
HAMMOND REEF GOLD PROJECT RESPONSE TO COMMENTS ON FINAL EIS/EA

COMMENT – T(3)-11

Source: Canadian Environmental Assessment Agency

Summary of Comment

Section 10.5 of the EIS Guidelines indicates the EIS shall assess potential effects on cultural and heritage resources. In the heritage impact assessment (HIA) report of the Cultural Heritage Resources TSD, the following are unclear for each heritage resource discovered at the Hammond Reef and Sawbill historic mine sites:

- the potential effect due to the Project or project activities on each of the heritage resources and their heritage value;
- which of the mitigation options appearing in Appendix B of the HIA report (i.e. conservation option 1, conservation option 2, and interpretation program) Canadian Malartic Corporation has committed to implement and the rationale for the selection;
- the predicted residual effects and the significance of those residual effects on the heritage resources and their heritage value at each site; and
- whether any monitoring measures will be implemented.

The Agency requires this missing information to analyze the potential effects on heritage resources.

Proposed Action

1. For each of the heritage resources discovered at the Hammond Reef and Sawbill historic mine sites, describe the potential effect due to the Project or project activities on each of the heritage resources and their heritage value, without mitigation.
2. For each of the heritage resources discovered at the Hammond Reef and Sawbill historic mine sites, state which of the mitigation options appearing in Appendix B of the HIA report (i.e. conservation option 1, conservation option 2, and interpretation program) is CMC committed to implement and provide the rationale for choosing the option(s).
3. Describe the residual effects on each site's heritage resources and their heritage value, after the mitigation is implemented and the significance of those residual effects based on the Agency's methodology for assessing significance (including the criteria of magnitude, geographic extent, duration, frequency, reversibility, ecological/social/cultural context).
4. Describe the proposed monitoring measures of the heritage resources over the life of the Project. If no monitoring is proposed, provide a rationale to explain why.

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Response

1. For each of the heritage resources discovered at the Hammond Reef and Sawbill historic mine sites, describe the potential effect due to the Project or project activities on each of the heritage resources and their heritage value, without mitigation.

The potential effects of the heritage resources are described in Table 1.

With the exception of the cabin ruins, the heritage features associated with the Hammond Reef mine will require complete removal since they are within the planned east pit area and other required site infrastructure. If possible, the Hammond Reef cabin ruins will be avoided such that no adverse effects are imposed.

The Sawbill Mine is located in an area between the planned utility corridor and the Waste Rock Stockpile. With the exception of the Shafts 1 & 2 (see HIA, Map 3), the heritage features associated with the Sawbill Mine may require partial or total removal to facilitate development of the utility corridor and waste rock stockpile. The Keighley Engine has been removed from the area and is currently undergoing restoration. If possible, disturbance of Shafts 1 & 2 will be avoided such that no adverse effects are imposed.

The potential effects described in Table 1 and in the preceding paragraphs assume that the heritage features are not considered to be hazards to public safety. A mine hazards assessment is planned and should hazards associated with a historic mine features be identified, mitigation may include potential removal of the feature.

Table 1: Potential Effects on Heritage Resources

Heritage Resource	Potential effect without mitigation
Sawbill Mine Shaft 1	No adverse effect
Sawbill Mine Shaft 2	No adverse effect
Sawbill Mine Shaft 3	Partial or total removal but loss of heritage value has been mitigated through photographic documentation.
Sawbill Stamp Mill Foundations with pillow block and concrete tanks	Partial or total removal but loss of heritage value has been mitigated through photographic documentation.
Sawbill Keighley Engine	This resource has been removed from the site and is currently under restoration.
Sawbill Small Steam Engine	Partial or total removal but loss of heritage value has been mitigated through photographic documentation.
Sawbill Pulley Block	Partial or total removal but loss of heritage value has been mitigated through photographic documentation.
Hammond Reef Mine Adit 1	Total removal but loss of heritage value has been mitigated through photographic documentation.
Hammond Reef Mine Adit 2	Total removal but loss of heritage value has been mitigated through photographic documentation.
Hammond Reef Rock Cut	Total removal but loss of heritage value has been mitigated through photographic documentation.
Hammond Reef Stamp Mill Box	Total removal but loss of heritage value has been mitigated through photographic documentation.
Hammond Reef Pulleys	Total removal but loss of heritage value has been mitigated through photographic documentation.

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Heritage Resource	Potential effect without mitigation
Hammond Reef Concrete Machinery Base	Total removal but loss of heritage value has been mitigated through photographic documentation.
Hammond Reef Timber Dam	Total removal but loss of heritage value has been mitigated through photographic documentation.
Hammond Reef Log Cabin and stove parts	No adverse effect if can be avoided. If this is not possible total or partial removal is required, but loss of heritage value has been mitigated through photographic documentation.

