Tent Mountain Mine Redevelopment Project - Summary of Issues

This document provides a high-level summary of the issues submitted to the Impact Assessment Agency of Canada (the Agency) on the Tent Mountain Mine Redevelopment Project (the Project) during the comment period on the Initial Project Description submitted by Montem Resources Alberta Operations Ltd. (the Proponent). The issues submitted during this comment period generally reflected the concerns raised during the designation request process. Original submissions are posted on the Canadian Impact Assessment Registry (Reference Number # 81436). The issues highlight information needs to support the Agency's decision on whether an impact assessment is required under section 16 of the *Impact Assessment Act* and—if an assessment is required—to inform the Planning phase documents and further assessment. Categories are listed in alphabetical order.

Accidents and Malfunctions
Potential effects to wildlife, native flora species, and fish and fish habitat, including westslope cutthroat trout, due to leaks or overflow of contaminants, such as selenium and calcite, and contamination of the surrounding environment, including Crowsnest Lake.
Clarity on the spill prevention, preparedness, response measures and systems, response capacities, and emergency management plans that will be implemented.
Potential adverse effects to air quality, water quality, wildlife, and wildlife habitat due to accidental releases of high concentrations of ammonia, hydrocarbons, and other contaminants to surrounding waterbodies and watercourses.
Clarity on the planned approach for responding to hazardous material releases, including during transportation, and the associated potential effects on the environment and Indigenous groups, including the health and safety of Indigenous peoples and current use of lands and resources for traditional purposes.
Clarity on the stability of the existing impoundment that discharges into Tent Creek and flows into Michel Creek and the planned approach for mitigation should failure occur, including mitigation of effects to Lake Koocanusa.
Acoustic Environment
Clarity on potential increases in ambient noise levels due to machinery use, construction and operation activities, and increased traffic during the construction and operation phases of the Project, whether noise assessments are being undertaken at relevant human receptor locations, and on any proposed mitigative measures for effects to noise and vibration levels.
Alternative Means of Carrying Out the Project
Clarity on alternative mine plan options for carrying out the proposed Project.
Alternatives to the Project
Clarity on the purpose and need for the Project, and alternatives to the Project that are technically and economically feasible, including low-carbon steel production alternatives.
Atmospheric Environment
Clarity on potential changes to air quality due to dust, particulate matter, fuel combustion by-products, emissions of sulfur oxides, nitrogen oxides, carbon monoxide, volatile organic compounds and other hydrocarbons, particulate matter, metals, and polycyclic aromatic compounds; their deposition in surrounding environments; the resulting potential adverse local, regional, and cumulative effects to human health and terrestrial and aquatic ecosystems; and the standards to assess potential Project effects to air quality and planned mitigation measures.
Clarity on the potential emissions sources and air pollutants predicted to be emitted as a result of the Project and potential effects on ambient air quality of the region, including from

