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Ms. Violet Camsell-Blondin  
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Box 32  
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October 28, 2011

**Re: W2007L2-0003 Part B Item 2c – Reduction to Security Deposit**

Diavik Diamond Mines Inc. (DDMI) appreciates the timely review initiated by the Wek'èezhii Land and Water Board (WLWB) October 13, 2011.

DDMI has reviewed Aboriginal Affairs and Northern Development Canada's (AANDC) reclamation liability estimate of (October 24, 2011) as requested. After almost a year of discussions and information exchange there is agreement on most of the elements of the two cost estimates. Differences however remain in two areas; need for a Type I rock quarry and the need to mobilize fuel to site.

The attached document provides a complete rationale with supporting evidence and analysis as to why we believe a requirement to provide security provisions for a quarry and fuel mobilization is not justified. We ask that the WLWB fully consider the attached information and recommend that the WLWB not include these two cost items when reviewing the security deposit amounts.

With these two cost items excluded, the current AANDC cost estimate, the DDMI cost estimate and the 2007 AANDC cost estimate agree within 10% and indicate a Water License security deposit reduction to \$95M. The WLWB can take confidence in having three estimates all indicating a similar current liability and that this reduction can be fully explained by the improved closure conditions enabled by the successful implementation of an industry-leading waste rock management practice. The attached document includes details explaining the amount of reduction.

The WLWB has, in DDMI's opinion, adequate evidence, justification and authority to review the security deposit requirements in Water License W2007L2-0003 at the November 7, 2011 board meeting.

Please let me know if you or WLWB Staff require any clarification regarding the contents of this letter or the attached Supporting Information.

Again, DDMI appreciates the WLWB's timely consideration of these matters.

Regards,



Gord Macdonald

cc Mark Cliffe-Philips (WLWB)  
Trish Merrithew-Mercredi (AANDC)  
Teresa Joudrie (AANDC)  
Robert Jenkins (AANDC)  
Marc Lange (AANDC)  
Alasdair Martin (DDMI)

Attachment: Supporting Information – DDMI Request for a Reduction to the Security Deposit  
(W2007L2-0003 Part B Item 2c) – October 28, 2011

**Supporting Information  
DDMI Request for a Reduction to the Security Deposit  
(W2007L2-0003 Part B Item 2c)  
October 28, 2011**

Diavik Diamond Mines Inc. (DDMI), Aboriginal Affairs and Northern Development Canada (AANDC) and the Wek'èezhìi Land and Water Board (WLWB) agreed to review the security provisions required by DDMI following the approval of the Interim Closure and Reclamation Plan (ICRP). The ICRP was approved by the WLWB on September 21, 2011.

On October 13, 2011 the WLWB initiated a review of the security held under Water License W2007L2-0003 in accordance with Part B, Item 2c) which states:

*Reductions to the security deposit may be granted by the Board based on annual estimates of current liability in accordance with Part L, Item 2 of this License or based on such other information as may be available to the Board.*

Where Part L, Item 2 states:

*The Licensee shall annually, and upon request of the Board, submit to the Board, an updated estimate of the anticipated mine reclamation liability, utilizing the current version of Reclaim, or another method acceptable to the Board. This estimate shall include the expected liability at the end of the upcoming year.*

Background

The current security deposit held within the Water License is \$171,184,000 and is scheduled to increase to a maximum of \$184,130,000 on November 1, 2015 as specified in Part B Item 2a). These amounts are based on a cost estimate prepared by Brodie Consulting Ltd. (BCL) for AANDC in 1999 (BCL 1999) and summarized for the WLWB in a memorandum prepared by Gartner Lee Limited (Appendix 1).

The BCL (1999) cost estimate was revised by BCL in March 2007 (BCL 2007) at the request of AANDC. AANDC provided a copy of BCL (2007) to the WLWB on June 21, 2007. Table 1 is a summary of the BCL (1999) and BCL (2007) cost estimates.

**Table 1.** Cost estimate comparisons of BCL (1999) and BCL (2007). Note that the values for BCL (2007) exclude a \$15M "Market adjustment factor" that was included in BCL (2007) but subsequently removed (BCL August 2011).

	Water License Component	Total Cost
BCL (1999)	\$176.8 M	\$187.1 M
BCL (2007)	\$ 94.7 M	\$118.2 M

BCL (2007) provides the following general comment regarding the reason for the lower cost estimate:

*DDMI has developed the mine substantially as planned during the permitting process. The major modification to the mine plan is the improved waste rock management plan. The site inspection did not identify any unexpected conditions that would result in additional reclamation liability.*

The cost estimate prepared in 1999 was based on the assumption that DDMI would not segregate mine waste based on acid generating potential. DDMI's Waste Rock Management Plan, that included waste rock segregation based on sulphur analysis of cuttings from each mine development blast hole, received regulatory approval under Water License N7L2-1645

Part F Item 6 on June 21, 2001. This “improved” waste management is identified by BCL as a major change resulting in a reduction of \$64M (including reductions in contingency, engineering and management) to the total closure cost estimate (BCL 2007).

The revised cost estimate that includes the implementation of the Waste Rock Management Plan (BCL 2007) was not used by the WLWB to determine the current security deposit held within the Water License as it was not received in time to be considered in the Water License renewal process. AANDC have also not yet considered the revised cost estimate (BCL 2007) in regard to security provisions under the Environmental Agreement as AANDC advised its preference to wait until the ICRP was approved (AANDC 2007).

Current Cost Estimates

There are four cost estimates that have been prepared over the last four years:

BCL (2007) – this estimate was prepared by Brodie Consulting Ltd (BCL) for AANDC in March 2007 and submitted to the WLWB on June 21, 2007. DDMI also included this as Appendix VII to ICRP Version 3.0 submitted December 4, 2009.

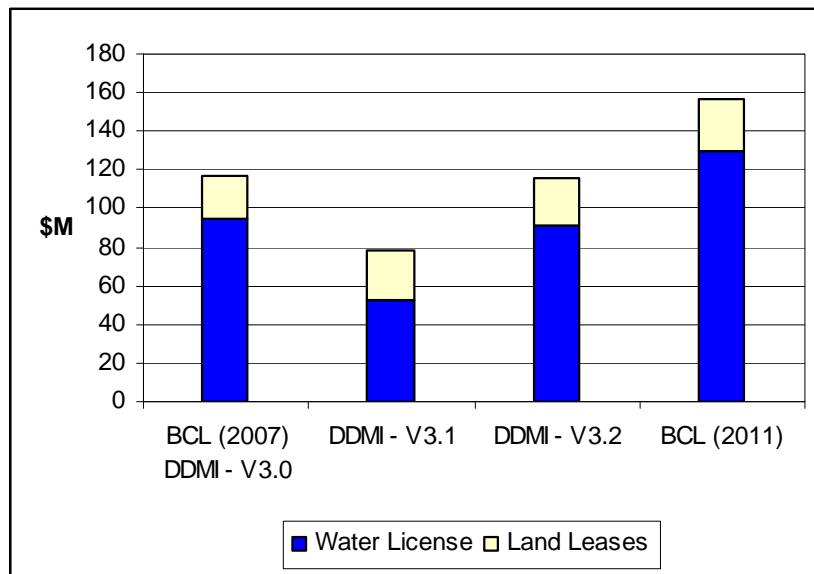
DDMI-V3.1 – this estimate was prepared by DDMI and submitted to the WLWB as Appendix VII to the ICRP Version 3.1 on December 31, 2010.

DDMI-V3.2 – this estimate was prepared by DDMI and submitted to the WLWB as Appendix VII to the ICRP Version 3.2 on July 26, 2011.

BCL (2011) – this estimate was prepared by BCL for AANDC and submitted to the WLWB on October 24, 2011.

A comparison of estimated total liability, water license and land lease amounts are compared in Figure 1 and Table 2. Appendix 2 provides a more detailed comparison.

**Figure 1.** Comparison of cost estimates. Note that the values presented here for BCL (2007) exclude a \$15M “Market adjustment factor” that was included in BCL (2007) but subsequently removed (BCL August 2011).



**Table 2.** Comparison of cost estimates. Note that the values presented here for BCL (2007) exclude a \$15M “Market adjustment factor” that was included in BCL (2007) but subsequently removed (BCL August 2011).

	<b>Total Liability</b>	<b>Water License</b>	<b>Land Leases</b>
BCL (2007) – without A21	\$116.7M	\$94.4M	\$22.3M
DDMI – V3.1	\$78.2M	\$52.6M	\$25.6M
DDMI – V3.2	\$115.4M	\$91.1M	\$24.3M
BCL (2011)	\$157.0M	\$129.2M	\$27.7M

DDMI and AANDC both used BCL (2007) as a base estimate for the subsequent estimates. DDMI elected to use BCL (2007) as a base to improve the likelihood of reaching common ground with BCL on future cost estimates or if common ground could not be reached that differences could be readily quantified. DDMI included BCL (2007) as Appendix VII in ICRP V3.0 (November 2009) specifically to ensure that all reviewers had the opportunity to consider this cost estimate.

BCL (2007) includes cost estimates for “Year 2007” and “Year 2022”. The values shown in Figure 1 and listed in Table 2 are for “Year 2007”. The “Year 2007” values do not include development of the A21 kimberlite, and so can be compared directly to mine development assumptions made for the other three cost estimates.

The DDMI–V3.1 cost estimate was included as Appendix VII in ICRP V3.1 (December 2010) as requested by the WLWB. The DDMI–V3.1 cost estimate was based on BCL (2007) but modified to reflect closure activities and work scopes described in ICRP V3.1. ICRP V3.1 included DDMI preferred closure designs for the Processed Kimberlite Containment Facility (PKC) and the North Country Rock Pile (NCRP). In total the DDMI-V3.1 cost estimate was \$38.5M less than BCL (2007). The key changes from the BCL (2007) cost estimate were as follows:

- Minus \$12.8M resulting from reduced work scopes to implement the DDMI preferred closure design for the PKC;
- Minus \$22.7M resulting from reduced work scopes to implement the DDMI preferred closure design for the NCRP;
- Minus \$5.5M resulting from DDMI assumption that fuel would be available at site for use in planned or premature closure; and
- Plus \$6.5 resulting from DDMI review of inspection and monitoring requirements.