2. For each of the heritage resources discovered at the Hammond Reef and Sawbill historic mine sites, state which of the mitigation options appearing in Appendix B of the HIA report (i.e. conservation option 1, conservation option 2, and interpretation program) is CMC committed to implement and provide the rationale for choosing the option(s).

The Keighley Engine was removed from the site and transported to Alberta where it is presently undergoing restoration. The restoration is expected to take five years, after which the engine will be displayed at the Central Alberta Antique and Model Club grounds in Leslieville, Alberta. A spare cylinder head from the engine and other smaller associated artifacts were collected by the Atikokan Museum and will be featured in a display with virtual link to the restored engine.

Based on the areas presently selected for the project development and pending the results of the mine hazard assessment, the Hammond Reef cabin ruins and Sawbill Mine Shafts 1 & 2 heritage features can be left undisturbed, and retained as monuments. All other features, such as adits, shafts, dams, rock cuts, trenches and foundations, are not amenable to relocation and will be removed. All features, regardless of the potential effect of the Project or the planned mitigation have been photographically documented.

Discussions have been held with the Atikokan Museum curator about developing an early era mining interpretation program. Although plans have not yet been formulated, discussions will continue as the project moves toward construction.

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3. Describe the residual effects on each site's heritage resources and their heritage value, after the mitigation is implemented and the significance of those residual effects based on the Agency's methodology for assessing significance (including the criteria of magnitude, geographic extent, duration, frequency, reversibility, ecological/social/cultural context).

The residual effects of the Project on cultural heritage resources are outlined in Table 2.

Table 2: Description of Residual Effects on Cultural Heritage Resources

Heritage Resource	Significance of Residual Effects				
	Magnitude	Geographic extent	Duration & Frequency	Reversibility	Social/Cultural Context
Sawbill Mine Shafts 1 & 2	Low	Localized	Long term and infrequent	Irreversible	Low
	<i>Residual effects description:</i> The magnitude of residual effects is expected to be low and localized since the resource was photo-documented, is identified on maps provided to the proponent, and are not expected to be directly impacted by the Project. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is also expected to be low given the local, rather than provincial, significance.				
Sawbill Mine Shaft 3	Low	Localized	Short term and single event	Irreversible	Low
	<i>Residual effects description:</i> The magnitude of residual effects is expected to be major since the resource is within the footprint of the planned waste rock stockpile and may be partially or completely removed. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Sawbill Stamp Mill Foundation with pillow block footings and concrete tanks	Low	Localized	Short term and single event	Irreversible	Low
	<i>Residual effects description:</i> The magnitude of residual effects is expected to be major since the resource is near the planned footprint of the utility corridor and may be partially or completely removed. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is also expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Sawbill Keighley Engine	N/A	N/A	N/A	N/A	N/A
	<i>Residual effects description:</i> No residual effects are expected since the Keighley Engine was removed from the site and is presently under restoration.				
Sawbill Small Steam Engine	Low	Localized	Short term and single event	Irreversible	Low
	<i>Residual effects description:</i> The magnitude of residual effects is expected to be major since the resource is near the footprint of the planned utility corridor and may be partially or completely removed. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				

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Heritage Resource	Significance of Residual Effects				
	Magnitude	Geographic extent	Duration & Frequency	Reversibility	Social/Cultural Context
Sawbill Pulley Block	Low	Localized	Short term and single event	Irreversible	Low
	<i>Residual effects description:</i> The magnitude of residual effects is expected to be major since the resource is near the footprint of the planned utility corridor and may be partially or completely removed. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Mine Adits 1 & 2	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> No residual effects expected since the resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Rock Cut	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> No residual effects expected since the resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Stamp Mill Box	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> No residual effects expected since the resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Pulleys	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> No residual effects expected since the resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Concrete Machinery Base	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> No residual effects expected since the resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				

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Heritage Resource	Significance of Residual Effects				
	Magnitude	Geographic extent	Duration & Frequency	Reversibility	Social/Cultural Context
Hammond Reef Timber Dam	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> No residual effects expected since the resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Log Cabin and Artifacts	Low	Localized	Long term and infrequent	Irreversible	Low
	<i>Residual effects description:</i> The magnitude of residual effects is expected to be low and localized since the resource was photo-documented, is identified on maps provided to the proponent, and are not expected to be directly impacted by the Project. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is also expected to be low given the local, rather than provincial, significance.				

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4. Describe the proposed monitoring measures of the heritage resources over the life of the Project. If no monitoring is proposed, provide a rationale to explain why.

No monitoring is proposed since some of the resources will be completely removed, while those that will be avoided are in stable condition and have been identified on maps provided to the proponent. Features to be avoided will be surrounded by appropriate barriers to access (e.g., fencing) to mitigate inadvertent disturbance. Additionally, all resources have been photographically documented to preserve a record of their heritage value.