mining activities, processing (crushing and milling), and activities associated with combustion, including transportation.
Clarity on the potential for atmospheric contaminants associated with the Project to be deposited in nearby waterbodies and the associated potential effects to surface water.
Clarity on planned mitigation measures to address potential Project effects related to increased fugitive dust and particulate matter concentrations.
Climate Change and Greenhouse Gas Emissions
Clarity on the Project's greenhouse gas (GHG) emissions and contribution to climate change as per the Strategic Assessment of Climate Change (SACC)[1], with consideration of the Government of Canada's long-term goal to achieve net-zero emissions by 2050 and a description of the planned mitigation measures, technologies, and best practices to be applied, including measures being considered to reduce the Project's GHG emissions on an ongoing basis.
Need for an estimate of the maximum annual net GHG emissions for each phase of the Project, including a breakdown of each term of Equation 1 of the SACC and the methodology, emissions factors, and assumptions used (section 4.1.1, SACC).
Potential effects on carbon sinks (e.g. forested areas, grassland, wetlands, etc.) and implications for climate change, per section 4.1.2 of the SACC.
Clarity on how methane releases will be mitigated during mining activities.
Clarity on how climate change may affect the success of reclamation and revegetation of the Project area following operation and how these effects will be managed and mitigated.
Clarity on how GHG emissions were considered as a criterion in the selection of alternative means of carrying out the Project and alternatives to the Project.
Cumulative Effects
Clarity on the content and scope of the cumulative effects assessment, including whether the assessment includes other coal leases and projects in the region under the Proponent's care and control and/or that the Proponent plans to develop.
Potential cumulative effects to human health and well-being due to increased dust and air contaminant concentrations in the atmospheric environment due to Project activities.
Potential cumulative effects to wildlife and their habitat, including a reduction in wildlife population density and wildlife health, habitat loss and fragmentation, and the release of contaminants, particularly selenium, from the Project.
Clarity on the potential for cumulative effects to fish and fish habitat in the regional study area, including the Crowsnest River, including consideration of the current stressors to fish populations as a result of whirling disease and the effects of changes in nutrient levels, water temperature, surface flow, water quality parameters (e.g. conductivity), and sedimentation.
Potential cumulative effects to the tourism industry and recreational uses in the region due to Project activities and associated effects to the environment.
Potential cumulative effects of the Project to Michel Creek, the Elk River, the Elk Valley, Crowsnest Lake, and the Old Man River.
Clarity on potential cumulative effects on the ability of Indigenous groups to practice their Aboriginal or Treaty rights, including current and future generations, due to Project activities in combination with other projects and activities in the region, including the Michel Coal Project.
Clarity on whether the effects of the original mine site, including effects to Aboriginal or Treaty rights, will be considered in the cumulative effects assessment.

[1] Government of Canada. 2020. Strategic Assessment of Climate Change. Available at https://www.canada.ca/en/services/environment/conservation/assessments/strategic-assessments/climate-change.html.

Clarity on the Project's contribution to the cumulative loss of undisturbed lands in the region, access limitations to the Project's footprint, competing land uses in the region, removal of timber and forests, avoidance of areas or resources due to real or perceived contamination, sensory disturbance, or the presence of workers, and effects to fish, wildlife, and plant species of cultural importance.
Clarity on whether the ecological conditions within Treaty territories can support traditional ways of life of Indigenous peoples given the existing cumulative effects in the region in combination with potential Project effects.
Economic and Social Conditions
Clarity on the economic viability of the Project, including how a potential shift to low-carbon steel production alternatives may affect economic viability.
Clarity on the potential long-term economic and social benefits of the Project to Albertans, including details of the cost-benefit analysis.
Clarity on the potential effects of the Project to the tourism industry, recreation, and agriculture within the Project area and surrounding region due to Project activities and associated effects to the environment.
Clarity on potential effects of the Project to the local economy, including real estate values and employment rates.
Clarity regarding the quantity and quality of the coal reserves that would be developed as part of the Project.
Effects of the Environment on the Project
Potential effects to the Project, including damage to and failure of Project infrastructure, due to floods and wildfires, and associated effects to the environment, including accidental releases of contaminants.
Clarity on the likelihood and magnitude of potential flooding events in the area.
Potential for climate change related effects to baseline conditions in the Project area, such as possible changes in mean and extreme precipitation and temperature, extreme weather events, and related environmental conditions, to damage and/or result in failure of Project infrastructure, resulting in effects on the environment.
Clarity on the maximum wind speeds that may be experienced in the region, including wind gusts, and the likelihood that wind and wind gusts could result in damage to and failure of Project infrastructure, and result in effects to the environment and human health and safety.
Federal Lands
Potential effects to federal lands, such as the federal Dominion Coal Blocks located near the Project area.
Fish and Fish Habitat
Potential effects of the Project to fish and fish habitat, including species of importance to Indigenous nations, aquatic invertebrates, and aquatic species at risk, such as bull trout and westslope cutthroat trout. Include potential effects to movement patterns, fish populations, fish mortality, and fish health due to effects to water quality, including increased selenium concentrations in nearby waterbodies, and bioaccumulation of selenium and other contaminants, and the harmful alteration, disruption, or destruction of fish habitat.
Clarity on the site specific mitigation measures that will be implemented to avoid and mitigate effects to fish and fish habitat.
Potential effects of the Project to benthic invertebrates and the need for baseline studies on benthic invertebrates to develop a benchmark suitable for monitoring effects on fish and fish habitat.
Clarity on potential effects to fish and fish habitat due to the potential introduction of aquatic invasive species and diseases, such as whirling disease.