The WLWB determined on May 10, 2011 that at this time, DDMI had not provided sufficient information to support the changes proposed to the closure designs for the PKC and NCRP. The WLWB directed DDMI to revert to the 2001 approved designs for ICRP V3.2 until such time as DDMI has provided sufficient information to support the preferred design changes.

The May 10, 2011 WLWB decision impacted the closure cost estimate. In determining that DDMI had not provided sufficient information to support changes to the NCRP and PKC designs, the WLWB was also determining that the corresponding cost estimate proposed in DDMI-V3.1 would also not be accepted at that time.

DDMI followed the WLWB directive in preparing ICRP V3.2 and included in Appendix VII a revised closure cost estimate based on the approved 2001 closure designs (DDMI–V3.2). In total the DDMI V3-2 cost estimate was \$37.2M greater than the DDMI V3.1 cost estimate. The key changes from DDMI V3.1 were as follows:

- Plus \$12.8M resulting from increased work scopes to implement the 2001 approved closure design for the PKC; and
- Plus \$22.7M resulting from reduced work scopes to implement the 2001 approved closure design for the NCRP;

Most recently BCL (2011) prepared an update to the BCL (2007) cost estimate. Changes from BCL (2007) are also described in AANDC (2011) and BCL (2011). BCL (2011) was to be based on ICRP V3.2 which was based on the 2011 approved closure designs. In total the BCL (2011) cost estimate was \$40.3M greater than the BCL (2007) cost estimate. The key changes from BCL (2007) were as follows:

- Plus \$28.2M to construct a quarry to produce rock for closure material because BCL assumes a short-fall of Type I rock; and
- Plus \$6.6M in post closure inspection and monitoring based on the cost estimate provided in DDMI-V3.1; and
- Plus \$3.1M to close the mine areas (underground and open pit) – no explanation provided.

The proposed increase of \$28.2M in the closure cost estimate for the construction of a quarry must be noted. Recall that the implementation of an improved waste rock management practices was a key basis for the BCL (2007) cost estimate:

*DDMI has developed the mine substantially as planned during the permitting process. The major modification to the mine plan is the improved waste rock management plan. The site inspection did not identify any unexpected conditions that would result in additional reclamation liability.*

Since the BCL (2007) cost estimate DDMI has continued to implement the Waste Rock Management Plan approved by the WLWB. During this period the Waste Rock Management Plan has been reviewed and approved four times under W2007L2-0003 Part F Item 5. At least 32 inspections have been completed by the AANDC Inspector with no identification of unacceptable conditions. Amounts of each waste rock type are reported monthly to the WLWB. Neither the AANDC Inspector nor the WLWB have notified DDMI as being non-compliant with the Waste Rock Management Plan (see discussion on Pages 14 and 15 below).

The proposed increase of \$28.2M is not supported with information or evidence. In the same way that the WLWB cited lack of supporting information in not accepting the reductions proposed in the DDMI V3-1 cost estimate (see above) DDMI recommends that the WLWB similarly not accept the increase of \$28.2M proposed in the BCL (2011) estimate. We ask that you consider the following supporting evidence and analysis.

#### Comparisons of DDMI and AANDC Cost estimates

The WLWB directive of October 13, 2011 also included a request that:

*Diavik will review AANDC's reclamation liability estimate and identify any differences from their own estimate along with supporting rationale to the Board. Diavik should also indicate the line items in the AANDC submission which differ from the Diavik submission, that are supported by the company by October 28, 2011.*

The two largest areas of difference are:

1. \$28.2M – Assumed requirement to quarry 6,237,000 m<sup>3</sup> of cover material for the Processed Kimberlite Containment (PKC) and North Country Rock Pile (NCRP).
2. \$5.5M – Assumed requirement to mobilize 7,000,000 liters of diesel to site.

The following is DDMI's supporting rationale on the two largest differences between the DDMI-V3.2 closure cost estimate (ICRP V3.2 Appendix VII) and the AANDC cost estimate (October 24, 2011) (BCL 2011).

*Quarry Requirement*

DDMI and BCL both used the same quantities of rock for estimating the costs required for the closure cover design currently approved by the WLWB. The quantities are shown in Table 3.

**Table 3.** Quantities of rock assumed by both DDMI and BCL in cost estimating for the PKC and NCRP closure designs currently approved by the WLWB.

	Million of cubic meters (Mm <sup>3</sup> )	Millions of tonnes (Mt)
Rock for PKC Cover	6.1 Mm <sup>3</sup>	12.5 Mt
Rock for NCRP Cover	4.3 Mm <sup>3</sup>	8.8 Mt
Total	10.4 Mm <sup>3</sup>	21.3 Mt

In fact, the quantities in Table 3 are also the same as used by BCL in the 2007 Reassessment (BCL 2007).

The difference between the DDMI-V3.2 and BCL (2011) cost estimates are not due to different assumption of the cover designs nor the quantities required to satisfy the designs.

The difference is a BCL/AANDC assumption that a quarry is required for cover material.

Three lines of reason have been provided by BCL and AANDC. The following summarizes each of these reasons and the refuting evidence.

**AANDC/BCL Quarry Reason #1** – Change in mine plan with removal of an A21 open-pit.

AANDC and BCL indicate that the need for a quarry is based on the change in the DDMI Mine Plan arguing that without an A21 open-pit in the Diavik life-of-mine plan there would be a shortfall of Type 1 rock for use in closure (AANDC 2011).

*“DDMI identified within page 84 of the December 2010 ICRP that cover materials for the NCRP were to be direct hauled from the A21 development. As this development is no longer currently planned to occur, this source cannot be relied upon to provide till and Type I rock for closure. As a result, INAC raised concerns within its comments on the draft December 2010 ICRP and within its March 3, 2011 information request that a shortfall of NPAG rock for closure activities, including cover of the NCRP and PKC, may exist. Further, the Department identified that should such a shortfall exist, a quarry to acquire this material would have to be developed.”*

It is correct that an A21 open-pit could provide DDMI with an opportunity to reduce its closure costs by completing some progressive reclamation using direct hauls of A21 waste rock. However, for the purpose of determining the amount of security deposit, closure cost estimates are to be completed with “no allowance for progressive reclamation” (BCL 2011 for example). BCL (2011) and DDMI-V3.2 follow this assumption, and as a result progressive reclamation opportunities related to waste rock from an A21 open-pit are not considered.

It is also correct that an A21 open-pit could provide significant additional quantities of Type I rock. However it is incorrect to assume that without an A21 open-pit there would be a shortfall of Type I rock.

In fact BCL (2007) analyzed the impact of including or excluding an A21 open-pit directly in this closure cost estimate. BCL (2007) provided cost estimates for years 2007 and 2022. The only difference between the estimates is that 2007 is without A21 development and 2022 is with A21 development. The total closure cost estimate and the Water License component of that total are summarized below in Table 4.

**Table 4.** Closure cost estimates from BCL (2007). Note that a \$15M “Market adjustment factor” that was included in BCL (2007) but retracted in BCL (2011) has been removed from the costs listed here.

	Water License Component	Total Cost
Without A21	\$94.4M	\$116.7M
With A21	\$94.7M	\$118.2M

BCL (2007) then concluded:

*“However, as noted below there is very little difference between the current ultimate liability (assuming no progressive reclamation) due to the relatively minor additional liability associated with the A21 pit and rock pile development”*

and;

*“A review of the schedule of production of the main rock types suggests that there will always be a surplus of Type I rock in excess of that required to cover the Type III rock. Therefore premature closure would not require quarrying to produce the necessary cover material”*

More specifically, BCL (2007) show that the cost for re-mining the Type I cover materials are exactly the same with and without an A21 open-pit. (Table 5)

**Table 5.** Closure cost estimates from BCL (2007) to provide Type I rock as closure cover material.

	Rock for PKC Cover	Rock for NCRP Cover
Without A21	\$22,039,200	\$16,988,400
With A21	\$22,039,200	\$16,988,400

**DDMI Conclusion #1** – The evidence provided by BCL (2007) shows that waste rock from an A21 open-pit was not required for closure and the costs of producing Type I rock for closure was exactly the same, with and without an A21 open-pit.

**AANDC/BCL Quarry Reason #2** – Quantities of Type I rock listed in tables for roads, laydown areas and other small stockpiles may not be fully recoverable, may have been modified in size or mixed with material of different size.

On March 4, 2011 AANDC made a request to DDMI for additional information on quantities of Type I rock available for closure as there was some confusion (by other reviews as well) on the information provided in ICRP Version 3.1. DDMI provided the requested information (see Appendix 3) on March 9, 2011 in response, including Table 6 below.

**Table 6.** DDMI Type I rock quantity information provided to BCL March 9, 2011. (reproduced from Table 6b Appendix I – “2001 ICRP – no A21” – ‘total’ row was added) (all units Mt)

	2010 Inventory	Ops Additions (2010-2023)	Ops Use (2010-2023)	Used for Closure	2025 Inventory
North Rock Pile	37.0	3.2	16.5	17.3	6.4
Type I Storage (Dump 12)	1.0	0.8	0.0	1.4	0.4
Roads, ROM, Laydown	9.4	0.4	0.0	2.3	7.5
Collection Pond Dams	1.5	0.0	0.0	0.0	1.5
Total	48.9	4.4	16.5	21.0	15.8

Table 6 above shows a surplus of 15.8 Mt (7.7 Mm<sup>3</sup>) of Type I rock after assuming both 16.5 Mt is used for ongoing operations (“Ops Use (2010-20123)”) and 21 Mt is used for closure.

