1 - Scope of Work

Responding to a request from Copper-nicus Mining Ltd., this report documents our investigation into three copper deposit sites for potential further development. Each site was evaluated for its potential impact on Copper-nicus, local First Nations, and the surrounding community.

This report grounds itself in the social, environmental, and economic reality of the region, prioritizing the sustainability and resilience necessary for a mine to serve as a positive presence for decades to come. Each site was analyzed with this philosophy in mind, using a range of tools to assess social, environmental, and economic impacts. In addition, we have developed a general engagement strategy for implementation throughout the development process — one that helps fulfill Copper-nicus's duty to consult and that fosters development in genuine partnership with the local community.

No development can ever be fully predicted or modeled without breaking ground, much less in four weeks' time. Simplifications are necessary, and our analysis should be read not as quantitative certainty but as defensible assessments of trends and possibilities. To guard against overconfidence, we adopted a conservative approach throughout: minimizing risk where possible and stress-testing each site against worst-case scenarios — treating elk migration near a site as a potential project-ending constraint, for example, or modeling an economic downturn on the scale of the 2008 financial crisis.

2 - Engagement, Learning & Synthesis

Our engagement strategies are grounded in the constitutional rights of Indigenous peoples and in Free, Prior, and Informed Consent (FPIC) protocols. They aim to establish a continuous, positive engagement process with stakeholders and rights holders throughout the mine's lifecycle.

During the development phase, a formal agreement would be signed with each local First Nation following thorough consultation on the project as a whole. During operations, the First Nations would participate in environmental monitoring, receive regular updates on project progress, and play an active role in decision-making. These strategies ensure information transparency and meaningful engagement. In the closure phase, traditional knowledge from the First Nations would be integrated into the remediation plan, and the Nations would evaluate the project's overall impact to inform future development in the region.

Project success would be measured in both technical achievement and community acceptance. On the technical side, key indicators include: copper output meeting projected levels within the break-even period, zero major safety incidents, and Nicus River water quality meeting provincial environmental standards. On the community side, indicators include: effective implementation of signed agreements, absence of formal community or Indigenous opposition, high satisfaction with employment and infrastructure benefits, and willingness among local groups to support future development in nearby areas.

We have also identified potential difficulties in the environmental and economic domains, where uncertainty is greatest before operations begin. One foreseeable risk is that environmental impacts—such as large-scale river contamination during operations—exceed the acceptable range for residents. In such a case, we would implement immediate mitigation measures and convene a panel of mine technical staff and environmental experts to develop improvement strategies. Another risk is that the company fails to meet its contractual obligations to residents regarding revenue sharing or infrastructure construction. In this scenario, the joint working team would have the authority to suspend mine operations until the agreement is honored. The company would then meet with stakeholders to either re-implement or renegotiate the contract until both parties reach consensus.

3.1 - Deposit 1 Analysis

3.1.1 Description of the Deposit

Deposit 1 is deep and narrow, containing high-grade copper ore, making it suitable for an underground mine. The high ore grade suggests strong profitability potential; however, the deposit comes with substantial safety risks due to poor rock quality in some zones.
The site is highly remote, requiring helicopter access during early stages and significant investment in infrastructure—including access roads and bridges through mountainous terrain and across the Nicus River—which would take roughly five years to complete. Both local First Nations have expressed interest in the improved access to remote locations that these roads would provide. The deposit's proximity to nearby valleys, and the absence of major water bodies in those valleys, makes for suitable tailings storage with minimal environmental risk.

3.1.2 Environmental Impact of the Solution

An underground mine at Deposit 1 would have a comparatively small impact on the landform and surrounding environment. The deposit is located near valleys with no major downstream water bodies, making them suitable for tailings storage — and preliminary assessments suggest limited risk with regard to runoff and seepage. However, elk migrate annually through the area, making preservation of the surrounding forest and shrubbery a priority. As access roads are built, areas cleared for camps and infrastructure, and valleys used for tailings, the potential for disturbance to the landform and elk migration increases. To meet the criteria outlined by stakeholders and rights holders, the surrounding landform must remain navigable for the elk throughout the mine's life.