Need for information regarding potential effects to fish and fish habitat to support an application for authorization under the *Fisheries Act* for the Project.
Follow-up and Monitoring Programs
Need for a robust surface water and groundwater monitoring program to monitor Project effects to water quality and contaminant concentrations and clarity on the detailed monitoring program for surface water and groundwater quality, including how selenium will be monitored and the criteria that will be used for total dissolved speciation and organic forms of selenium.
Clarity on how Indigenous peoples will be involved in follow-up and monitoring activities for the Project.
Clarity on proposed adaptive management plans, including how the need for adaptive management will be monitored, the contingency measures that will be implemented, and how the public and Indigenous peoples will be engaged regarding proposed contingency measures.
General – Project Description
Clarity on the design of rock storage facilities, including the source and type of fine material for covering or layering and the type of placement.
Clarity on how avoidance of sensitive plant and wildlife species and minimization of surface disturbance will be prioritized when finalizing the mine plan.
Clarity on the location of Indigenous communities, including reserve lands, relative to the Project area and the need for a map depicting this information.
Need for additional details and context regarding studies referred to in the Initial Project Description, including a summary of these studies and a link to any publically available studies.
Clarity on how studies associated with the environmental impact assessment for the previous mine that are used to inform the current Project are still applicable and, if applied, how the Proponent will verify that these studies are still applicable.
Clarity on how coal will be shipped to market and the associated environmental, health, economic, and social effects of this transportation method, including cumulative effects.
Need for a seismic hazard assessment and landslide/slope stability assessment as it relates to Project activities.
Human Health and Well-Being
Potential effects on the mental and physical health of residents and visitors of the local and regional area.
Potential effects to the quality of drinking water sources due to leaching of contaminants such as selenium, into surface water and groundwater resources, and associated effects to human health.
Potential effects to human health and sensitive ecosystem receptors due to local and regional degradation of ambient air quality from Project activities, including earth moving, land clearing, blasting, crushing, and transportation, which may introduce particulate matter (i.e. dust and soot) to the atmospheric environment.
Clarity on the location and type of potential human receptors in the local and regional area, including residences and sensitive human receptor locations (i.e. schools, hospitals, retirement complexes, or assisted care homes) and the need for maps and diagrams depicting the location of these receptors in relation to the location of the Project and a human health risk assessment that contains all relevant contaminants, potential exposure pathways, and receptor locations.
Potential effects to human health through exposure to chemical substances and noise associated with Project activities.
Clarity on the potential for communities located near the Project to be at an increased risk of cardiovascular disease, cancers, respiratory illness, and other health issues.

Indigenous and Stakeholder Consultation and Engagement
Need for collaboration and engagement with Indigenous groups in the development of Project plans, including the final Project design, mitigation measures, and reclamation plans, alternative means of carrying out the Project and alternatives to the Project.
Clarity on the Indigenous groups who have expressed an interest in being engaged with respect to the Project or have expressed concerns with respect to the Project's potential effects to their communities.
Need for a description of Indigenous engagement efforts to date with potentially affected Indigenous groups, verified by Indigenous groups and including a description of the results of these engagement activities and a summary of the concerns raised to date.
Need for proper consultation and engagement to be carried out in a timely, effective, responsive, transparent, accessible, predictable, fair, flexible, and respectful manner throughout the impact assessment process, including supporting the capacity of Indigenous groups to participate.
Need for traditional land use studies to be conducted by Indigenous groups to assess the effects of the Project on Indigenous peoples, including adequate funding and resources for Indigenous groups to conduct these studies and to participate in engagement activities.
Indigenous Knowledge
Need for consideration and reflection of Nation-specific Indigenous worldviews and knowledge.
Clarity on how Indigenous knowledge has been and/or will be incorporated into baseline studies and the effects assessments for the Project.
Indigenous Peoples' Current Use of Lands and Resources for Traditional Purposes
Potential effects to the current use of lands and resources for traditional purposes, Aboriginal or Treaty rights, and cultural and spiritual practices of Indigenous peoples, including their connection to the land, through loss or degradation of undisturbed lands within the Project's footprint.
Clarity on what species of cultural significance to Indigenous groups are or may be present in the Project area.
Potential effects to spiritual sites, sources of sacred bundles, and plant and wildlife species that are sacred to Indigenous peoples and used for medicinal and ceremonial purposes.
Potential avoidance of areas currently used for the exercise of traditional and cultural practices and rights due to real or perceived effects to air quality, including the odours related to Project activities.
Clarity on potential effects to visual aesthetics, cultural viewscape, sense of place within the landscape, and experience on the landscape of Indigenous peoples.
Clarity on how access to the Project area by Indigenous peoples to practice traditional and cultural activities will be maintained during Project construction, operations, and decommissioning.
Indigenous Peoples' Health and Well-being
Potential effects to wildlife health, fish health, and the quality of country foods, including plants, through uptake and bioaccumulation of selenium and other water or airbourne contaminants released from the Project, and subsequent effects to Indigenous peoples' health through consumption and use of these resources.
Potential effects of the Project and cumulative effects to the ability of Indigenous peoples to access country foods and traditional resources, including through effects to wildlife habitat, terrestrial resources, and wildlife movement patterns.
Potential effects to Indigenous peoples' health and well-being due to Project effects on selenium or other contaminants in drinking water within the Oldman River Watershed and in other watercourses and waterbodies in the region.

