



## Terrestrial Environment

Phase 2 Proposal / ጋሮፖሊስ ለፎካል ዲቪዚዮን  
ጋረጽ

Public Hearing Iqaluit and Pond Inlet January 2021  
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 ᑦᑦᑦᑦᑦᑦᑦ, ᑦᑦᑦᑦᑦᑦ 2021



## Presentation Overview

- Assessment overview  
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- Mitigation and Monitoring  
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- Technical Review Summary  
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- Project Certificate Conditions  
ፕሮጀክት ምስክር ወረቀት ስልጠናው
- Summary  
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## Phase 2 Considerations

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### Mine Site ᐅᓚᓕᓐᓂᓐ

Same Development Area  
Same Sensory Disturbances  
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Same assessment of impacts to  
terrestrial environment  
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### Rail/Road Corridor ᐅᓚᓕᓐᓂᓐ

Structure and Modifications  
Short-term Increase in Traffic  
Long-term Decrease in Traffic  
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Habitat loss  
Initial increased disturbance, railway reduces  
disturbance  
Potential barrier to movement  
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### Milne Port ᐅᓚᓕᓐᓂᓐ

Increased Development Area  
Increased Activity  
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Habitat loss  
Increased disturbance  
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## Operational Knowledge

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Comprehensive Information  
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- Inuit Knowledge  
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- Historical regional surveys  
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- Project-based surveys  
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| Knowledgebase  | Years                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------------|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                | '05                         | '06 | '07 | '08 | '09 | '10 | '11 | '12 | '13 | '14 | '15 | '16 | '17 | '18 | '19 |
| Vegetation     | Traditional Knowledge       |     | ✓   |     |     |     |     |     |     |     |     |     |     |     |     |
|                | Ecosystem Classification    | ✓   | ✓   | ✓   | ✓   |     |     |     |     |     |     |     |     |     |     |
|                | Rare and Diversity          | ✓   | ✓   | ✓   | ✓   |     |     |     |     | ✓   |     | ✓   | ✓   | ✓   | ✓   |
|                | Soil and Plant              |     |     |     | ✓   |     |     | ✓   | ✓   | ✓   |     | ✓   | ✓   |     | ✓   |
|                | Metals                      |     |     |     |     |     |     | ✓   | ✓   | ✓   |     | ✓   | ✓   |     | ✓   |
| Wildlife       | Traditional Knowledge       |     | ✓   | ✓   |     |     |     |     |     | ✓   |     |     |     |     | ✓   |
|                | Caribou-related surveys     | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
|                | Wolf den surveys            |     | ✓   | ✓   | ✓   | ✓   |     |     |     | ✓   |     |     |     |     |     |
|                | Helicopter flight heights   |     |     |     |     |     |     |     |     |     | ✓   | ✓   | ✓   | ✓   | ✓   |
|                | Snowbanks and tracks        |     |     |     |     |     |     |     |     | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Birds          | Shorebird and Songbird      |     |     |     |     |     | ✓   | ✓   | ✓   |     |     |     |     | ✓   | ✓   |
|                | Waterfowl                   |     |     |     |     |     | ✓   | ✓   | ✓   | ✓   |     |     |     |     |     |
|                | Active Nesting Birds        |     |     |     |     |     | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
|                | Cliff-nesting Raptors       | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
|                | GN Caribou collars          |     |     | ✓   | ✓   | ✓   | ✓   |     |     |     |     |     |     |     |     |
| Marine Mammals | CWS Seabirds and Shorebirds |     |     |     |     |     | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
|                | Arctic Raptors              |     |     |     |     |     | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |



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[illegible]

- Including six (6) years operational monitoring  
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ΛΓΩ<sup>5</sup>ΒΠΓ<sup>6</sup>Σ<sup>5</sup>Β

## Inuit Knowledge and Inuit Participation

[illegible]

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Traditional Knowledge Plants 2007  
 Δፌደራል ሊቀጥታ ቢሮ 2007

Phase 2 Caribou Workshop 2015  
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2015

Pond Inlet Caribou Focus Group 2008  
ᐱᓕᓂᑦᐅᓂᓄᓇ ᐃᓪᐅᓂᓄᓇᐅᓂᓄᓇ  
ᐱᓕᓂᑦᐅᓂᓄᓇ 2008



Kajjuqtikkut' Arctic Bay Working Group 2008  
 'ᑕᐃᓴᓄᔭᑦᑎᑖᑦ ᐃᑦᐱᑦᑲᑦ ᐱᑦᑕᑦᑲᑦᑎᑖᑦ 2008

Railway Workshop 2019  
 2019-2020



## Methods of Incorporating IQ into the EIS



$\triangle_{\text{b}} \rho \triangle_{\text{c}} \sigma \triangle_{\text{c}}$ [illegible]

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**ΔΕΠΟΛΥΓΩΝΙΣΜΟΣ**

- Habitat: Minimize footprint  
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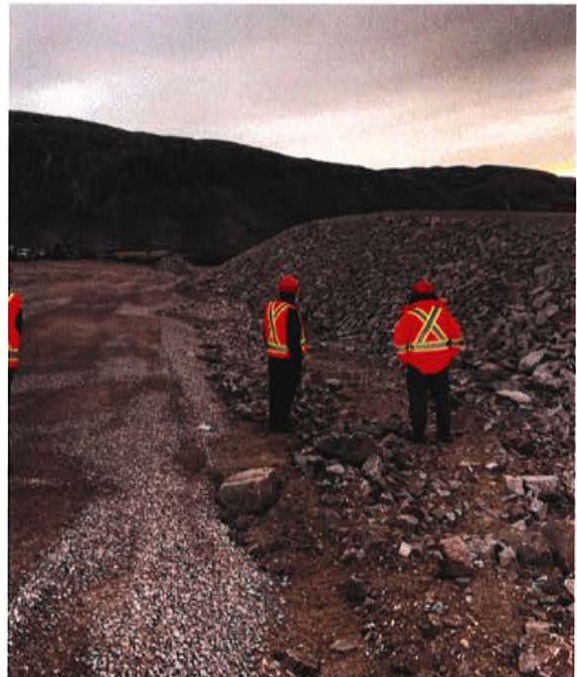
## Design Mitigations