Despite this information, AANDC and BCL submitted a closure cost estimate to the WLWB on April 18, 2011 (AANDC 2011) that included a \$36.6 M quarry to make up a presumed short-fall of 16 Mt (8 Mm<sup>3</sup>) in Type I rock. This cost estimate was contrary to the conclusion reached in BCL (2007) that:

*“A review of the schedule of production of the main rock types suggests that there will always be a surplus of Type I rock in excess of that required to cover the Type III rock. Therefore premature closure would not require quarrying to produce the necessary cover material”*

The AANDC (2011) submission includes “Table 2” (attached as Appendix 4) in which a DDMI list of “Potentially Available Mine Site Material” is reviewed and BCL determines that of the 8.2 Mm<sup>3</sup> listed as potentially available, 1.3 Mm<sup>3</sup> (16%) would be “reclaimable” and provided a rationale for each. This determination, that only 1.3 Mm<sup>3</sup> of Type I rock was “reclaimable” is the reason they included a \$36.6M quarry to generate the remaining 8 Mm<sup>3</sup> (16 Mt) of Type I rock.

It should be noted that the list of potentially available material in AANDC (2011) did not include the 18 Mm<sup>3</sup> (37 Mt) of Type I in the North Country Rock Pile (NCRP) (see Table 6 above).

AANDC (2011) concludes that:

*“To this end, DDMI must fully delineate the locations, volumes and methods required to access this geochemically suitable material to substantiate their claim that this material is readily available for reclamation.”*

*“In the absence of such information, a precautionary approach would be to assume that that material is not available for closure, as it may be too difficult to delineate and/or access, as compared to accessing this material elsewhere (i.e. quarry). For the purpose of this evaluation, considering the absence of this information, such a precautionary approach has been followed. However, should clarity on this issue become available, the estimate will be revised accordingly.”*

DDMI met with WLWB, AANDC, and BCL on June 29, 2011 to address four specific AANDC requests included with the AANDC (2011) submission. A copy of the material presented at the meeting and distributed to all meeting participants is included in Appendix 5. Relevant tables and figures from this presentation material were also incorporated into Section 4.4.3 of ICRP V3.2 to address WLWB (and other reviewers) concerns regarding the clarity of the Section 4.4.3 information in ICRP Version 3.1.

The information presented on June 29, 2011 was intended to demonstrate how at least 24 Mt (11.8 Mm<sup>3</sup>) of Type I rock is available for re-mining. Importantly, a mine plan change was also highlighted at this meeting. The mine plan change was significant because it resulted in an additional 16.5 Mt (8.1 Mm<sup>3</sup>) of Type I rock being available for use in closure. Previously 16.5 Mt of Type I rock from the NCRP had been designated for re-mining and use during operations (see Table 6 above) for underground back-fill. However, a decision by DDMI to change to change the underground mining back-fill method means 16.5 Mt of Type I back-fill material is no longer required for operations and is now available for closure. This change was also noted in ICRP version 3.2.

Table 7 was provided at the meeting to demonstrate that even with the use of 24 Mt of Type I rock for closure, an excess of 26.9 Mt would remain. Noted in red in Table 7 are the areas and quantities of Type I rock that DDMI suggest would be most readily available, if required, for any premature closure.

Note that Table 7 below is significantly different than the AANDC (2011) "Table 2" (Appendix 4) in that it Table 7 includes 37 Mt (18 Mm<sup>3</sup>) of Type I rock as potentially available in the NCRP. Of this potentially available NCRP rock, DDMI identified 22.8 Mt (11.2 Mm<sup>3</sup>) for closure use.

AANDC and their consultant BCL agreed to consider the information presented on June 29, 2011 and prepare a revised cost estimate (if there were any changes) by the end of August 2011.

**DDMI Conclusion #2** – AANDC (2011) concerns with Type I availability from roads, laydown areas and small stockpiles were eliminated with the inclusion of Type I rock from the NCRP. With these concerns removed, AANDC and BCL could, with confidence, remove their assumption that a quarry would be required.

**Table 7.** Type I material balance presented June 29, 2011 (see Appendix II) and included in ICRP V3.2. (All units are millions of tonnes.)

	Potential	Re-Mine	Remaining
<b>North Country Rock Pile</b>	<b>37.00</b>	<b>22.80</b>	<b>14.20</b>
Main Till Pile	0.00	0.00	0.00
Till Pile West of PKC Containment	0.00	0.00	0.00
<b>Dump 12</b>	<b>1.04</b>	<b>1.00</b>	<b>0.04</b>
Wet Well	0.16	0.00	0.16
ROM	2.49	0.00	2.49
Test Piles	0.39	0.00	0.39
A21 UG Portal Area	0.10	0.00	0.10
Waste Transfer Area	0.25	0.00	0.25
Airport Runway and Apron	1.85	0.00	1.85
Dump 7	1.32	0.00	1.32
N3 Laydown	0.46	0.00	0.46
Pit Access Road	0.15	0.00	0.15
<b>Pond 14</b>	<b>0.48</b>	<b>0.20</b>	<b>0.28</b>
UG Portal Area	0.67	0.00	0.67
South Haul Road	0.44	0.00	0.44
A21 Causeway	2.51	0.00	2.51
AN Storage/Emulsion Plant Road	0.38	0.00	0.38
Pond 2 Dam	1.27	0.00	1.27
<b>Total</b>	<b>50.9</b>	<b>24.0</b>	<b>26.9</b>

**AANDC/BCL Quarry Reason #3** – The NCRP must be assumed to be a blend of Type II/III rock and therefore Type I rock cannot be assumed to be available and a quarry would be required.

Following the June 29, 2011 it was expected that by the end of August AANDC/BCL would provide a revised closure cost estimate in consideration of the presented NCRP re-mining plan information. When contacted in late August 2011 AANDC/BCL continued to indicate concern that the NCRP was a blend of Type II/III rock and it would not be practical to re-mine Type I for closure material. A subsequent meeting with AANDC and BCL (September 16, 2011) identified that one slide from an informal presentation made by DDMI to AANDC/BCL in December 2010 remained as the root cause of the concern.

*Based upon DDMI's figure of the NCRP (extracted from Dec 2010 Powerpoint presentation shown below as Fig 1), essentially all of the perimeter of the pile is composed of Type 2/3 rock. Without clarification from DDMI, it must be assumed that all of the interior of the pile is the same blend of rock types." (AANDC, 2011)*

DDMI had not realized the significance AANDC/BCL was placing on "Figure 1" until the September 2011 meeting. For context the Figure was presented by DDMI as a "Conceptual Plan: Rock pile closure" during initial discussions with AANDC/BCL. The Figure showed areas of the NCRP where re-sloping was proposed based on the ICRP V3.0 DDMI preferred closure design. This design was subsequently not approved by the WLWB and is not included in the approved ICRP Version 3.2 design.

DDMI provided a letter of clarification on October 13, 2011 to explain "Figure 1" and provide additional information to confirm the areas of Type I within the NCRP, describe the design parameters for the re-mining and summarize a review of QA/QC results. This information is included as Appendix 6.

In response BCL (2011) concludes:

*DDMI subsequently provided several drawings which reversed the December 2010 indication of insufficient waste rock for reclamation. This newer information was not validated or substantiated with site records.*

**DDMI Conclusion #3** – DDMI has provided ample evidence, including adherence to the approved Waste Rock Management Plan, that the NCRP is not entirely a blend of Type II/III and that adequate areas of re-mineable Type I rock exists and have been delineated for potential use in closure.

**AANDC/BCL Quarry Reason #4** – DDMI has not validated or substantiated with engineered stamped drawings, site records and geochemical sampling that the Waste Rock Management Plan has been followed. Without this validation a quarry would be required.

BCL (2011) continues to only accept that 5.2% or 1.3 Mm<sup>3</sup> (2.7 Mt) of the 24.9 Mm<sup>3</sup> (50.9Mt) identified in Table 7 is available for closure.

The primary reason BCL (2007) provides for the lower cost estimate in 2007 is:

*DDMI has developed the mine substantially as planned during the permitting process. The major modification to the mine plan is the improved waste rock management plan. The site inspection did not identify any unexpected conditions that would result in additional reclamation liability.*

DDMI understands that BCL (2011) is now requiring verification and substantiation of compliance with the approved Waste Rock Management Plan; something that was not required by BCL in 2007. Further, BCL (2011) insists that this can only be demonstrated through:

- Engineered stamped drawings for each of the past 9 years of NCRP development showing areas of each rock type;
- Copies of records (spot) recording which truck dumped what rock where to verify drawings;
- Geochemical sampling of each area of the NCRP to verify drawings; and
- Adherence to a QA/QC Plan.

Schedule 2 of Water Licenses N7L2-1645 (initial Water License) and W2007L2-0003 (renewed Water License) lists “Conditions Applying to Waste Management Plans”. Items 5 and 6 are specific to the Waste Rock Management Plan. None of the requirements identified by BCL (2011) are included in Schedule 2 or anywhere else in either Water License.

The Waste Rock Management Plan has been revised nine times (see revision history below). Each revision has been provided to AANDC for review and comment. Revisions to the Waste Rock Management Plan have been approved by either the MVLWB or more recently the WLWB. None of the BCL (2011) requirements listed above have been included in any of the approved Plans.

Version	Release Date
Version A	9 Sep 1998
Version 1	15 Aug 1999
Version 2	11 Oct 2000
Version 3	30 Mar 2004
Version 4	31 Mar 2009
Version 4-1	18 Sep 2009
Version 4-2	14 Nov 2009
Version 5-0	31 March 2010
Version 6-0	31 March 2011

DDMI reports monthly on the quantities of each waste rock type produced following the Waste Rock Management Plan. These reports are submitted to the WLWB and distributed to AANDC and the Inspector.

DDMI understands that compliance with the Waste Rock Management is determined by the WLWB primarily based on frequent inspections by the AANDC Inspector. Each inspection includes a “Water Use Inspection Report”. For each area the report indicates on of the following:

A – Acceptable  
U – Unacceptable  
N/A – Not Applicable  
N/I – Not Inspected

“Ore and Waste Rock Stockpiles” is a specified area within the inspection reports. DDMI has reviewed its copies of the most recent 32 inspection (since 2008) and has not identified any “U-Unacceptable” findings for the “Ore and Waste Rock Stockpile”.

Similarly, DDMI has not received any notice of non-compliance related to the Waste Rock Management Plan from either the MVLWB or the WLWB.