3.1.3 Economic Viability and Sustainability

Deposit 1 has the potential to be highly profitable owing to its high-grade ore, and the copper concentration makes it the most resilient of the three deposits to fluctuations in waste rock movement and ore processing costs. However, the site's remoteness imposes significant upfront costs: helicopter access during early development, extensive road and bridge construction through mountainous terrain, a worker accommodation camp, and a dedicated power station—all of which would take roughly five years to build.

After operations begin, the deposit is projected to take 9–12 years to break even, driven by higher labour and transportation costs. Its remoteness also limits the mine's capacity to provide meaningful employment and infrastructure benefits to First Nations and surrounding communities.

3.1.4 Social Sustainability

The distance between Deposit 1 and the surrounding communities mitigates the mine's direct social impact, but this same remoteness limits its capacity to deliver meaningful local employment and infrastructure investment. Underground mining in zones of unstable rock also poses elevated safety risks to workers. Together, these factors led to Deposit 1 scoring lowest in social impact on our WDM (Appendix C).

Both First Nations and surrounding communities have expressed interest in the access to the Nicus River and Nicus Range that the mine's roads would provide. However, as shown in our CLD (Appendix A), reduced local employment and limited infrastructure investment lead to decreased social health and a weaker social license to operate. Communities that see fewer direct benefits are less likely to support the project, even if the mine's distance also shields them from its disruptions.

Given the inherent safety risks of underground mining and the limited benefits to surrounding communities, Deposit 1 is socially unfavourable.

3.2 - Deposit 2 Analysis

3.2.1 Description of the Deposit

Deposit 2 is moderately deep with a large lateral extent, and ore grade increases with depth. Geological data indicates low to moderate certainty about the deposit's extent, with rock quality deteriorating significantly at greater depth. The deposit has potential as either an open-pit or underground mine; we recommend underground mining to reduce surface disturbance near the Nicus River and to mitigate the risks associated with uncertain rock quality at depth — factors that could introduce costly delays under an open-pit approach. Underground mining does, however, require additional ground support infrastructure beyond what is needed to access the deposit, though not to the same degree as Deposit 1.

3.2.2 Environmental Impact of the Solution

An underground mining operation at Deposit 2 would result in less surface land disturbance than an open-pit alternative, benefitting the environment over the long term and simplifying remediation. However, uncertainty in rock quality raises the risk of groundwater contamination — mine water could seep into the water table and eventually reach the Nicus River, disrupting local ecology and potentially affecting food and water sources relied upon by nearby communities. We assess this as a moderate environmental risk that must be addressed to maintain sustainability. To meet the criteria outlined by stakeholders and rights holders, the operation would require controlled tailings storage, groundwater monitoring systems, and water treatment infrastructure to prevent contamination and protect the surrounding ecosystem throughout the mine's life.

3.2.3 Economic Viability and Sustainability

An underground mining operation at Deposit 2 demonstrates strong economic viability, with an estimated profit of approximately $8.79 billion — the highest among the three deposits. The site is located relatively close to the regional highway and just across the Nicus River, which would reduce transportation and logistical costs for materials and equipment compared to Deposit 1. This proximity to existing infrastructure also aligns with one of the First Nations' stated interests in improved road access. We consider Deposit 2 a stable and economically viable option for Copper-nicus, with the potential to create meaningful employment opportunities for local communities and contribute to broader regional economic growth.

3.2.4 Social Sustainability

Mining operations at Deposit 2 would provide a stable source of income for local residents and families, and the deposit's moderate proximity to the highway makes commuting feasible for workers — reducing the need for large remote accommodation camps. Infrastructure improvements associated with the project, such as road access and regional services, align with priorities previously outlined by local stakeholders and rights holders. We note, however, that the site's distance from a major population centre introduces supply chain vulnerability; we determined that careful planning for supply logistics and road infrastructure will be necessary to maintain stable operations and support nearby communities throughout the mine's life.

3.2.5 Other Considerations

One key limitation of Deposit 2 is the uncertainty in subsurface conditions — deeper rock formations in the area may be unstable, raising questions about the long-term feasibility of mining operations. This is particularly important because our WDM and CLD assessments assume linear operating costs and do not fully capture practical risks such as underground flooding, encounters with large boulders, or cave-ins. Despite these uncertainties, we found that Deposit 2 presents the most balanced outcome when weighed against the social and economic factors discussed above, and it shows the highest projected profitability under the assumptions used in our SLCA. From an environmental perspective, the smaller surface footprint of underground mining would likely shorten remediation and reduce the earthworks required during closure. We also gave initial consideration to a surface mining approach for this deposit, which indicated higher environmental risks — particularly due to tailings impoundment concerns and the deposit's proximity to the Nicus River.