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## Environmental Protections

[illegible]

- Movement: Trains, embankment engineering and crossings  
 $\Delta D \leq 0.5$ :  $\Delta \sigma_{\text{max}} \leq 100 \text{ kPa}$   
 $\sigma_{\text{max}} \leq 100 \text{ kPa}$
- 1:2 slopes  $\geq 2 \text{ m}$  (6.6 ft)  $\leq 4 \text{ m}$  (12.1 ft)  
 $1:2 \Delta \sigma_{\text{max}} \geq 2 \text{ ft}$  (6.6  $\Delta \sigma_{\text{max}} \leq 4 \text{ ft}$ ) (12.1  $\Delta \sigma_{\text{max}} \leq 4 \text{ ft}$ )
- Type 8 (< 6 in) embankment material  
 $\sigma_{\text{max}} \leq 8$  (6  $\sigma_{\text{max}} \leq 100 \text{ kPa}$ )  
 $\sigma_{\text{max}} \leq 100 \text{ kPa}$



## Design Mitigations

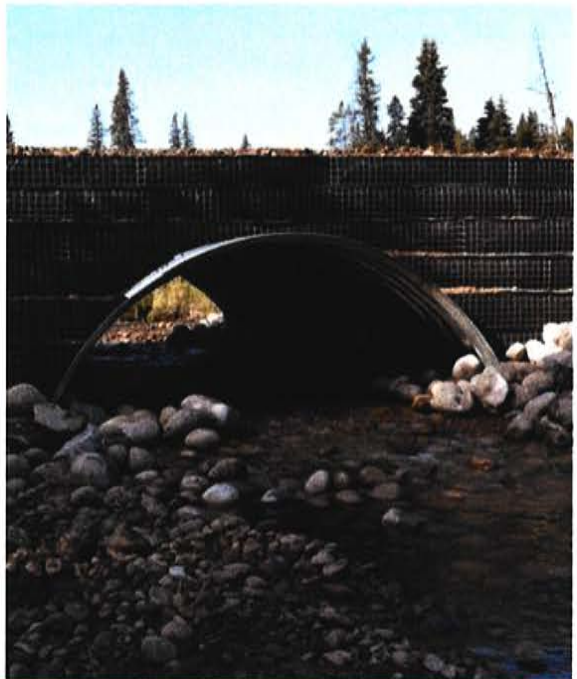
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◀<sup>c</sup>▷Δσ<sup>s</sup>bb<sup>L</sup>L<sup>c</sup>CΔcLΠ<sup>c</sup>Πσ<sup>s</sup>J<sup>c</sup>

## Environmental Protections

[illegible]

- Level crossings (humans and wildlife)  
 $\Delta b^s \Delta d r^c$  ( $\Delta m^s m^c$   $\Delta L$   $\Delta L^s m^c$ )
- Plate arch culverts (humans and wildlife)  
 $\Delta b^s \Delta d r^c$   $\Delta s d n d^c$   $\Delta C J^c$  ( $\Delta m^s m^c$   $\Delta L$   $\Delta L^s m^c$ )
- ~66% of rail passable by caribou without further mitigation  
 $\sim 66\%$   $\Delta s d n d^c$   $\Delta b^s \Delta d r^a$   $\Delta s j^c$   $\Delta j m^c$   
 $\Delta C \Delta \sigma^s b b L b^a \sigma^a r^c \Delta n^c$



## Design Mitigations

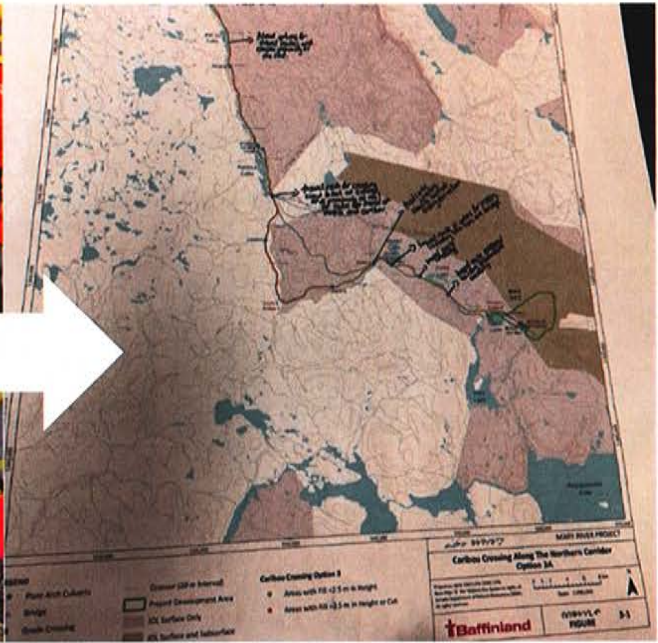
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### Environmental Protections

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Reduced disturbance compared to truck traffic  
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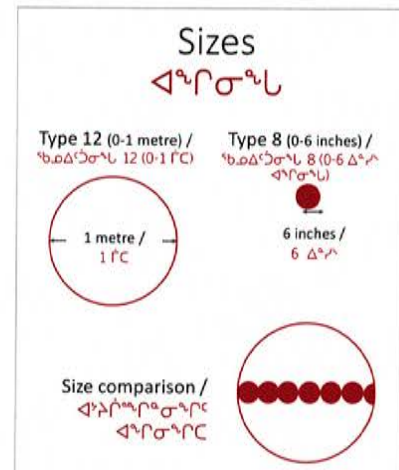
- Inuit Construction Monitors  
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Rail Line Construction  
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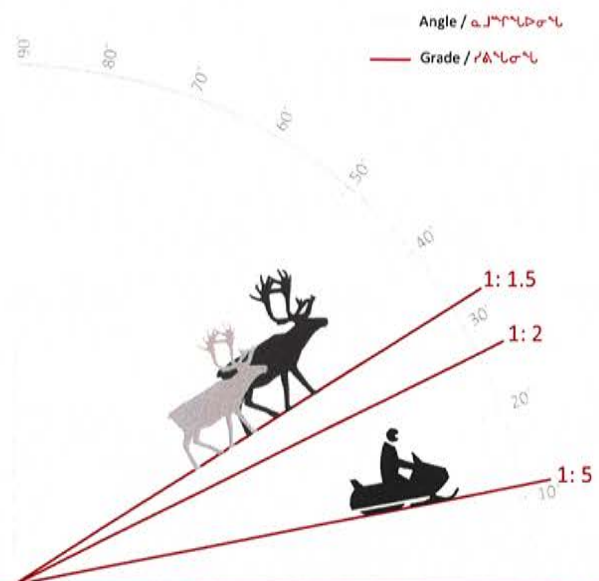
- [illegible]



