stemming from changes in surface water quality or quantity could be detected with any degree of resolution. We recommend developing a monitoring program for fisheries and aquatic resources so there will be a baseline by which to evaluate the status and changes in these resource categories.

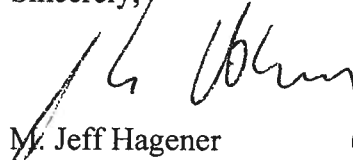
We also want to emphasize that the potential adverse impacts to public recreation opportunities are not adequately addressed in this EA. Smith River State Park and river corridor has statewide significance as an iconic recreational experience that is coveted by many Montanans and out of state visitors. Respondents to a study of Smith River floaters conducted in 2000 expressed a strong orientation towards enjoying the natural scenery and views of the river, getting away from the usual demands of life, being close to nature, experiencing a undeveloped river and experiencing comradery with group members and/or family. Physical relaxation, viewing wildlife, experiencing some very wild country and solitude and fishing also were highly rated reasons for visiting the river. In general, respondents reported high levels of actually attaining desired recreational experiences during their trip.

The quality of the water and the fishery in the Smith River has an influence on many of those recreational values. Water quality is also important to many river recreationists who may chose to filter or treat drinking water directly from the river.

The recreational opportunities provided by Smith River State Park and river corridor have also a ~~significant positive impact on the economy of the nearby communities of White Sulphur Springs, Ulm and Cascade, where many river recreationists purchase food, supplies, gasoline and other amenities.~~ Degrading the quality of the Smith River experience would likely have a negative impact on those communities.

We recommend the issues identified in our comments receive full attention in the Final EA and subsequent Amended Exploration Permit in order to reduce and mitigate impacts to public fish, wildlife, and recreational resources.

Sincerely,



M. Jeff Hagener
Director

c: Andy Brummond
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