A penalty as onerous as a requirement to provide security provisions to cover the full cost of a \$28.2M quarry would surely have required, at a minimum, a previous identification of non-compliance with the Waste Rock Management Plan and/or the identification of unacceptable conditions in the waste rock stockpile.

BCL (2011) is suggesting significant, retroactive changes to the reporting requirements for the Waste Rock Management Plan and the Water License, 9 years after the plan was implemented and 6 months before it will be completed. This is an unreasonable suggestion.

**DDMI Conclusion #4** DDMI has implemented the approved Waste Rock Management Plan to the satisfaction of the WLWB and AANDC Inspector. No further verification or substantiation is warranted.

**Summary:** For the reasons provided DDMI considers the AANDC/BCL conclusions that there is a \$28.2M short-fall of Type I rock to be unreasonable and not supported by evidence. DDMI respectfully requests that the WLWB exclude this aspect of the BCL (2011) cost estimate when deciding on the appropriate security deposit requirements for the Water License.

### Assumptions for Fuel Mobilization

BCL (2011) includes a \$5,460,000 line item for “Mobilization of Miscellaneous Supplies – Fuel” in the cost estimate. Of this total, \$4,504,000 (82.5%) is assigned to the Water License Component.

On-site, DDMI has installed primary storage capacity for 108 ML (million liters) of diesel with anticipated annual consumption of around 90 ML. In BCL’s opinion it is reasonable to assume that in a premature closure scenario that DDMI could somehow use or dispose of every liter of fuel stored on-site and then abandon the site.

DDMI appreciates that assumptions have to be made regarding assets that would be available on-site in a premature closure scenario. BCL and DDMI estimates both assume that fixed assets like accommodation, power generation, treatment plants etc. would remain in place and would be available in a pre-mature closure scenario. It is DDMI’s view that at least 7 ML of diesel can be reasonably assumed to be available in a premature closure scenario. This quantity of diesel (7 ML) represents only 6% of the available storage capacity on site.

AANDC has advised DDMI during discussions on this difference that the fuel mobilization assumption is an “AANDC policy”. No such principle is included in the Mine Site Reclamation Policy for the Northwest Territories (2002). The closest relevant statement, that DDMI has located, is included as an “assumption” in past and current AANDC submissions:

*“ – the cost estimate does not include revenue from recovered assets,”*

DDMI has not included revenue from recovered assets in the cost estimate.

Further, DDMI could find no reference to assumptions around fuel mobilization in either the *Mine Site Reclamation Guidelines* (INAC 2007) nor the *Draft Guidelines for the Closure and Reclamation of Advanced Mineral exploration and Mine Sites in the Northwest Territories* (August 2011) prepared by AANDC and the Land and Water Boards.

DDMI considers the BCL (2011) assumption that in a premature closure scenario DDMI could somehow leave the mine site with no diesel fuel to be unreasonable.

**Summary:** DDMI respectfully requests that the WLWB consider excluding this line item from the BCL (2011) cost estimate.

Water License Security Deposit Amounts Part B Item 2

On October 13, 2011 the WLWB initiated a review of the security held under Water License W2007L2-0003. in accordance with Part B, Item 2c) which states:

*Reductions to the security deposit may be granted by the Board based on annual estimates of current liability in accordance with Part L, Item 2 of this License or based on such other information as may be available to the Board.*

DDMI provided its estimate of current closure liability in ICRP Version 3.2 (Appendix VII – DDMI V-3.2). DDMI has reviewed the most recent cost estimate provided by AANDC on October 24, 2011 (BCL 2011). DDMI does not support making any changes to the DDMI V3.2 estimate.

For the reasons provided above, DDMI has asked that the WLWB consider not including two aspects of the BCL (2011) estimate when reviewing the security deposit amounts for the Water License:

- \$28.2M for a quarry; and
- \$5.5M to mobilize fuel.

In this submission, DDMI has provided specific evidence and analysis to support the differences between the DDMI estimate (DDMI V-3.2) and the estimate prepared by AANDC and BCL on October 24, 2011 (BCL (2011)). This evidence was also available to AANDC and BCL. DDMI asks that the WLWB fully consider this evidence and analysis in their review of the security deposit.

There are three estimates of current liability that are, in our opinion, of particular relevance to the security deposit review. DDMI summarizes them as:

	Water License Component	Total Cost
BCL (2007) – without A21 <sup>1</sup>	\$94.4 M	\$116.7 M
DDMI-V3.2	\$ 91.1 M	\$115.4 M
BCL (2011) – revised <sup>2</sup>	\$95.2 M	\$123.0 M

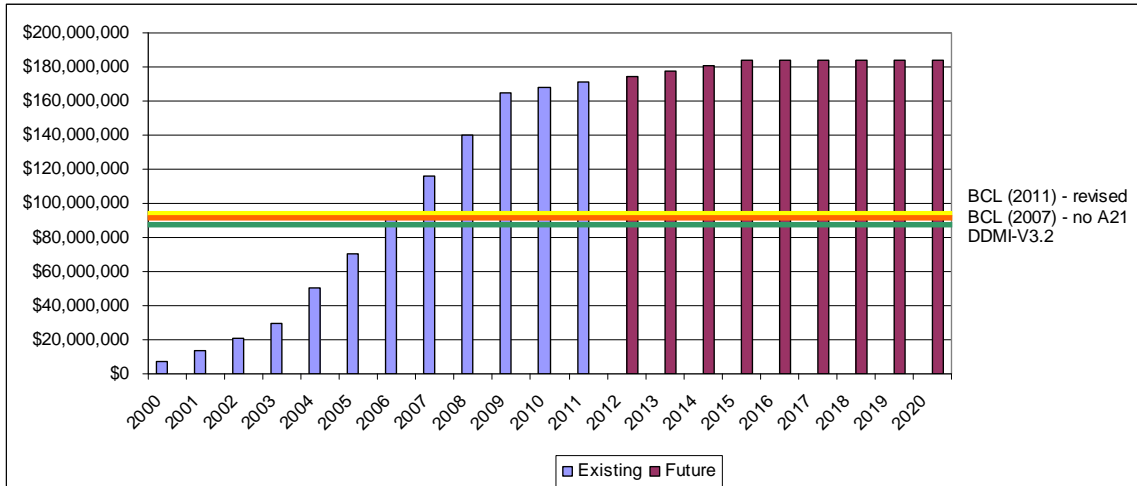
Note 1 – Values are for “Year 2007” and do not include “Market Adjustment” as discussed in AANDC (2011).

Note 2 – Values assume no requirement for a quarry or mobilization of fuel.

The three estimates above are within 10% of each other. The WLWB can take confidence in having three estimates all indicating a similar current liability.

The Water License components of the three cost estimates are contrasted in Figure 3 against the current and future amounts of security currently required by W2007L2-0003.

**Figure 3.** Comparison of the Water License components of DDMI V-3.2, BCL (2007) (without A21) and revised BCL (2011) (without the requirement for a quarry or mobilization of fuel) with the current security requirements of WL2007L2-0003.



Seventy-five million dollars of the differences between the current liability estimates and the current security requirements can be fully explained by two facts:

1. The security requirements in Water License W2007L2-0003 was based on liability estimates derived in 1999 that assumed no segregation of mine waste (BCL 1999). Without segregation of mine waste the cost of obtaining rock geochemically suitable for closure cover materials was estimated to be \$64M greater than if waste rock segregation was implemented (BCL 2007) (see also discussion on pages 3 and 4 above).
2. When the DDMI Water License was renewed in 2007 the WLWB appears to have relied on a memorandum prepared for WLWB Staff by Gartner Lee Limited when setting the amount of the security deposit (see Appendix 1). The values in the Gartner Lee memorandum are for total liability and therefore include both Water License and Land Leases security amounts. The Land Leases are held by AANDC and WLWB Staff may not have known the amounts of security already held under these instruments. In the AANDC cover letter that accompanied BCL (2007) AANDC state that:

*INAC currently holds \$11.08 million for land lease security.*

DDMI can confirm that as of March 28, 2010 the amount held by AANDC under the land leases has increased by \$10,000 and now remains at \$11,090,000.

Water License Part B Item 2c provides the WLWB authority to reduce the amount of the security deposit.

The AANDC document *Mine Site Reclamation Policy for the Northwest Territories (2002)* is clear on page 9 that:

*The Mackenzie Valley Land and Water Board [and now the WLWB] has the jurisdiction to determine the amount of security in water licenses and land use permits, while the Minister of DIAND [now AANDC] has the power to determine the form of security provided under these instruments.*

AANDC reiterate this understanding in BCL (2011).

The WLWB now has, in DDMI's opinion, adequate evidence, justification and authority to review the security deposit requirements in Water License W2007L2-0003 at the November 7, 2011 board meeting.

Appendices

Appendix 1 – Gartner Lee Limited June 6, 2007. Memorandum – DDMI Renewal License – Reclamation Security.

Appendix 2 – Comparison of Closure Cost Estimates – BCL (2007), DDMI-V3.1, DDMI-V3.2 and BCL (2011).

Appendix 3 – DDMI Additional Information March 9, 2011

Appendix 4 – “Table 2” from AANDC (2011)

Appendix 5 – DDMI Additional Information June 29, 2011

Appendix 6 – DDMI Response to Information Request – October 13, 2011

References

Aboriginal Affairs and Northern Development Canada 2011. Indian and Northern Affairs Canada RECLAIM Cost Estimate for the Diavik Diamond Mine (2011) MV2007L2-0003 including – Commentary on ICRP and Closure Cost Implications. Memorandum of April 15, 2011 prepared by Brodie Consulting Ltd. for Nathan Richea and Robert Jenkins – INAC. Submitted to WLWB April 18, 2011.

Brodie Consulting Ltd. 1999. Diavik Diamond Mine, Lac de Gras, Northwest Territory. Mine Reclamation Review and Reclamation Cost Estimate. Prepared for Department of Indian Affairs and Northern Development. November 1999.

Brodie Consulting Ltd. 2007. Diavik Diamond Mine Reclamation Review & Cost Estimate. Prepared for: Indian Affairs and Northern Development, Water Resources Division. March 2007.

Brodie Consulting Ltd. 2011. DDMI revised Security Estimate – October 2011. Prepared for Aboriginal Affairs and Northern Development Canada and submitted to the to WLWB by October 24, 2011.