## Crossing Slope Ratios

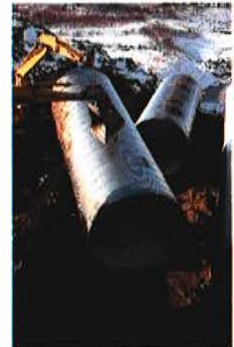


Photo depicts a 1:1.5 slope  
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כ<sup>ב</sup> כ<sup>צ</sup> Δ<sup>ב</sup> א<sup>צ</sup> ר<sup>צ</sup>

- 



◀▷<sup>c</sup>Πσ<sup>a</sup>┘<sup>c</sup> ◊<sup>a</sup>ρΓ◊<sup>b</sup>CD<sup>c</sup>ν<sup>c</sup>

[illegible]

A photograph of two reindeer standing in a snowy, mountainous landscape. The reindeer are in the foreground, facing right. The background shows snow-covered slopes and dark, forested areas under a clear sky.



## Operations Mitigations

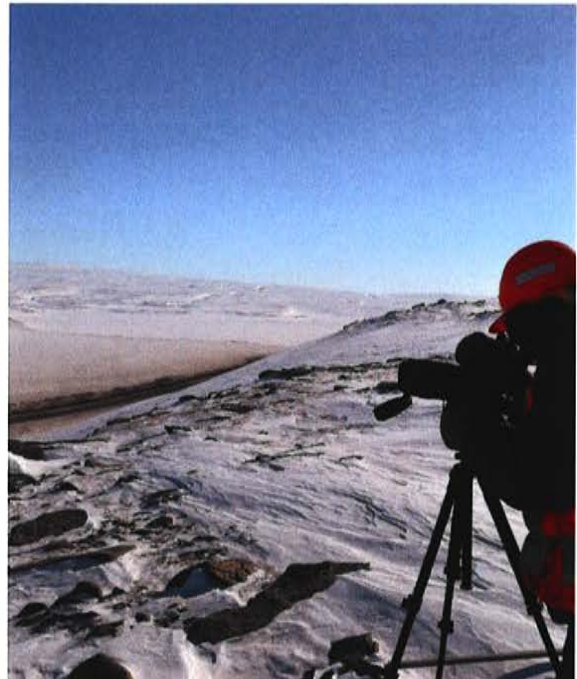
◀▷<sup>c</sup>Πσ<sup>c</sup>┐<sup>c</sup> ◀<sup>cb</sup>ΡΓ◀<sup>cb</sup>▷<sup>c</sup>┐<sup>c</sup>

## Environmental Protections

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Mortality: Non-Inuit no hunting, speed limits, protecting nests, employee awareness training

- Health: Air and noise management  
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 ማስጠበቅና ማረጋገጥ



## Operations Mitigations

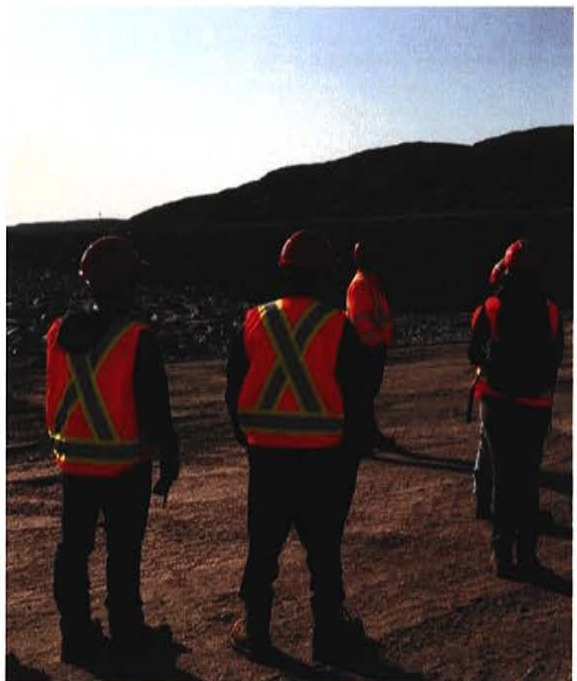
◀▷<sup>c</sup>Πσ<sup>c</sup>┐<sup>c</sup> ◊<sup>c</sup>ΠΓ◊<sup>c</sup>▷<sup>c</sup>