3.3 - Deposit 3 Analysis

3.3.1 Description of the Deposit

Deposit 3 is large and shallow, containing low-grade copper ore—factors that suggest an open-pit mine, as its depth would not require significant removal of waste rock to reach the deposit. The site is located near the existing highway and in proximity to the town, allowing for easy access and low infrastructure investment.

However, the valley best suited for tailings storage trends north–south, with an archaeological site of cultural significance to both local First Nations at its north end. Both Nations have expressed strong opposition to any use of this valley for tailings. This creates a critical vulnerability: the overlap between the most cost-effective tailings location and culturally significant land represents a single point of failure for the project's social license.

3.3.2 Environmental Impact of the Solution

An open-pit mine at Deposit 3 would result in significant impacts to the landform, requiring prioritization of dust control and land-use management. Due to the deposit's proximity to culturally significant land, the most suitable valley for tailings is off-limits; the remaining nearby valleys have weaker sediments at their bases, adding environmental risk if used for a tailings dam.

As a result, the deposit is unlikely to be environmentally sustainable under a conventional tailings approach. To meet stakeholder and rights holder criteria, a shift to dry-stack tailings would eliminate the need for a dam, yielding a more resilient operation with lower environmental risk—though at additional cost.

3.3.3 Economic Viability and Sustainability

Deposit 3 benefits from a rapid 5–8 year break-even period, driven by its shallow depth and proximity to existing highway infrastructure. Open-pit mining of the low-grade ore is economically viable and would meet the economic criteria of the local town and First Nations through job creation and revenue sharing.

However, the deposit's long-term economic sustainability is weakened by its current reliance on a low-cost tailings slurry dam in the valley adjacent to the archaeological site. To make the deposit viable, Copper-nicus would need to invest in alternative tailings management—likely dry-stack tailings—which is necessary both to secure a social license to operate and to avoid the geotechnical risks and high costs associated with the more distant valleys with weaker sediments.

3.3.4 Social Sustainability

Deposit 3 has low social sustainability under its current configuration. Both First Nations oppose the use of the valley-based tailings slurry dam due to its proximity to the archaeological site, creating a point of friction that could halt the project unless an alternative tailings method is adopted.

The deposit's proximity to the town and highway offers positive social impacts through local employment and relatively high operational safety for workers in an open-pit setting. However, these benefits are overshadowed by the risk to culturally significant land. In its current form, the deposit fails to address the rights holders' most important social criterion: cultural protection.

3.3.5 Other Considerations

The geotechnical risks associated with a potential tailings dam failure in the valleys with weak sediments would pose serious environmental and safety consequences. This makes Deposit 3 an unsustainable option unless Copper-nicus adopts alternatives such as dry-stack tailings, as the only geotechnically stable locations for a conventional dam are on culturally significant land. The deposit would require ongoing, intensive consultation throughout the project to manage these tensions, and the negative risks outweigh the advantages of its proximity to the local town.

4 - Final Selection & Justification

4.1 Weighted Decision Matrix (WDM)

The weighted decision matrix compared the three deposits using criteria derived from stakeholder needs and sustainability considerations. These criteria included resiliency (30%), landform impacts (20%), and environmental, economic, and social factors (16.7% each). The WDM ranked the deposits as follows: Deposit 2 (7.19) > Deposit 3 (6.26) > Deposit 1 (6.25). This result indicates that Deposit 2 provides the most balanced performance across the selected criteria and stakeholder priorities. The full WDM is presented in Appendix C.

4.2 Streamlined Life Cycle Assessment (SLCA)

The SLCA compared the sustainability performance of each deposit across the mining lifecycle. Deposit 1 was assessed as less favourable due to its remote location, significant infrastructure requirements, and safety challenges associated with underground mining. Deposit 3 benefits from proximity to the community and existing infrastructure but presents landform and cultural concerns due to the nearby archaeological site. Deposit 2 demonstrates a more balanced lifecycle performance: underground mining reduces surface disturbance and waste generation compared with open-pit alternatives, and the deposit shows strong economic potential due to its profitability and improving ore grade with depth. Deeper mining may, however, introduce safety risks as rock quality decreases. The full SLCA is presented in Appendix B.