WLWB May 2011. Re: WLWB Directive for Diavik's 2010 Interim Closure and Reclamation Plan (Version 3.1). Letter dated May 10, 2011 to Mr. Kim Truter DDMI.

WLWB 2011. Re: Diavik Interim Closure and Reclamation Plan – Information Request. Letter dated February 22, 2011 to Ms. Teresa Joudrie INAC.

## **Appendix 1**

Gartner Lee Limited Memorandum June 6, 2007



to: Patty Ewaschuk, Zabey Nevitt  
from: Eric Denholm  
date: June 6, 2007  
re: **DDMI Renewal Licence – Reclamation Security**

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This memo provides an explanatory summary of the Reclamation Security payment schedule as extended through the life of the mine.

### **Basic Information**

The key background information that is summarized on the attached table is as follows:

- The initial (2000) Reasons for Decision from the NWT Water Board establish the security required under the WL according to the total liability estimated by INAC at that time; this is \$116M over the 7-year (initial) term of the Licence which would increase to \$187M by the end of the mine.
- The Environmental Agreement requires that a greater sum be posted than the Water Licence (as high as \$212M); a portion of this money (generally over 50%) is the basic security that strictly relates to reclamation in the annual amounts proposed by DDMI, which total \$123M at the end of the mine; the remainder of the EA money is additional security that could be related to reclamation or other aspects of the Environmental Agreement.
- When meeting the requirements of the EA (both the basic and additional amounts), DDMI is credited with money posted under the Water Licence and Land Lease so that these are not additive.

### **Payment Schedule for the Water Licence**

In their 2005 application for renewal DDMI states that the schedule for security deposit requirements in Section 2 of the WL will require updating as the existing schedule ends with Year 2007.

Based on the INAC 1999 report and the 2000 Reasons for Decision which refers to it, the reclamation security payment schedule has been extended to provide the desired cumulative total of \$187M by the end of the mine. This is shown on an annual breakdown on the attached table.



Regarding the end of the mine, in 1999 INAC assumed that the mine would operate to 2024. However, in 2005 DDMI proposed a renewal term of 15 years to coincide with the anticipated mine life, which is 2022. Therefore, the proposed payment schedule accelerates the final series of annual collections to gather the desired total by 2022 rather than 2024.

EJD



Calendar Year	INAC-1999 <sup>1</sup>		Water Licence				Environmental Agreement		
	Year	Total \$\$	Year	Renewal	Annual \$\$ <sup>2</sup>	Cumulative \$\$ <sup>3</sup>	Security \$\$ <sup>4</sup>	Additional \$\$ <sup>5</sup>	Total \$\$ <sup>6</sup>
2000			0		7,000,000	7,000,000	15,000,000	0	15,000,000
2001			1		7,000,000	14,000,000	20,000,000	0	20,000,000
2002			2		7,000,000	21,000,000	25,000,000	0	25,000,000
2003			3		9,000,000	30,000,000	40,000,000	10,000,000	50,000,000
2004			4		20,000,000	50,000,000	48,000,000	26,000,000	74,000,000
2005	1	66,310,198	5		20,000,000	70,000,000	56,000,000	43,000,000	99,000,000
2006	2		6		23,000,000	93,000,000	65,000,000	59,000,000	124,000,000
2007	3 <sup>7</sup>	115,510,000	7		23,000,000	116,000,000	74,000,000	75,000,000	149,000,000
2008	4		8	1	24,355,000	140,355,000	80,000,000	103,000,000	183,000,000
2009	5	164,709,801	9	2	24,355,000	164,710,000	86,000,000	102,000,000	188,000,000
2010	6		10	3	3,237,000	167,947,000	92,000,000	101,000,000	193,000,000
2011	7		11	4	3,237,000	171,184,000	98,000,000	98,000,000	196,000,000
2012	8		12	5	3,237,000	174,421,000	103,000,000	95,000,000	198,000,000
2013	9		13	6	3,237,000	177,658,000	105,000,000	95,000,000	200,000,000
2014	10		14	7	3,236,000	180,894,000	107,000,000	105,000,000	212,000,000
2015	11	184,129,465	15	8	3,236,000	184,130,000	109,000,000	103,000,000	212,000,000
2016	12		16	9	429,000	184,559,000	111,000,000	101,000,000	212,000,000
2017	13		17	10	429,000	184,988,000	113,000,000	99,000,000	212,000,000
2018	14		18	11	429,000	185,417,000	115,000,000	97,000,000	212,000,000
2019	15		19	12	429,000	185,846,000	117,000,000	95,000,000	212,000,000
2020	16		20	13	428,000	186,274,000	119,000,000	93,000,000	212,000,000
2021	17		21	14	428,000	186,702,000	121,000,000	91,000,000	212,000,000
2022	18		22	15 <sup>8</sup>	428,000	187,130,000	123,000,000	89,000,000	212,000,000
2023	19						123,000,000	79,000,000	202,000,000
2024	20	187,129,950					123,000,000	59,000,000	182,000,000
2025							123,000,000	39,000,000	162,000,000
2026							123,000,000	19,000,000	142,000,000
2027							123,000,000	10,000,000	133,000,000
2028							123,000,000	10,000,000	133,000,000
2029							123,000,000	10,000,000	133,000,000
2030							123,000,000	10,000,000	133,000,000
2031							123,000,000	10,000,000	133,000,000
2032							123,000,000	10,000,000	133,000,000



## **Appendix 2**

### Comparison of Closure Cost Estimates – Detailed

**Appendix 2 – Comparison of Closure Cost Estimates – BCL (2007), DDMI-V3.1, DDMI-V3.2 and BCL (2011).**

		<b>BCL (2007)</b>	<b>DDMI V3.1</b>	<b>DDMI V3.2</b>	<b>BCL (2011)</b>
OPEN PIT		\$0.3	\$1.8	\$1.8	\$1.8
UNDERGROUND MINE		\$0.0	\$1.2	\$1.2	\$1.4
TAILINGS		\$32.1	\$21.8	\$31.8	\$47.5
ROCK PILE		\$23.9	\$4.4	\$23.1	\$29.8
BUILDINGS AND EQUIPMENT		\$15.7	\$15.0	\$15.0	\$16.1
CHEMICALS AND SOIL MANAGEMENT		\$0.8	\$1.5	\$1.5	\$2.1
WATER MANAGEMENT		\$1.1	\$1.4	\$1.4	\$1.1
	subtotal	\$74.0	\$47.0	\$75.7	\$99.8
MOBILIZATION/DEMOBILIZATION		\$10.3	\$0.3	\$0.3	\$10.3
MONITORING & MAINTENANCE		\$10.2	\$16.7	\$16.7	\$16.8
PROJECT MANAGEMENT		\$3.7	\$2.4	\$3.8	\$5.0
ENGINEERING		\$3.7	\$2.4	\$3.8	\$5.0
CONTINGENCY		\$14.8	\$9.4	\$15.1	\$20.0
Market Price Factor Adjustment		\$0.0	\$0.0	\$0.0	\$0.0
	GRAND TOTAL	\$116.7	\$78.2	\$115.4	\$157.0

Note: BCL (2007) values are for the “Year 2007” and do not include “Market adjustment”

### **Appendix 3**

DDMI Additional Information – March 9, 2011

Diavik Diamond Mines Inc.  
P.O. Box 2498  
5007 – 50<sup>th</sup> Avenue  
Yellowknife, NT X1A 2P8  
Canada  
T (867) 669 6500  
F (867) 669 9058

Ms. Teresa Joudrie  
Director  
Renewable Resources and Environment  
Indian and Northern Affairs Canada  
Box #1500  
Yellowknife, NT X1A 2R3

March 9, 2011

**Re: INAC Request for Information – March 4, 2011**

Diavik Diamond Mines Inc. (DDMI) is responding to your request of March 4, 2011 regarding information relevant to the calculation of reclamation security for the Diavik mine site.

The requested information is attached.

INAC requested specific information regarding an A21 open-pit mine. As noted in the Interim Reclamation and Closure Plan (ICRP) Version 3.1, the A21 kimberlite is not currently in the Diavik Life-of-Mine Plan and a mine plan for A21 has not yet been determined. As such the information provided in the attached related to A21 is hypothetical and in no way should be considered as any indication of an intended mining approach for A21.

With the exception of the information noted above for A21 and the information provided for Request #3 and #5c; all of the information provided was included in ICRP V3.1.

Please let me know if you have any questions regarding this information.

Regards,



Gord Macdonald

cc Mark Cliffe-Philips (WLWB)  
Ryan Fequet (WLWB)  
Patty Ewaschuk (WLWB)

Attachments: Information Request by INAC – March 4, 2011

## Information Request by INAC - March 4, 2011

### **Topic #1 Post Closure Water Quality**

Request #1 To be certain, the “proposed change” described in ICRP V3.1 is to the preferred option for closure of the waste rock pile that utilizes the 10 year period from 2011 (end of waste rock and till pile development) to 2022 (end of kimberlite production) to determine if there are any areas where additional closure actions may be required. These additional actions could include adding additional Type I material to target areas and/or adding a till cover. The original design was to place a cover using material hauled directly from an A21 open-pit mining operation.

1a) DDMI is conducting waste rock research through the Test Piles Project. One of the test piles is constructed of Type III material (13 m high) with a 1.5 m till layer followed by a 3 m Type I (NPAG) cover. Thermistors for measuring the evolution of the thermal regime have been installed within the till cover, above the till cover and below the till cover, including in the side slopes. No recent desktop studies for the evolution of the thermal regime within a till layer have been completed.

1b) One of the aforementioned Test Piles is an uncovered Type III pile (15 m high), and another Test Pile is an uncovered Type I NPAG pile (15 m high). Thermistors have been installed in the pile, including in the side slopes. DDMI has not conducted any field studies for the thermal evolution of a Type III pile with a 3 m cover of Type I NPAG rock, but the thermal characteristics of Type I and Type III material are similar. No recent desktop studies of the evolution of the thermal regime within a Type III (with or without a 3 m cover of Type I NPAG) have been completed.