Potential effects to the health of Indigenous peoples within the local and regional area, particularly those communities located downwind of the Project, from airborne contaminant emissions due to the frequent and extreme wind conditions in the Crowsnest Pass.
Clarity on how potential effects to the heath, social, and economic conditions of Indigenous peoples have been considered.
Indigenous Peoples' Rights
Potential impacts on the traditional territories of potentially affected Indigenous groups and to the ability of Indigenous peoples to practice their Aboriginal or Treaty rights due to potential Project effects on sites of importance and the quantity and quality of resources of importance for the practice of these activities, such as fish, wildlife, plants, and water; effects on the ability of Indigenous peoples to transmit their language, culture, and knowledge to future generations; and effects to spiritual sites and landscapes.
Need for appropriate consultation and engagement with potentially affected Indigenous groups to understand potential effects of the Project to their Aboriginal or Treaty rights.
Potential effects to Aboriginal or Treaty rights due to effects to the Oldman River watershed, which is the source of water to many reserve lands and used often for the practice of rights by Indigenous peoples.
Need to recognize that Treaty rights, and therefore the potential for impacts to Treaty rights, extend to all unoccupied Crown lands to which First Nations have a right of access.
Need to consider criteria and information beyond traditional land use studies in the assessment of impacts to Aboriginal or Treaty rights, including the availability of lands and resources for the exercise of rights; the use of thresholds or criteria that describe levels or conditions relating to an Indigenous community's ability to meaningfully exercise their rights; and the need for consultation and engagement with Indigenous groups to understand their views regarding potential impacts to their rights.
Potential effects to the ecological integrity and sustainability of areas in and around the Project area that are currently used for the practice of Aboriginal or Treaty rights, which may disrupt the meaningful exercise of Aboriginal or Treaty rights for current and future generations.
Need to consider that the proposed location for the Project is currently used by several Indigenous groups, including Blackfoot Nations, for the practice of Aboriginal or Treaty rights.
Indigenous Peoples' Social and Economic Conditions
Clarity on the number and proportion of direct or indirect employment and contract opportunities that will be generated by the Project and be available to Indigenous peoples and businesses, as well as identification of the potential risk that bringing temporary workers into the community poses.
Clarity on how cultural sustainability has been considered in the assessment of potential effects to Indigenous groups.
Clarity on the potential economic and social effects of the Project to Indigenous groups, using the Community Well-being Index[2].
Indigenous Peoples' Spiritual, Physical, and Cultural Heritage
Potential effects to Indigenous peoples' spiritual, physical, and cultural heritage resources, including ceremonial and burial sites of Indigenous peoples, and archaeological resources in the Tent Mountain pass.
Clarity on how Indigenous groups will be meaningfully engaged to inform the assessment of potential Project effects to Indigenous peoples' spiritual, physical, and cultural heritage, including the location of sites of importance that may be affected.