## Environmental Protections

**▷◁◂◃◄◅◆◇◈◉◊○◌◍◎●◐◑◒◓◔◕◖◗◘◙◚◛◜◝◞◟◠◡◢◣◤◥◦◧◨◩◪◫◬◭◮◯◰◱◲◳◴◵◶◷◸◹◺◻◼◽◾◿◀▶↔↵↶↷↸↹↺↻↼↽↾↿⤀⤁⤂⤃⤄⤅⤆⤇⤈⤉⤊⤋⤌⤍⤎⤏⤐⤑⤒⤓⤔⤕⤖⤗⤘⤙⤚⤛⤜⤝⤞⤟⤠⤡⤢⤣⤤⤥⤦⤧⤨⤩⤪⤫⤬⤭⤮⤯⤰⤱⤲⤳⤴⤵⤶⤷⤸⤹⤺⤻⤼⤽⤾⤿⥀⥁⥂⥃⥄⥅⥆⥇⥈⥉⥊⥋⥌⥍⥎⥏⥐⥑⥒⥓⥔⥕⥖⥗⥘⥙⥚⥛⥜⥝⥞⥟⥠⥡⥢⥣⥤⥥⥦⥧⥨⥩⥪⥫⥬⥭⥮⥯⥰⥱⥲⥳⥴⥵⥶⥷⥸⥹⥺⥻⥼⥽⥾⥿⦀⦁⦂⦃⦄⦅⦆⦇⦈⦉⦊⦋⦌⦍⦎⦏⦐⦑⦒⦓⦔⦕⦖⦗⦘⦙⦚⦛⦜⦝⦞⦟⦠⦡⦢⦣⦤⦥⦦⦧⦨⦩⦪⦫⦬⦭⦮⦯⦰⦱⦲⦳⦴⦵⦶⦷⦸⦹⦺⦻⦼⦽⦾⦿⧀⧁⧂⧃⧄⧅⧆⧇⧈⧉⧊⧋⧌⧍⧎⧏⧐⧑⧒⧓⧔⧕⧖⧗⧘⧙⧚⧛⧜⧝⧞⧟⧠⧡⧢⧣⧤⧥⧦⧧⧨⧩⧪⧫⧬⧭⧮⧯⧰⧱⧲⧳⧴⧵⧶⧷⧸⧹⧺⧻⧼⧽⧾⧿⨀⨁⨂⨃⨄⨅⨆⨇⨈⨉⨊⨋⨌⨍⨎⨏⨐⨑⨒⨓⨔⨕⨖⨗⨘⨙⨚⨛⨜⨝⨞⨟⨠⨡⨢⨣⨤⨥⨦⨧⨨⨩⨪⨫⨬⨭⨮⨯⨰⨱⨲⨳⨴⨵⨶⨷⨸⨹⨺⨻⨼⨽⨾⨿⩀⩁⩂⩃⩄⩅⩆⩇⩈⩉⩊⩋⩌⩍⩎⩏⩐⩑⩒⩓⩔⩕⩖⩗⩘⩙⩚⩛⩜⩝⩞⩟⩠⩡⩢⩣⩤⩥⩦⩧⩨⩩⩪⩫⩬⩭⩮⩯⩰⩱⩲⩳⩴⩵⩶⩷⩸⩹⩺⩻⩼⩽⩾⩿⪀⪁⪂⪃⪄⪅⪆⪇⪈⪉⪊⪋⪌⪍⪎⪏⪐⪑⪒⪓⪔⪕⪖⪗⪘⪙⪚⪛⪜⪝⪞⪟⪠⪡⪢⪣⪤⪥⪦⪧⪨⪩⪪⪫⪬⪭⪮⪯⪰⪱⪲⪳⪴⪵⪶⪷⪸⪹⪺⪻⪼⪽⪾⪿⫀⫁⫂⫃⫄⫅⫆⫇⫈⫉⫊⫋⫌⫍⫎⫏⫐⫑⫒⫓⫔⫕⫖⫗⫘⫙⫚⫛⫝̸⫝⫞⫟⫠⫡⫢⫣⫤⫥⫦⫧⫨⫩⫪⫫⫬⫭⫮⫯⫰⫱⫲⫳⫴⫵⫶⫷⫸⫹⫺⫻⫼⫽⫾⫿⬀⬁⬂⬃⬄⬅⬆⬇⬈⬉⬊⬋⬌⬍⬎⬏⬐⬑⬒⬓⬔⬕⬖⬗⬘⬙⬚⬛⬜⬝⬞⬟⬠⬡⬢⬣⬤⬥⬦⬧⬨⬩⬪⬫⬬⬭⬮⬯⬰⬱⬲⬳⬴⬵⬶⬷⬸⬹⬺⬻⬼⬽⬾⬿⭀⭁⭂⭃⭄⭅⭆⭇⭈⭉⭊⭋⭌⭍⭎⭏⭐⭑⭒⭓⭔⭕⭖⭗⭘⭙⭚⭛⭜⭝⭞⭟⭠⭡⭢⭣⭤⭥⭦⭧⭨⭩⭪⭫⭬⭭⭮⭯⭰⭱⭲⭳⭴⭵⭶⭷⭸⭹⭺⭻⭼⭽⭾⭿⮀⮁⮂⮃⮄⮅⮆⮇⮈⮉⮊⮋⮌⮍⮎⮏⮐⮑⮒⮓⮔⮕⮖⮗⮘⮙⮚⮛⮜⮝⮞⮟⮠⮡⮢⮣⮤⮥⮦⮧⮨⮩⮪⮫⮬⮭⮮⮯⮰⮱⮲⮳⮴⮵⮶⮷⮸⮹⮺⮻⮼⮽⮾⮿⯀⯁⯂⯃⯄⯅⯆⯇⯈⯉⯊⯋⯌⯍⯎⯏⯐⯑⯒⯓⯔⯕⯖⯗⯘⯙⯚⯛⯜⯝⯞⯟⯠⯡⯢⯣⯤⯥⯦⯧⯨⯩⯪⯫⯬⯭⯮⯯⯰⯱⯲⯳⯴⯵⯶⯷⯸⯹⯺⯻⯼⯽⯾⯿ⰀⰁⰂⰃⰄⰅⰆⰇⰈⰉⰊⰋⰌⰍⰎⰏⰐⰑⰒⰓⰔⰕⰖⰗⰘⰙⰚⰛⰜⰝⰞⰟⰠⰡⰢⰣⰤⰥⰦⰧⰨⰩⰪⰫⰬⰭⰮⰯⰰⰱⰲⰳⰴⰵⰶⰷⰸⰹⰺⰻⰼⰽⰾⰿⱀⱁⱂⱃⱄⱅⱆⱇⱈⱉⱊⱋⱌⱍⱎⱏⱐⱑⱒⱓⱔⱕⱖⱗⱘⱙⱚⱛⱜⱝⱞⱟⱠⱡⱢⱣⱤⱥⱦⱧⱨⱩⱪⱫⱬⱭⱮⱯⱰⱱⱲⱳⱴⱵⱶⱷⱸⱹⱺⱻⱼⱽⱾⱿⲀⲁⲂⲃⲄⲅⲆⲇⲈⲉⲊⲋⲌⲍⲎⲏⲐⲑⲒⲓⲔⲕⲖⲗⲘⲙⲚⲛⲜⲝⲞⲟⲠⲡⲢⲣⲤⲥⲦⲧⲨⲩⲪⲫⲬⲭⲮⲯⲰⲱⲲⲳⲴⲵⲶⲷⲸⲹⲺⲻⲼⲽⲾⲿⳀⳁⳂⳃⳄⳅⳆⳇⳈⳉⳊⳋⳌⳍⳎⳏⳐⳑⳒⳓⳔⳕⳖⳗⳘⳙⳚⳛⳜⳝⳞⳟⳠⳡⳢⳣⳤ⳥⳦⳧⳨⳩⳪ⳫⳬⳭⳮ⳯⳰⳱Ⳳⳳ⳴⳵⳶⳷⳸⳹⳺⳻⳼⳽⳾⳿ⴀⴁⴂⴃⴄⴅⴆⴇⴈⴉⴊⴋⴌⴍⴎⴏⴐⴑⴒⴓⴔⴕⴖⴗⴘⴙⴚⴛⴜⴝⴞⴟⴠⴡⴢⴣⴤⴥ⴦ⴧ⴨⴩⴪⴫⴬ⴭ⴮⴯ⴰⴱⴲⴳⴴⴵⴶⴷⴸⴹⴺⴻⴼⴽⴾⴿⵀⵁⵂⵃⵄⵅⵆⵇⵈⵉⵊⵋⵌⵍⵎⵏⵐⵑⵒⵓⵔⵕⵖⵗⵘⵙⵚⵛⵜⵝⵞⵟⵠⵡⵢⵣⵤⵥⵦⵧ⵨⵩⵪⵫⵬⵭⵮ⵯ⵰⵱⵲⵳⵴⵵⵶⵷⵸⵹⵺⵻⵼⵽⵾⵿ⶀⶁⶂⶃⶄⶅⶆⶇⶈⶉⶊⶋⶌⶍⶎⶏⶐⶑⶒⶓⶔⶕⶖ⶗⶘⶙⶚⶛⶜⶝⶞⶟ⶠⶡⶢⶣⶤⶥⶦ⶧ⶨⶩⶪⶫⶬⶭⶮ⶯ⶰⶱⶲⶳⶴⶵⶶ⶷ⶸⶹⶺⶻⶼⶽⶾ⶿ⷀⷁⷂⷃⷄⷅⷆ⷇ⷈⷉⷊⷋⷌⷍⷎ⷏ⷐⷑⷒⷓⷔⷕⷖ⷗ⷘⷙⷚⷛⷜⷝⷞ⷟ⷠⷡⷢⷣⷤⷥⷦⷧⷨⷩⷪⷫⷬⷭⷮⷯⷰⷱⷲⷳⷴⷵⷶⷷⷸⷹⷺⷻⷼⷽⷾⷿ⸀⸁⸂⸃⸄⸅⸆⸇⸈⸉⸊⸋⸌⸍⸎⸏⸐⸑⸒⸓⸔⸕⸖⸗⸘⸙⸚⸛⸜⸝⸞⸟⸠**