Request #2 To be certain, the “proposed change” described in ICRP V3.1 is to the preferred option for closure of the waste rock pile that utilizes the 10 year period from 2011 (end of waste rock and till pile development) to 2022 (end of kimberlite production) to determine if there are any areas where additional closure actions may be required. These additional actions could include adding additional Type I material to target areas and/or adding a till cover. The original design was to place a cover using material hauled directly from an A21 open-pit mining operation.

2a) As described in 1a), one of the Test Piles is constructed of Type III material with a 1.5 m till layer followed by a 3 m Type I (NPAG) cover. Thermistors have been installed within, above, and below the till cover, including thermistors near the horizontal top surface of the Test Pile. No recent desktop studies for the evolution of the thermal regime within a till layer have been completed.

2b) As described in 1b), one of the Test Piles is an uncovered Type III pile that has been instrumented with thermistors, including thermistors near the horizontal top surface of the Test Pile. Thermistors have also been installed into the full waste rock pile that will also measure the thermal regime in the horizontal surface of Type III. No recent desktop studies for the evolution of the thermal regime within a Type III have been completed.

Request #3. Net infiltration into the ROM surface of the Test Piles is estimated at approximately 40%. The infiltration rate through the till is expected to be lower.

Request #4. No recent water quality modeling has been completed to predict the seepage water quality emanating from the Type III waste rock.

Request #5a The tailings moisture content ranges from fully saturated (e.g. in the pond) to unsaturated (e.g. near the dams).

Request #5b The percentage of frozen water in the tailings pore space is currently unknown.

Request 5c The average electrical conductivity (EC) of the saturated zone has been measured at around 1280  $\mu\text{S}/\text{cm}$ , which corresponds to approximately 750 mg/L TDS. TDS in the pond is typically < 900 mg/L. DDMI continues to monitor the PKC pond and report the EQC parameters total ammonia, total aluminum, total arsenic, total copper, total cadmium, total chromium, total lead, total zinc, total nickel, nitrate, TSS, as required by the water license. "Primary contaminants of concern" have not been formally defined.

Request 5d No water balance and water quality scenarios have been modeled to date to predict the post-closure water quality in the overflow from the reclaimed tailings area.

Request #5e Information that could be used to assess how a cover could be constructed over top of the PKC pond:

- Observed localized settlement of the south barge access road in region of pond during construction.
- Completed cone penetration test field investigation in the pond.

Please note that ICRP V3.1 does not include such a cover.

## Topic #2 Type I Rock Availability

Request #1 – The Type I waste rock volumes in Table 4-3A and 4-3B are the best estimate based on the July 2010 Life-of-Mine Plan.

Request #2 – No Type I waste rock will be produced from the A154 or A418 open pits after 2012. Small amounts of waste rock will be produced from underground development in A418/A154 but these volumes are expected to be utilized for underground backfill. An A21 open-pit could produce to 25 to 37 Mt of Type I waste rock over a 5-6 year period; commencing (theoretically) no earlier than 2015.

Request #3 – Projected quantity of Type I waste rock available for closure is about 37 Mt. Assuming a small A21 open-pit the amount would increase to approximately 55 Mt (allowing 4 Mt for A21 dike construction and 2 Mt for additional PKC raise).

Request #4 – Total Type I waste rock for 2010 ICRP (ICRP V3.1 Appendix VII)

Activity	Item	Tonnes
Open Pit	Block roads	1,800
Underground	Berm	600
Tailings	Construct East PKC dam toe berm	78,000
Tailings	Remine/Load/Haul/Place 2.0 m thick cover- allow 50% overrun	10,200,000
Rockpile	Remine/Load/Haul/Place 3.0 m thick cover- allow 50% overrun	2,223,000
Buildings & Equipment	Grade and contour mill & plant site	68,100
Water management	Rock over geotextile	120,000

**TOTAL 12,691,500**

Request #5 – Total Type I waste rock for 2001 ICRP (INAC 2007)

Activity	Item	T1
Tailings	Rock for expelled water	3,750,000
Tailings	Cover	8,494,016
Rockpile	Rock on mixed biotite schist	8,580,000
Buildings & Equipment	Grade and contour mill & plant site	68,100
Water management	Place rip rap	20,800
Water management	Rock over geotextile	120,000

**TOTAL 21,032,916**

Request #6 – Type I material availability details and access

**Table 6a - 2010 ICRP - No A21 (all units Mt)**

	2010 Inventory	Ops Additions (2010-2023)	Ops Use (2010-2023)	Used for Closure	2025 Inventory
North Rock Pile	37.0	3.2	16.5	9.0	14.7
Type I Storage (Dump 12)	1.0	0.8	0.0	1.4	0.4
Roads, ROM, Laydown	9.4	0.4	0.0	2.3	7.5
Collection Pond Dams	1.5	0.0	0.0	0.0	1.5

**Table 6b - 2001 ICRP - No A21 (all units Mt)**

	2010 Inventory	Ops Additions (2010-2023)	Ops Use (2010-2023)	Used for Closure	2025 Inventory
North Rock Pile	37.0	3.2	16.5	17.3	6.4
Type I Storage (Dump 12)	1.0	0.8	0.0	1.4	0.4
Roads, ROM, Laydown	9.4	0.4	0.0	2.3	7.5
Collection Pond Dams	1.5	0.0	0.0	0.0	1.5

**Table 6c - 2010 ICRP - With A21 (all units Mt)**

	2010 Inventory	Ops Additions (2010-2023)	Ops Use (2010-2023)	Used for Closure	2025 Inventory
North Rock Pile	37.0	3.2	20.5	0.0	19.7
Type I Storage (Dump 12)	1.0	0.8	0.0	0.0	1.8
Roads, ROM, Laydown	9.4	0.4	0.0	0.0	9.8
Collection Pond Dams	1.5	0.0	0.0	0.0	1.5
South Rock Pile	0.0	24.0	2.0	12.7	9.3

**Table 6d - 2001 ICRP - With A21 (all units Mt)**

	2010 Inventory	Ops Additions (2010-2023)	Ops Use (2010-2023)	Used for Closure	2025 Inventory
North Rock Pile	37.0	3.2	20.5	0.0	19.7
Type I Storage (Dump 12)	1.0	0.8	0.0	0.0	1.8
Roads, ROM, Laydown	9.4	0.4	0.0	0.0	9.8
Collection Pond Dams	1.5	0.0	0.0	0.0	1.5
South Rock Pile	0.0	24.0	2.0	21.0	1.0

Access to closure materials:

- Materials from the a) North Rock Pile, b) Type 1 Storage (Dump 12), and c) Roads, ROM, Laydown would be accessed using shovels to load haul trucks. It is expected the material can be accessed without blasting.
- Materials from A21 (Tables 6c and 6d) would be accessed by direct haul from the A21 mining operation for much of the closure material. Some re-mining of the south rock pile would be required for closure materials that are required after A21 mining would be complete. It is expected the material can be accessed without blasting.

## **Appendix 4**

“Table 2” from AANDC (2011)

Table 2

<b>Potentially Reclaimable Mine Site Material</b>						
	Description	Data supplied by DMMI		Estimated volume revised by Brodie Consulting Ltd.		
		m3	tonnes (x2.04)	reclaimable (%)	reclaimable m3	Rational
1	Runway/apron/airport road	906,330	1,848,913	0%	0	air strip needed
2	Ring road	1,577,150	3,217,386	0%	0	access for seep monitoring
3	North haul road	1,771,090	3,613,024	0%	0	within NCRP - contains Type 2/3?
4	Dump 7 area	646,200	1,318,248	50%	323,100	
5	N3 laydown	223,350	455,634	50%	111,675	
6	Pit access road	73,060	149,042	0%	0	unsuitable material - rock contains excess fines
7	Pond 14	430,940	879,118	50%	215,470	
8	UG portal road	326,520	666,101	25%	81,630	appears to be thin veneer in this area
9	South haul road	213,360	435,254	0%	0	unsuitable material - rock contains excess fines
10	A21 causeway	1,229,220	2,507,609	50%	614,610	
11	AN storage/DWE road	185,180	377,767	0%	0	appears to be thin veneer in this area
12	Pond 2 dam	622,630	1,270,165	0%	0	dam needed for post closure water management
	<b>Total</b>	<b>8,205,030</b>	<b>16,738,261</b>		<b>1,346,485</b>	<b>m3</b>

## Notes:

- % reclaimable is projected to be less than 100% because of:
  - impurities (sub-grade, addition of road topping),
  - breakdown of rock due to heavy truck traffic, and
  - impracticality of recovering all of the material in any given location, especially where it is a thin veneer of rock over original ground.

## **Appendix 5**

DDMI Additional Information June 29, 2011

**RioTinto**

## Closure Cost Estimate Information



AANDC-WLWB-DDMI June 29, 2011

## **INAC 2011**

Identified 4 areas where more detail was necessary regarding closure cover material accessibility and appropriateness:

- Full delineation of locations and volumes of Type I rock
- Size of the material at each location
- Methods and specific equipment to access material
- Details regarding any size modification

1. Full delineation of the locations and volumes of Type I rock. Identifying that X amount of material is located in an area is not sufficient. INAC must be confident that the material is readily available at or near the surface and that significant time and resources will not be required to delineate and/or separate the Type I material.