4.3 Resiliency and Uncertainty

Resiliency analysis using the causal loop diagram (CLD) and disturbance testing further supports the selection of Deposit 2. Deposit 3 presents social and environmental challenges stemming from its proximity to culturally significant land. Deposit 1 shows high resilience due to its remote location reducing its potential for friction with the local community. Deposit 2 demonstrates moderate resilience within the system, though uncertainties remain—particularly regarding rock quality at depth and potential groundwater contamination affecting the Nicus River and Nicus Lake. These risks should be addressed through careful engineering design and ongoing environmental monitoring. The CLD is presented in Appendix A.

4.4 Recommendation

Considering the results of the WDM, SLCA, and resiliency analysis, Deposit 2 provides the most balanced and sustainable option for development. It achieves the highest WDM score while maintaining a reasonable balance between environmental, economic, and social considerations. We recommend that Copper-nicus Mining Ltd. proceed with Deposit 2 for further feasibility study and development planning.

Appendix A: CLD(s)

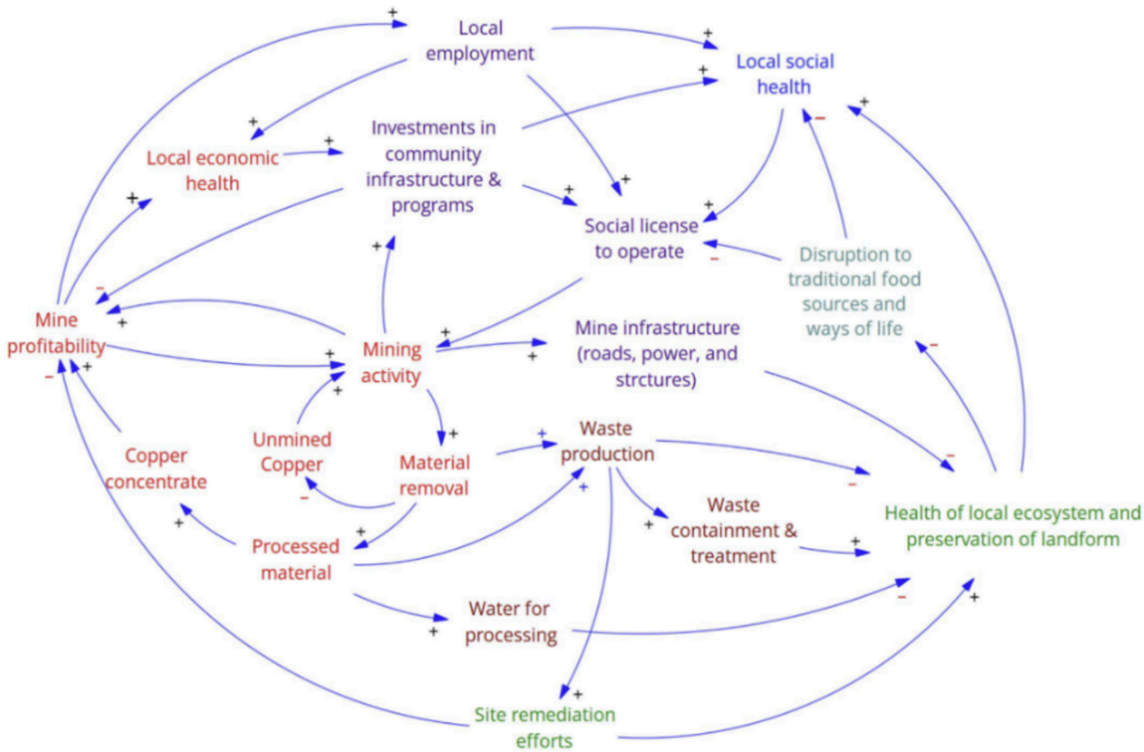


Figure A1. Causal loop diagram used for resiliency analysis

Appendix B: SLCA

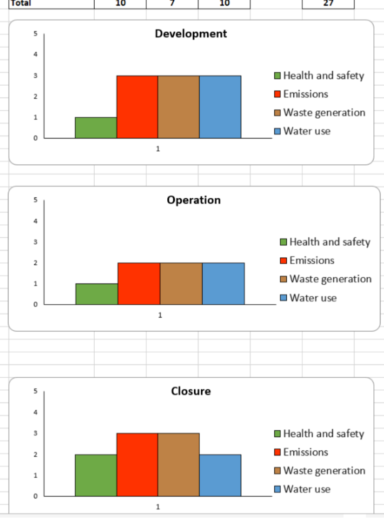
Deposit 1 – Remote; deep, narrow; high grade