Constant vigilance for animals and people  
 ነፃነት ለሰጠው ሕግና ለሕዝብ ጥላቻ

- Slow speeds and reasonable stopping distances  
ሥፔድና ቆይታ ርቀት ዝኣተቦም ጉዞ
- Wildlife monitors present  
እንስሳ ንኤርካልኻልኩም ዘሎ
- Hi-rail truck used for monitoring  
ከነዚ ዓይነት ሲቪል ማኒፐላተር ዘውጅ



**▷▷ငနစင်ဂမံ**

## Environmental Protections

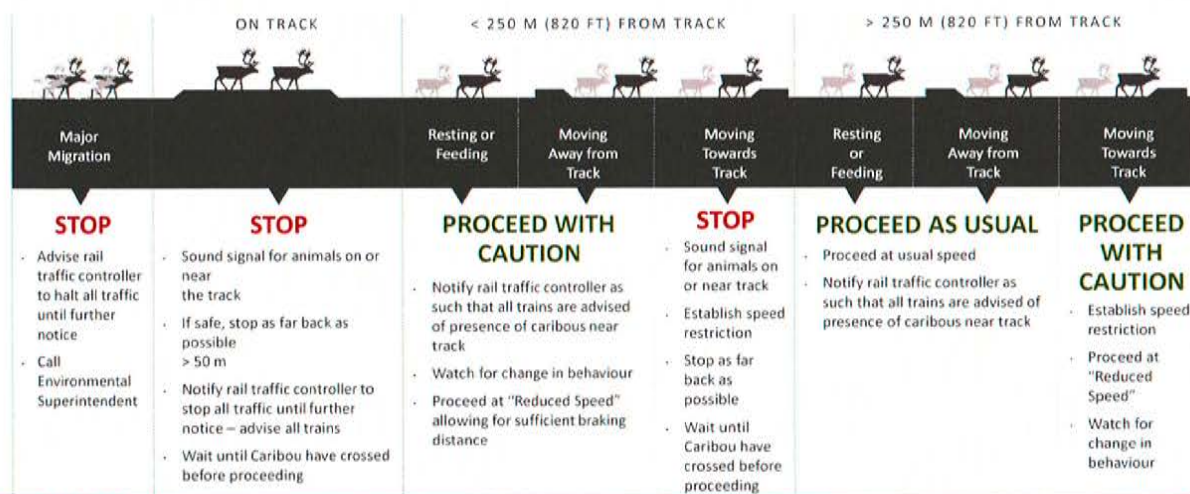
- Let the leaders pass  
 $\rho \sigma \tau \dots \alpha \beta \gamma \dots \delta \epsilon \zeta \dots \eta \theta \iota \dots \kappa \lambda \mu \dots \nu \xi \dots \omicron \pi \rho \dots \sigma \tau \dots \upsilon \phi \dots \chi \psi \dots \omega$

- Modify embankment as necessary  
ᐃᑦᓴᓯᐅᐱᑦᓴᓲᐅᐳᑎᑦ ᐱᑦᓴᓴᐃᑦ ᑕᐃᐤᐃᐱᐱᑦᓴᓴᐃᑎᑦ

- $\Delta^{\text{b}}\text{d}\text{nd}\dot{\text{C}}^{\text{c}}$   $\Delta^{\text{c}}\text{a}^{\text{b}}\text{C}\Delta\text{cL}\text{N}^{\text{c}}\text{N}^{\text{b}}\text{a}^{\text{c}}$   
 $\Delta^{\text{c}}\text{b}^{\text{c}}\text{r}^{\text{c}}\text{a}^{\text{b}}\text{b}^{\text{c}}\text{a}^{\text{c}}\Delta^{\text{c}}$   $\Delta^{\text{c}}\text{L}\text{a}$   
 $\text{a}^{\text{b}}\text{b}^{\text{c}}\text{L}\text{N}^{\text{c}}\text{N}^{\text{b}}\text{C}\sigma^{\text{c}}\sigma^{\text{c}}\text{J}^{\text{c}}$   $\text{C}^{\text{c}}\text{a}^{\text{b}}\text{b}^{\text{c}}\text{N}^{\text{c}}$