# How much Type I Rock do we need?

## Closure:

NCRP Cover	8.8 Mt
PKC Cover	12.5 Mt
total	21.3 Mt (INAC 2011)

Say 24 Mt to include "other"

# Where could we get Type I Rock from?

(all units Mt)

North Country Rock Pile	37.00
Main Till Pile	0.00
Till Pile West of PKC Containment	0.00
Dump 12	1.04
Wet Well	0.16
ROM	2.49
Test Piles	0.39
A21 UG Portal Area	0.10
Waste Transfer Area	0.25
Airport Runway and Apron	1.85
Dump 7	1.32
N3 Laydown	0.46
Pit Access Road	0.15
Pond 14	0.48
UG Portal Area	0.67
South Haul Road	0.44
A21 Causeway	2.51
AN Storage/Emulsion Plant Road	0.38
Pond 2 Dam	1.27
<b>Total</b>	<b>50.9</b>

Excludes 0.4 Mt from Pond 14 used for operations

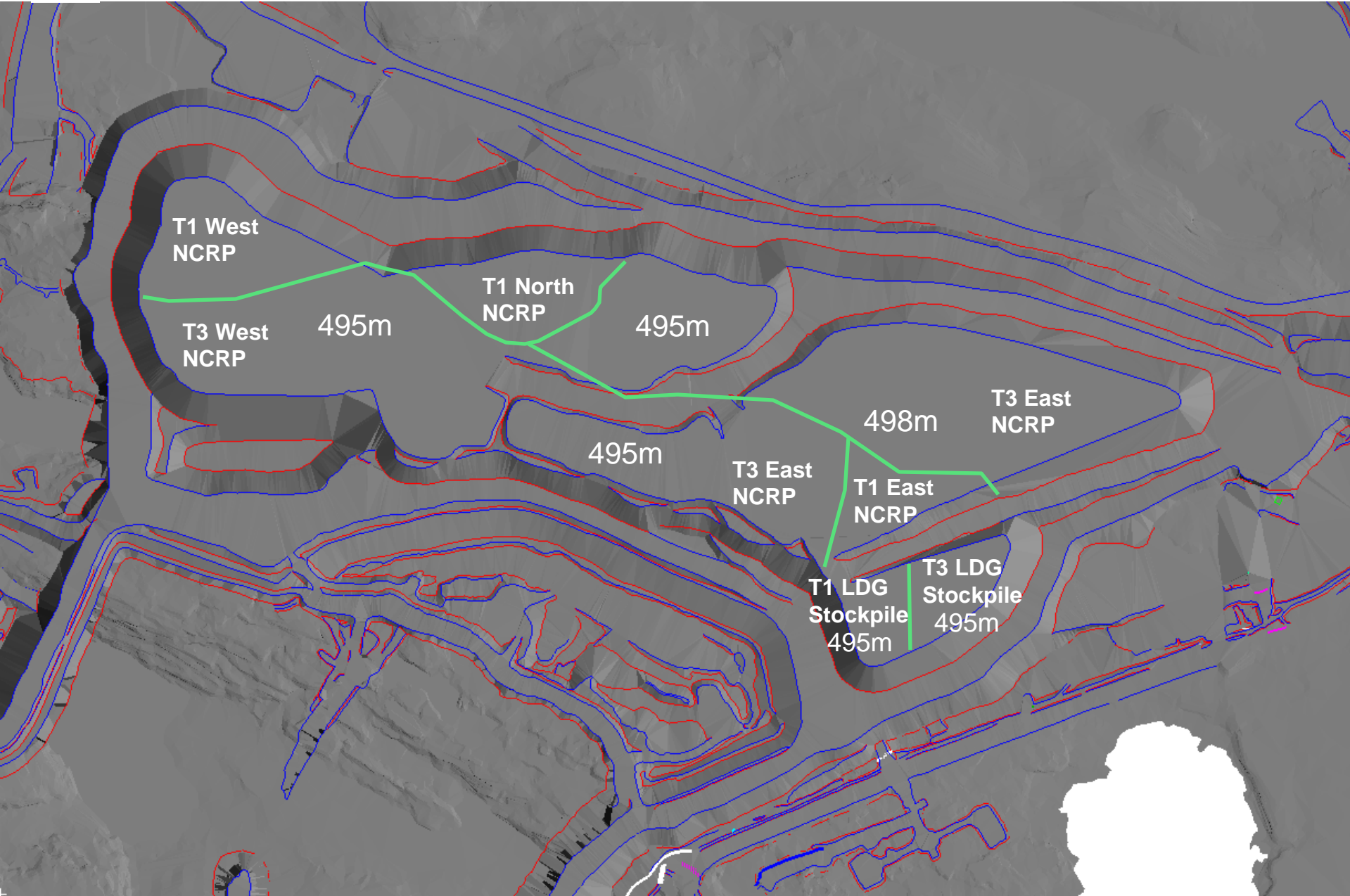
# DDMI Type I Re-mine Plan

- Life-of-mine operations requirements for Type I (Mt):

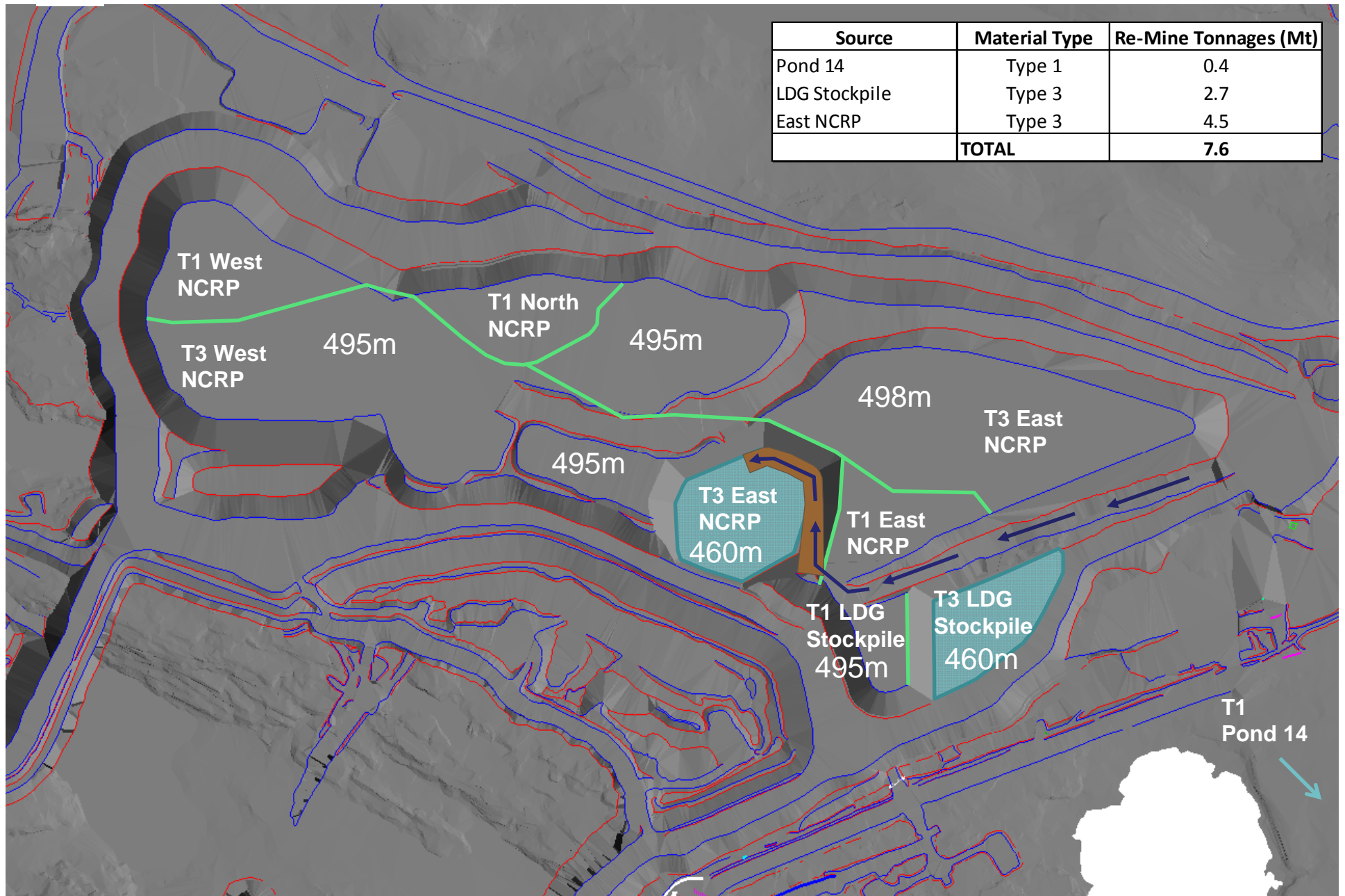
	Type I
PKC Dam Raise 9470	1.8
Crusher Feed	0.9
UG CRF	0
Total	2.7

- Operations Type I requirements supplied by UG (2.3Mt) and Pond 14 (0.4Mt)
- **Underground fill will be Type III CFR**
- Type I Re-mining commences July 2012 with completion of open-pit mining
- Three Phases of Closure Re-Mining – 8 Mt in each phase