[2] The Community Well-Being index (sac-isc.gc.ca): https://www.sac-isc.gc.ca/eng/1100100016579/1557319653695

Need to preserve and protect any historical resources of importance to Indigenous groups discovered within the Project footprint, notify Indigenous groups of any chance finds, and return these resources to Indigenous communities.
Migratory Birds and their Habitat
Clarity on the potential for Project components, including site lighting, to attract migratory birds to the Project site at night or in poor visibility conditions and the potential for harm or death of migratory birds due to collisions with lit structures or their vertical support structures.
Potential effects to migratory birds, including from habitat alteration or fragmentation; habitat avoidance due to Project-related noise, vibrations, and light; loss of access to nesting sites due to vegetation clearing; increased mortality rates; effects to health through exposure to deleterious substances; sensory disturbance; loss of food resources; effects on breeding and hibernation cycles; changes in predator/prey relationships; and obstructions to movement.
Reclamation
Need for timely reclamation and revegetation to equivalent pre-disturbance land capability, including engagement with Indigenous peoples on the proposed reclamation plan and effective closure plans subject to current legislative requirements.
Clarity on the proposed reclamation plans for the Project area, including how neighboring industries and land uses, such as agriculture, tourism, recreation, ranching, and Indigenous uses will be taken into account.
Clarity regarding how soil will be salvaged and managed throughout the Project life for use in reclamation.
Species at Risk, Terrestrial Wildlife, and their Habitat
Potential effects to wildlife, including species of importance to Indigenous peoples, and species at risk (i.e. grizzly bear, westslope cutthroat trout) and their habitat, including effects to wildlife health from increased contaminant concentrations in the atmospheric environment and surface waterbodies frequented by wildlife, accidental releases or spills of contaminants, habitat fragmentation, loss, and alteration, changes in geomorphological processes (e.g. sedimentation), increased mortality rates, habitat avoidance, sensory disturbance, and changes to movement patterns.
Potential effects to wildlife and species at risk due to Project effects to Castle Wildland Provincial Park, which is an important area for the protection and preservation of wildlife and fish species, including species at risk such as westslope cutthroat trout, and their habitat.
Potential effects to native plant species of importance to Indigenous peoples and species at risk (i.e. limber pine and whitebark pine) due to Project activities, such as vegetation clearing and timber removal.
Potential effects to ecologically sensitive areas, and areas of importance for conservation purposes, and areas of importance to Indigenous peoples.
Potential effects to juvenile wildlife that are especially sensitive to contaminants.
Clarity on the nature and extent of potential effects to species at risk, including grizzly bear, wolverine, whitebark pine, and limber pine, including the number of individuals affected, and the mitigation, offsetting, and follow-up and monitoring measures to address effects.
Potential effects to endangered grasslands near the Project area that provide important habitat for bighorn sheep, a species of importance to Indigenous groups.
Potential effects to the gene flow in species at risk populations due to habitat loss, fragmentation, alteration, and avoidance, and changes to movement patterns.
Clarity on the types of studies that will be undertaken to identify rare plant species and efforts that will be undertaken to avoid affecting these species.
Clarity on survey methods that will be used to collect baseline information on the presence and abundance of species at risk and their habitat.
Clarity on the methods that will be used for tree clearing and potential effects on biodiversity