## Caribou Decision Framework — Rail





ጋፊ ለሥራ ልዩ ልዩ ምክር ቤት ለፍቃድ ምክር ቤት - ሚኒስቴር



## Monitoring and Follow-up Programs

ԳԵՃԱԿԱՏ՝ ԳԵՃԱԿ ԸՃԱՂԼՆՈ՞՞ՇՏ՝  
 ԳԵՃԱՐՎՈ՞՞Մ

## Terrestrial Environment Mitigation and Monitoring Plan

ለሥነ ምግባርና ምግብ አስተዳደር ምርምር ምክር ቤት

(TSD 28, Appendix U) / (TSD-28, Appendix U)

## Vegetation / ለጥፋት ጋር

- Dust fall  
ᐱᓕᑦ ᑲᑕᑦᑲᑦ
- Metal uptake  
ᑭᑦᑲᑦᑲᑦᑲᑦ
- Abundance and diversity  
ᐅᓂᑦᑲᑦ ᐱᓕᑦᑲᑦᑲᑦ



## Monitoring and Follow-up Programs

ᖃᑲᑲᑦᑲᑦ ᖃᑲᑲᑦ ᑲᑲᑲᑦᑲᑦ ᖃᑲᑲᑦ  
ᖃᑲᑲᑦᑲᑦ

Terrestrial Environment Mitigation and Monitoring Plan  
ᐱᑲᑲᑦ ᑲᑲᑲᑦ ᑲᑲᑲᑦᑲᑦᑲᑦᑲᑦ ᖃᑲᑲᑦᑲᑦᑲᑦ ᑲᑲᑲᑦ

(TSD 28, Appendix U) / (TSD-28, ᑲᑲᑲᑦ U)

Birds / ᑲᑲᑲᑦ

- Active migratory bird nest survey  
ᑲᑲᑲᑦ ᑲᑲᑲᑦ ᑲᑲᑲᑦ ᖃᑲᑲᑦᑲᑦᑲᑦ
- Contribution to regional bird monitoring  
ᑲᑲᑲᑦ ᑲᑲᑲᑦᑲᑦ ᑲᑲᑲᑦ ᖃᑲᑲᑦᑲᑦᑲᑦ
- Cliff-nesting raptor research  
ᑲᑲᑲᑦ ᑲᑲᑲᑦᑲᑦ ᑲᑲᑲᑦ ᖃᑲᑲᑦᑲᑦᑲᑦ



## Monitoring and Follow-up Programs

ᖃᑲᑲᑦᑲᑦ ᖃᑲᑲᑦ ᑲᑲᑲᑦᑲᑦ ᖃᑲᑲᑦ  
ᖃᑲᑲᑦᑲᑦ

Terrestrial Environment Mitigation and Monitoring Plan  
ᐱᑲᑲᑦ ᑲᑲᑲᑦ ᑲᑲᑲᑦᑲᑦᑲᑦᑲᑦ ᖃᑲᑲᑦᑲᑦᑲᑦ ᑲᑲᑲᑦ

(TSD 28, Appendix U) / (TSD-28, ᑲᑲᑲᑦ U)

Caribou / ᑲᑲᑲᑦ

- Project-specific monitoring (height of land, snow tracks, constant vigilance, harvester observation)  
ᐱᑲᑲᑦ ᑲᑲᑲᑦ ᖃᑲᑲᑦᑲᑦ (ᑲᑲᑲᑦ ᑲᑲᑲᑦ, ᑲᑲᑲᑦ, ᑲᑲᑲᑦ ᑲᑲᑲᑦ ᑲᑲᑲᑦ ᑲᑲᑲᑦ ᑲᑲᑲᑦ)





## Monitoring and Follow-up Programs

ᖃᑭᑦᑭᑦᑭᑦ ᖃᑭᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦ ᖃᑭᑦᑭᑦᑭᑦ  
ᖃᑭᑦᑭᑦᑭᑦ

### Terrestrial Environment Mitigation and Monitoring Plan

ᐱᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦᑭᑦᑭᑦ ᖃᑭᑦᑭᑦᑭᑦᑭᑦ  
ᑭᑭᑦᑭᑦ

(TSD 28, Appendix U) / (TSD-28, ᑭᑭᑦᑭᑦ U)

#### Caribou / ᑭᑭᑦ

- Crossing structure monitoring  
ᑭᑭᑦᑭᑦᑭᑦ ᖃᑭᑦᑭᑦᑭᑦᑭᑦ
- Contribution to regional caribou monitoring  
ᑭᑭᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦᑭᑦ ᖃᑭᑦᑭᑦᑭᑦ



[www.baffinland.com](http://www.baffinland.com)

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## Monitoring and Follow-up Programs

ᖃᑭᑦᑭᑦᑭᑦ ᖃᑭᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦ ᖃᑭᑦᑭᑦᑭᑦ  
ᖃᑭᑦᑭᑦᑭᑦ

### Terrestrial Environment Mitigation and Monitoring Plan

ᐱᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦᑭᑦᑭᑦ ᖃᑭᑦᑭᑦᑭᑦᑭᑦ  
ᑭᑭᑦᑭᑦ

(TSD 28, Appendix U) / (TSD-28, ᑭᑭᑦᑭᑦ U)