	Development	Operation	Closure	Total
Health and safety	0	0	1	1
Emissions	2	1	2	5
Waste generation	2	1	2.5	5.5
Water use	3	2	0.5	5.5
Total	**7**	**4**	**6**	**17**

Deposit 2 – Moderately remote; moderately deep; grade improves with depth

Picked underground mine

	Development	Operation	Closure	Total
Health and safety	1	1	2	4
Emissions	3	2	3	8
Waste generation	3	2	3	8
Water use	3	2	2	7
Total	**10**	**7**	**10**	**27**



Deposit 3 – Near town; shallow, large; low grade

	Development	Operation	Closure	Total
Health and safety	4	3	4	11
Emissions	3	2	3	8
Waste generation	0	1	1	2
Water use	3	2	2	7
Total	**10**	**8**	**10**	**28**

Figure B1. SLCA comparison of the three mine deposits.

Appendix C: WDM

	Criteria	Weighting	Deposit 1	Deposit 2	Deposit 3
Weights and Raw Scores	Environmental (SLCA)	0.166666667	6.071428571	9.642857143	10
(fill in your weights and raw	Economic (Profit from Mine)	0.166666667	7.0203375	8.79406875	5.717925
scores in this section)	Social (Proximity to local communities and mine safety)	0.166666667	2	5.4	9
	Resiliency (Economic, Environmental, Social)	0.3	8.324674562	4.947562668	3.682511575
	Least Impact to Landform	0.2	6.166448231	8.643512451	5.190039318
	Sum of weights	**1**			
	Does Sum of weights = 1 ?	yes			
Calculated Scores	Environmental (SLCA)		1.011904762	1.607142857	1.666666667
(this section will be	Economic (Profit from Mine)		1.17005625	1.465678125	0.9529875
automatically generated based	Social (Proximity to local communities and mine safety)		0.333333333	0.9	1.5
on the values above)	Resiliency (Economic, Environmental, Social)		2.497402368	1.4842688	1.104753473
	Least Impact to Landform		1.233289646	1.72870249	1.038007864
		Total	**6.24598636**	**7.185792273**	**6.262415503**

Figure C1. Weighted decision matrix used to rank the three mine deposits.

Appendix D: Engagement Plan Table

Lifecycle	Engagement Method	Time	Format	Purpose	Involved Party
1.Development	1. Information Session/News medias 2. Environmental and Archeological monitoring contract	One-time before operation	1.Informational posters/mailouts; Open houses 2. In person meeting	1. Provide balanced information to the stakeholders 2. Acquire a formal and legal consensus with indigenous people	1.Community residents and indigenous people 2.Indigenous people representatives
2.Operation	1. Joint environmental and Archeological monitoring 2. Consultation meeting 3. Progress briefings 4.Grievance mechanisms	1. Monthly 2.Monthly or before big decisions 3. Monthly 4. Ongoing	1. On-site inspection 2. Workshops 3. Online meeting 4.Online complaint box	1.Track environmental impacts and protect cultural site 2. Obtain stakeholders' opinions and consents 3.Update mining information 4.Obtain stakeholders' thoughts and concerns	1.Indigenous representatives and company mining project group 2. Indigenous people representatives and community representatives 3. Indigenous people and community residents
3.Closure	1.Joint design of remediation plan 2. Post-closure monitoring 3. Final evaluation meeting	1. One-time after operation 2.Annual 3. One-time after closure	1. Workshop 2. On-site inspection 3. In-person meeting	1.Integrate indigenous knowledge into ecological restoration 2. Ensure long-term environmental safety 3. Summarize project impact for future development	1.Indigenous representatives and company mining project group 2. Mining company and environmental experts 3. Indigenous people representatives, community representatives, and mining company

Figure D1. Engagement Plan Table used to connect with stakeholders throughout the mine's lifecycle.

Appendix: GenAI Disclosure

Claude Opus 4.6 was used for tone consistency, concision editing, and grammar correction across the final report, in accordance with permitted GenAI uses.