GRT Review Findings and Comments on above Responses

(Provided in letter to proponent dated October 13, 2016)

The response clarifies the heritage value of the two historic mine sites, the potential effects on features contributing to the heritage value, and the proposed mitigation that would be implemented. However, it is unclear how the integrity of mitigation measures for those features that would remain on-site would be managed to ensure ongoing effectiveness (and preservation of the onsite features).

The response describes the residual effects on heritage resources; however the analysis provided in Table 2 contains discrepancies. For several line items in Table 2, the proponent notes the magnitude of effects would be considered "low"; however the text describing the rationale for this determination indicates the magnitude would be "major". Clarification of these discrepancies is required.

Required Clarification

- a) Describe the measures that would be implemented to ensure the ongoing effectiveness of the proposed additional mitigation measures (e.g., barriers to access) to preserve the historic mine site features which would remain on-site. These measures should be included in the updated commitments registry (i.e., the response to T(2)-16).
- b) Explain, and amend as required, the discrepancies in Table 2 between the magnitude ratings assigned in the table cells and the ratings disclosed in the residual effects description content below the cells.

CMC Response

Part a)

Where features can be avoided and barriers to access (e.g., fencing) are put in place to mitigate inadvertent disturbance, the barriers will be monitored by site personnel on a monthly basis (or more frequently if warranted based on proximity to mine activities) to verify that they are functioning as intended. This commitment will be added to the updated commitments registry.

Part b)

The adjective 'major' was used in the rationale text to describe the potential direct impact of construction on a cultural heritage resource in the event that the project results in partial or complete removal of the resource, prior to mitigation and without consideration of social or cultural context. The use of the adjective 'major' was not intended to be used to describe the magnitude of the residual effects. A revised version of Table 2 is provided below. This revised Table 2 supersedes the table provided in the previous response.

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Table 2: Description of Residual Effects on Cultural Heritage Resources (Revision 1)

Heritage Resource	Significance of Residual Effects				
	Magnitude	Geographic extent	Duration & Frequency	Reversibility	Social/Cultural Context
Sawbill Mine Shafts 1 & 2	Low	Localized	Long term and infrequent	Irreversible	Low
	<i>Residual effects description:</i> The magnitude of residual effects is expected to be low and localized since the resource was photo-documented, is identified on maps provided to the proponent, and are not expected to be directly impacted by the Project. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is also expected to be low given the local, rather than provincial, significance.				
Sawbill Mine Shaft 3	Low	Localized	Short term and single event	Irreversible	Low
	<i>Residual effects description:</i> The resource is within the footprint of the planned waste rock stockpile and may be partially or completely removed. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Sawbill Stamp Mill Foundation with pillow block footings and concrete tanks	Low	Localized	Short term and single event	Irreversible	Low
	<i>Residual effects description:</i> The resource is near the planned footprint of the utility corridor and may be partially or completely removed. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is also expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Sawbill Keighley Engine	N/A	N/A	N/A	N/A	N/A
	<i>Residual effects description:</i> No residual effects are expected since the Keighley Engine was removed from the site and is presently under restoration.				
Sawbill Small Steam Engine	Low	Localized	Short term and single event	Irreversible	Low
	<i>Residual effects description:</i> The resource is near the footprint of the planned utility corridor and may be partially or completely removed. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Sawbill Pulley Block	Low	Localized	Short term and single event	Irreversible	Low
	<i>Residual effects description:</i> The resource is near the footprint of the planned utility corridor and may be partially or completely removed. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				

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	Magnitude	Geographic extent	Duration & Frequency	Reversibility	Social/Cultural Context
Hammond Reef Mine Adits 1 & 2	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> The resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Rock Cut	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> The resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Stamp Mill Box	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> The resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Pulleys	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> The resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Concrete Machinery Base	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> The resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				
Hammond Reef Timber Dam	Low	Localized	Short term and single event	Irreversible	Minor
	<i>Residual effects description:</i> The resource will be completely removed during the Project. However, although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is expected to be low and localized given that the resource was photo-documented and is of local, rather than provincial, significance.				

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Heritage Resource	Significance of Residual Effects				
	Magnitude	Geographic extent	Duration & Frequency	Reversibility	Social/Cultural Context
Hammond Reef Log Cabin and Artifacts	Low	Localized	Long term and infrequent	Irreversible	Low
	<i>Residual effects description:</i> The magnitude of residual effects is expected to be low and localized since the resource was photo-documented, is identified on maps provided to the proponent, and are not expected to be directly impacted by the Project. Although any impacts to cultural heritage resources are irreversible, the residual effects within the social and cultural context is also expected to be low given the local, rather than provincial, significance.				