#### Terrestrial Environment Working Group

ᐱᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦ ᐱᑦᑭᑦᑭᑦ

#### Culture, Resource and Land Use Monitoring

ᐱᑦᑭᑦᑭᑦᑭᑦᑭᑦᑭᑦ, ᑭᑭᑦᑭᑦᑭᑦᑭᑦ, ᑭᑭᑦᑭᑦᑭᑦ ᑭᑭᑦᑭᑦᑭᑦᑭᑦ ᖃᑭᑦᑭᑦᑭᑦ



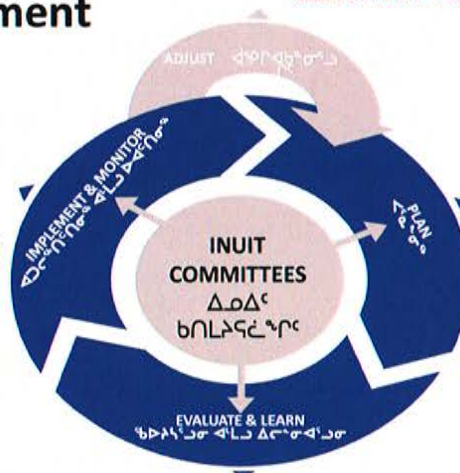
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## Adaptive Management

### 3. QIA Implements Inuit Stewardship Plan Monitoring Programs

3. የዋናው ልማት ክልሎች በጥንቃቄ ያስተካከሉበት  
ልማት <<የሰነዱ አካል>> የሚለው  
የልማት ስራ የሚያመለክት



### 1. Baffinland and QIA Agree to Adaptive Management Plan; QIA Establishes Inuit Stewardship Plan

[illegible]

## 2. Review of Monitoring Program Results Against Predetermined Indicators and Thresholds

[illegible]

#### 4. Implement Predetermined Responses as Necessary 4.

[illegible]

# Rail Construction Adaptive Management

$\triangleleft^{\text{sb}} d n d \dot{C} \rightarrow^{\text{sb}} \supset \text{m}^c \quad \triangleleft^{\text{sb}} p r \triangleleft \text{p}^{\text{a}} \text{a}^{\text{sb}} \supset \text{m}^c \quad \triangleleft \text{p}^{\text{a}} \text{a}^{\text{sb}} \supset \text{m}^c \quad \triangleleft \text{p}^{\text{a}} \text{a}^{\text{sb}} \supset \text{m}^c$

- Flatten slopes for caribou crossings / ᐃᓄᓴᑦᑐᑦᐅᑦᐅᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ
- Change material on side slope where crossings are later identified post construction ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ
- Inuit survey in front of construction crews and verification of crossings ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ
- Investigate caribou monitoring technology / ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ ᐃᓄᓴᑦᑐᑦ



# Rail Construction Adaptive Management

$\triangleleft^{\text{qb}} d \cap d \dot{C} \rightarrow \triangleleft^{\text{qb}} n \rightarrow r^c$      $\triangleleft^{\text{qb}} p r \triangleleft p^a \text{e}^{\text{qb}} \supset \text{d}^c$      $\triangleleft \triangleright \text{c}^c \cap \text{t}^c$

- [illegible]

# Rail Construction Adaptive Management

$$\triangle^{sb} d n d \bar{C} c \triangleright^{sb} \bar{D} m^c \quad \triangle^{sb} p r \triangleleft p^a q^{sb} \bar{D} m^c \quad \triangleleft \triangleright c^n \bar{D} c^c$$

- [illegible]

$\rho^b \sigma^a \Delta^b \sigma^a$   
 $\rho^b \sigma^a \Delta^b \sigma^a$   
 $\rho^b \sigma^a \Delta^b \sigma^a$

.....

Λ<sup>1</sup>∇ΠΓ<sup>Δ</sup>⊂Δ<sup>5b</sup>⊂Δ<sup>c</sup>⊂σ<sup>b</sup>⊂<sup>5b</sup>Δ<sup>c</sup>⊂σ<sup>a</sup>Γ<sup>c</sup>

- Railway as a potential barrier to human and caribou movement  
ᐱᓂᑦᐅᑎᑕᑖ ᐱᓂᑲᔨᒃᑕᑕᐁᑕᐘᐠᐸᐳᐴᑕᐱᐣᑕᐢ ᐃᐇᑕᑖ  
ᐱᐤᐭᐘ ᑐᑲᐘᑕᑖ ᐄᑕᑖᑕᑦᑏᐰᐴᑕ
- Railway alignment alternatives  
ᐄᐱᐤᑲᑎᑕᑖᑕᑖ ᐱᓂᑦᐅᑎᑕᑖ ᑕᔨᐱᓂᑕᑕᑕᑕᐱᐣᑕᐢᑕᑖᑕᑖ





## Key Issues Summary

ԱՎՈՐԼԻՃՆԱԿՆԵՐԸ

- Cumulative impacts on caribou habitat  
ᐃᑦᓴᓕᓕᓕᓕᓕ ᐃᑦᓴᓕᓕᓕᓕᓕ ᐅᐅᓕ ᐃᓚᓚᓚᓚ
- Inuit knowledge incorporated in impact significance determination  
ᐃᓂᐃᓕ ᓖᐅᐃᓚᓚᓚᓚ ᐱᓖᐅᐃᓚᓚᓚᓚᓚᓚ  
ᐃᓚᓚᓚᓚᓚᓚᓚᓚᓚᓚᓚ ᓖᐅᐃᓚᓚᓚ  
ᐃᑦᓴᓕᓕᓖᓖᓚᓚᓚ
- Regional monitoring efforts by Baffinland  
ᐃᓚᓚᓚᓚᓚᓚᓚᓚ ᓖᐅᐃᓚᓚᓚᓚ ᓖᐅᐃᓚᓚᓚᓚ



## Terrestrial Environment Key Commitments

ለገጠኖች ልዩነት ለራሳቸው ልማት

- [illegible]

## Terrestrial Environment Key Commitments

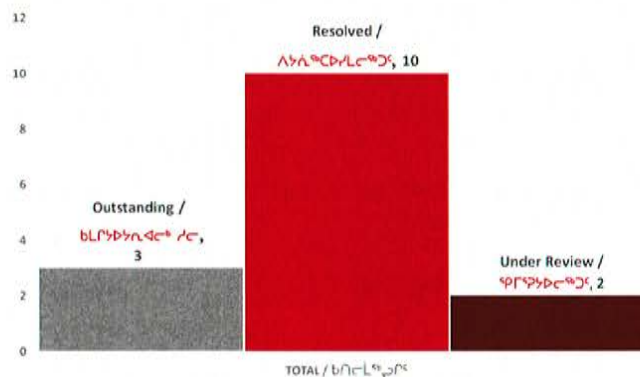
ለገጽ ፩ ለገጽ ፩ ለገጽ ፩ ለገጽ ፩ ለገጽ ፩

- [illegible]