and species of cultural importance.
Transboundary Effects
Potential effects of the Project and cumulative effects to water quality and quantity in waterbodies and watercourses located outside of Canada and Alberta, including Lake Koocanusa, the Kootenai River, and waterbodies and watercourses shared between the United States of America, British Columbia, and Alberta, as a result of Project activities, and effects to fish and fish habitat in those waterbodies and watercourses.
Potential effects to air quality outside of Alberta and outside of Canada and clarity on the need for transboundary air notification as per the Canada-United States Air Quality Agreement.
Clarity on the Project components or activities that will occur outside of Alberta and the need for an assessment of any potential resultant transboundary effects.
Vulnerable Population Groups (Gender Based Analysis Plus)
Clarity on the potential for the Project to result in increased gender-based violence and means to mitigate and avoid these effects.
Clarity on how the Project would differentially impact diverse groups of people with respect to relevant health factors, including sufficiently disaggregated data to determine effects for each group.
Clarity on the health, social, and economic conditions of, and the Project's potential effects to, nearby population centres, including non-Indigenous populations and employees.
Potential effects to Indigenous peoples related to gender-based violence, discrimination, and cultural heritage.
Clarity on data gaps in both quantitative and qualitative data and steps that will be taken to narrow those gaps regarding Indigenous peoples, women, low income, under or unemployed, disabled, seniors, and systematically marginalized groups.
Clarity on the Proponent's commitment to promoting equality, social justice, and positive change.
Need for a gender based analysis plus (GBA+) assessment to determine key gender gap issues and other disparities, and to identify mitigation measures to narrow these issues, including a GBA+ implementation framework.
Clarity on potential barriers to equality for various groups with respect to decision-making, participation, access, and control over resources.
Waste and Waste Management
Potential effects to surface water and groundwater quality due to the release of mine waste, including sewage, chemicals, and other wastes.
Potential effects to groundwater quality due to seepage from waste disposal areas and wastewater impoundments.
Clarity on operations and closure site-wide water quantity balances that account for all contact water produced, estimates of predicted contact water quality, and estimates of treated water quality, and plans for surface water diversions, waste rock covers, saturated rock fills, water treatment, and discharge locations during operations and closure.
Clarity on how the process of mechanical drying will negate the need for a tailings pond.
Clarity on the length of time water treatment will be required and the economic feasibility of maintaining treatment for this time period.
Water – Groundwater and Surface Water
Clarity on proposed measures to mitigate effects to surface water and groundwater quality due to selenium leaching from the previously mined areas on the Project site.
Potential effects to downstream surface water and groundwater users due to the Project, including agricultural uses.

Clarity on potential mechanisms for selenium to enter surface water and groundwater resources and associated effects to the environment, including effects outside of Canada and the province of Alberta, and cumulative effects on the terrestrial environment, neutral drainage, surface water and groundwater quality, wildlife, fish, migratory birds, and plants.
Potential effects to groundwater and surface water quality and flows, groundwater-surface water interactions, and the hydrological regimes of watercourses and waterbodies due to mining activities, seepage of selenium, calcite, and heavy metal-laden contact water, deposition of atmospheric contaminants in surface water, and potential drawdown of the water table and reductions in groundwater flow volume.
Clarity on the potential for the Project to affect the timing of the regional spring thaw and affect the severity of flooding.
Potential effects to the southeastern slopes of the Rocky Mountains, which are designated as an ecologically sensitive region and function as the headwaters for the Oldman River basin.
Clarity regarding the percentage of water that Tent Mountain contributes to the Oldman Dam in order to understand potential effects to downstream surface water quantity.
Potential effects to groundwater recharge zones, and therefore groundwater quantity and flow, due to pit excavation.
Potential effects to surface water-groundwater interactions, including effects to baseflows and temperature in nearby watercourses, and associated effects to fish and fish habitat, including effects to critical habitat for aquatic species at risk in the Crowsnest River watershed (i.e. westslope cutthroat trout) and the Castle River watershed (i.e. westslope cutthroat trout and bull trout).
Clarity on how potential effects on water quality will be assessed, including information on the methodology and factors to be assessed, and the need to consider the potential effects of sedimentation on surface water quality.
Potential effects to surface water and groundwater quality due to exposure of sulphide-bearing rock to air and water due to mining activities, which may promote acid rock drainage and leaching of metals, such as selenium.
Clarity on proposed mitigation measures to avoid or address potential Project effects to surface water and groundwater resources, including a description of any best available technologies.
Need for a conceptual model pertaining to selenium, including all important sources of selenium, mitigation measures to limit selenium releases throughout the mining cycle, and potential effects of the release of any residual selenium, including effects associated with bioaccumulation in sediments, wildlife, and fish.
Clarity on whether the saturated rock fill treatment method will be adequate to reduce selenium concentrations in contact water and prevent contamination of the surrounding environment, and clarity on monitoring methods to ensure this treatment method is effective.
Wetlands
Clarity on the potential effects and proposed treatment options for selenium mitigation in wetlands, considering high potential for bioaccumulation in biota in slow-moving water, selenium speciation management, and microbial community interaction.
Other
Potential effects to the frequency of floods and wildfires in the region, the sensitivity of the area to pine beetle infestation and the severity of outbreaks, and potential contamination of surface water within the surrounding watershed due to removal of trees within the Project footprint.