## Status of Resolution

ፍጹም ልሳሳት ማሳሰቢያ ለሀገር ጋር ለሀገር

Terrestrial Environment  
 ለገጠና ልዩ





| <b>Comment Topic / ᐅᓃᑲᔪᕈᖁᙵᑦᐱᒃ ᐱᚉᑐᒫᑦ</b> | <b>Related ID's / ᐅᑭᕋᕆᑦ ᐳᗇᐴᑯᑦᑎᑦ</b> |
|---|-------------------------------------|
| Caribou / ᐅᑶᐅᑦ                          | WWF-FWS 07, MHTO-3                  |
| Railway / ᐱᓃᑯᑯᑯᑦᑯᑦ                      | MHTO-1, MHTO-2                      |



## Project Certificate Conditions

 $\Delta \sigma_{\text{res}} \approx 0$ 

Δαῖμονες ἔνδον καὶ ἔξω

ፍጹም ልዩ ስራ ለፍጹም ልዩ ሰው

• • • • •

## Project Certificate Conditions

ለጥራት ልዩነት ምክንያት የሚፈጠሩ የፍጥነት ልዩነቶች

- Thaw consolidation and soil deformation monitoring  
ᐃᑦᓂᕈᕋ ᐅᔭᐅᕏᒃᑦ ᐅᑎᖁᕆᖁᕐᑦ ᐅᑎᕐᓴᕐᑦ ᐱᕐᓴ ᕈᕋᐅᕐᓴᕐᑦ ᕐᐅᕈᕋᐅᕐᑦ
- Existing 39 Terms and Conditions and 27 Commitments direct monitoring and mitigation  
ᐱᕐᓴᕐᑦ 39-ᕐᓴᕐᑦ ᐅᕐᓴᕐᑦ ᐅᑎᕐᓴᕐᑦ 27-ᕐᓴᕐᑦ ᐱᕐᓴᕐᑦ ᕐᐅᕈᕋᐅᕐᑦᑦ  
ᐅᕐᓴᕐᑦᐅᕐᓴᕐᑦᑦ
- Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) updated regularly based on “lessons learned”  
ᐱᕐᓴᕐᑦ ᐅᕐᓴᕐᑦ ᐅᕐᓴᕐᑦᐅᕐᓴᕐᑦᑦ ᕐᐅᕈᕋᐅᕐᑦᑦᑦ ᐅᕐᓴᕐᑦ (TEMMP)  
ᐅᕐᓴᕐᑦᐅᕐᓴᕐᑦᑦᑦ ᐅᕐᓴᕐᑦ “ᐅᕐᓴᕐᑦᐅᕐᓴᕐᑦᑦ”



## Summary

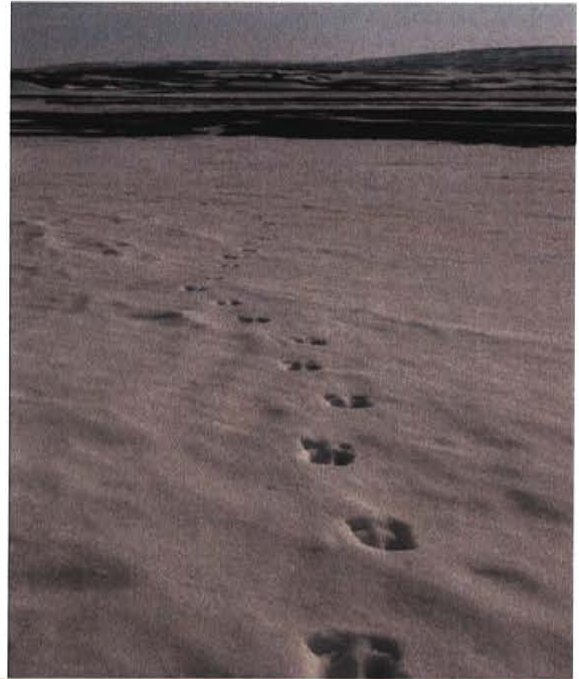
▷σ<sup>b</sup>▷ρ<sub>2</sub>▷J



## Summary

▷σ<sup>b</sup>▷ρ<sub>2</sub>⊂J

- The terrestrial environment, outside of the Project Development Area, is adequately protected from Project disturbance  
Արևի Գեղակ, Առնաձք ՂՀՏ,  
Կանյոն Լ՛ՈհԳԵԾԻՆ Առնաձք  
ՀԶԿԴՈԾԼԵԾԻՆ
- Switching to rail has substantial benefits for protecting the terrestrial environment  
ՁայնըՈհԳԵԾԻՆ ԿՅՈՒՄԸ  
ԴԵԾԻՆԵԾԻՆԱԿԵԾԻՆԵԾԻՆ ԿԵԾԻՆԸ  
ԳԵՂԱԿ



## Summary

▷σ<sup>b</sup>▷ρ<sub>2</sub>▷

- Community input to the Project Proposal has improved protection plans  
መደራጀቱ ጋኅናፋኛጋበኑ ለርቢልህፃንተረፍኑ ለኛጋፓ ለፖለቲካናርዊያንናምሪክ ነፃነትፍጥነትና ምርጫው
- The NIRB, HTOs, the Qikiqtani Inuit Association, Government of Nunavut and other regulators will continue to monitor the effectiveness of Baffinland's Terrestrial Environment Mitigation and Monitoring Plan  
ወይም ድረስ፡ ለፖለቲካናርዊያንናምሪክ ነፃነትፍጥነትና ምርጫው ይታዘባል፡፡ ለፖለቲካናርዊያንናምሪክ ነፃነትፍጥነትና ምርጫው ይታዘባል፡፡ ለፖለቲካናርዊያንናምሪክ ነፃነትፍጥነትና ምርጫው ይታዘባል፡፡





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 ልግጋል ሲሄድ በሥራ 102  
 ልግጋል, ጋራ ጋራ X0A 0H0