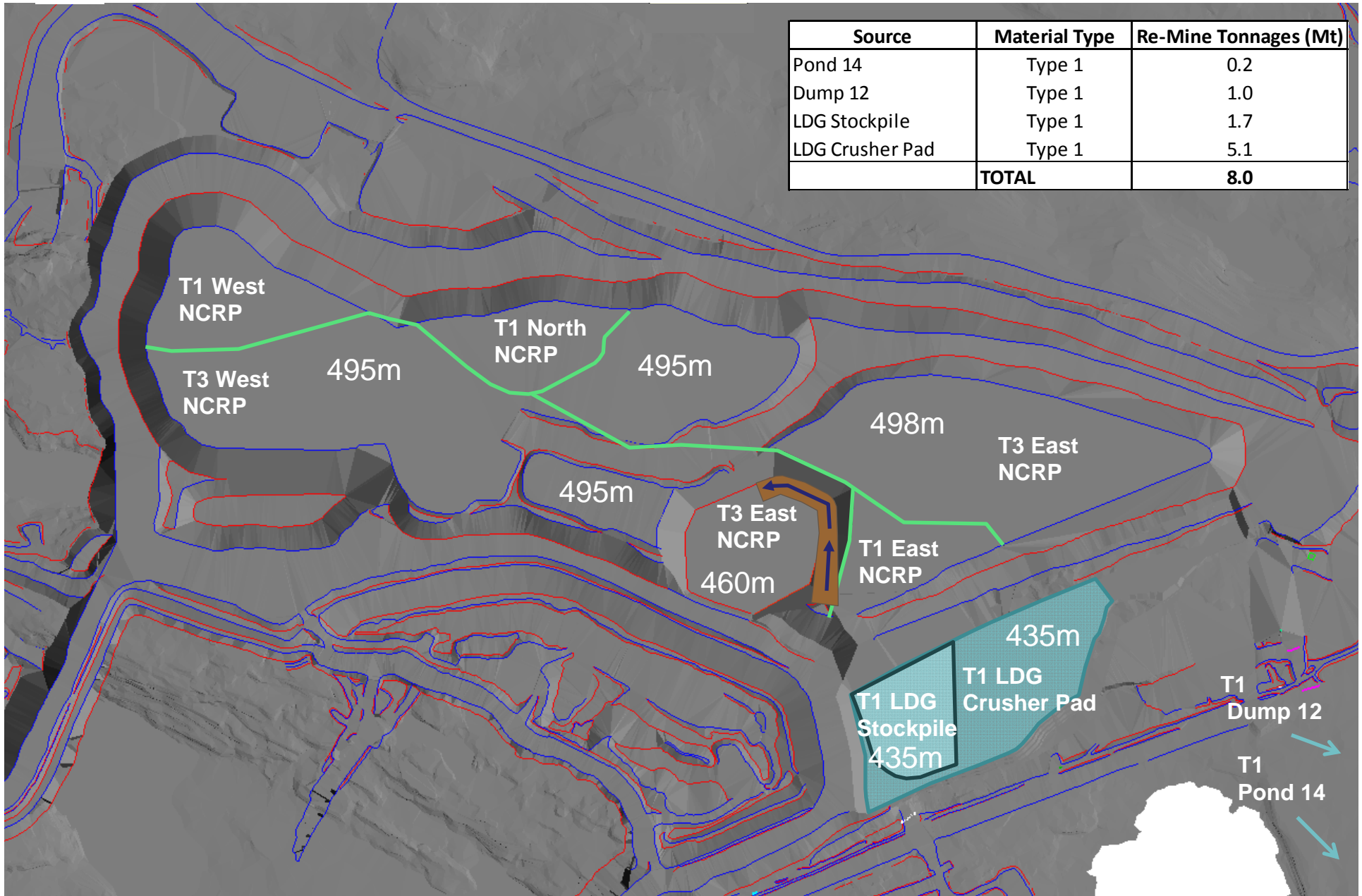
North Country Rock Pile (NCRP) – July 31, 2012 before Re-mining Commences



# NCRP – Re-Mining Phase 1: During Open Pit and Underground Operation

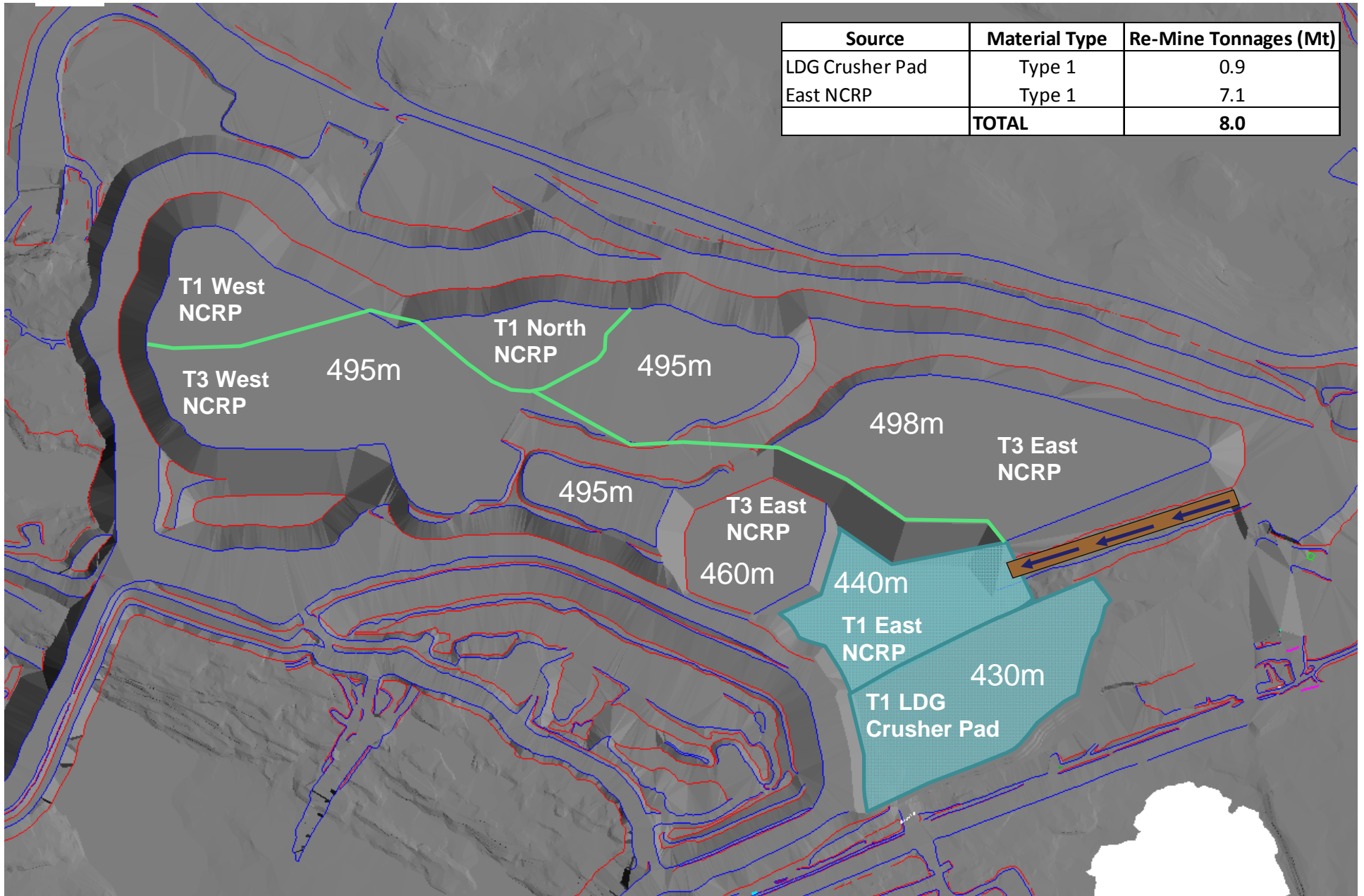


# NCRP – Re-Mining Phase 2 – For Closure

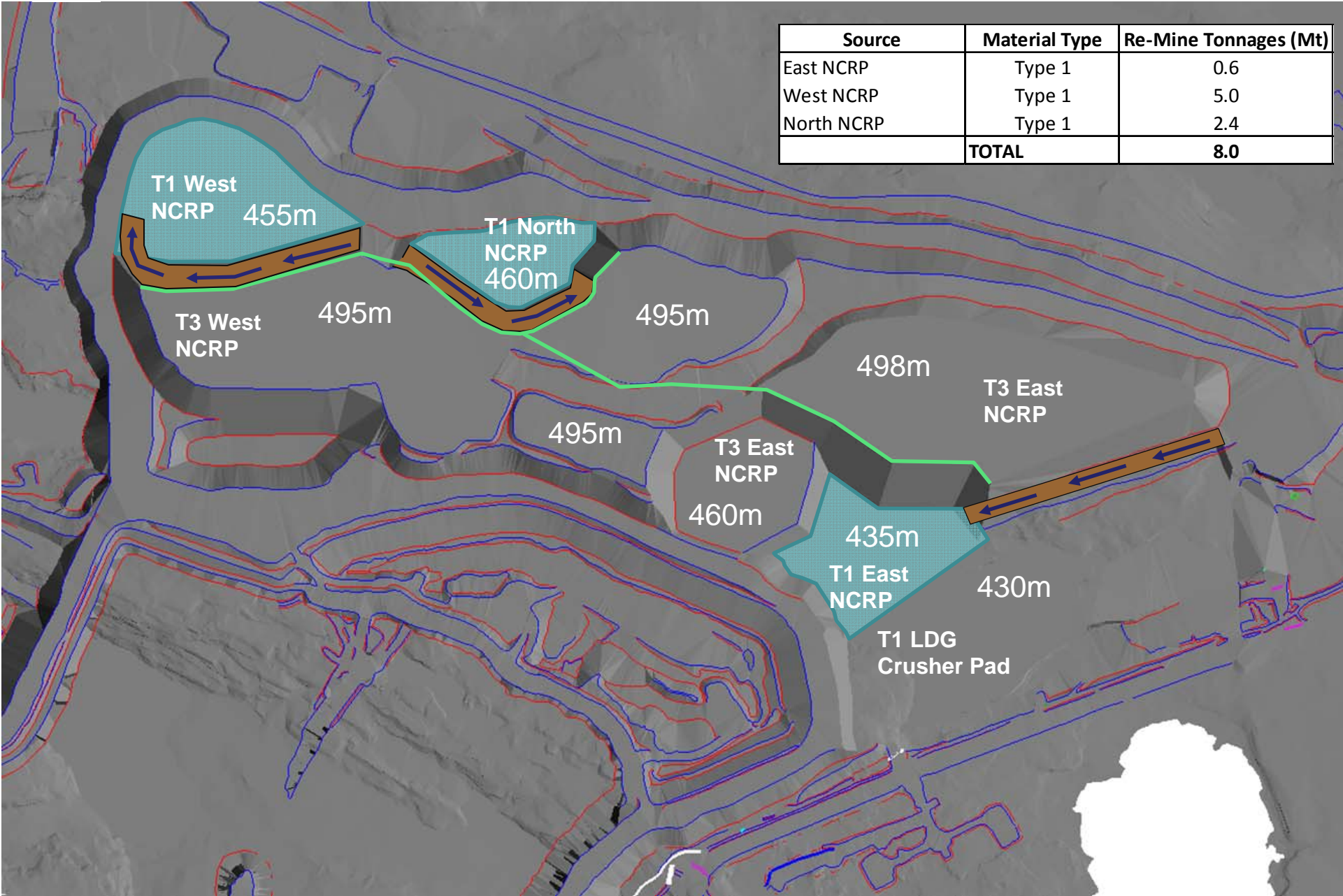


# NCRP – Re-Mining Phase 3: For Closure

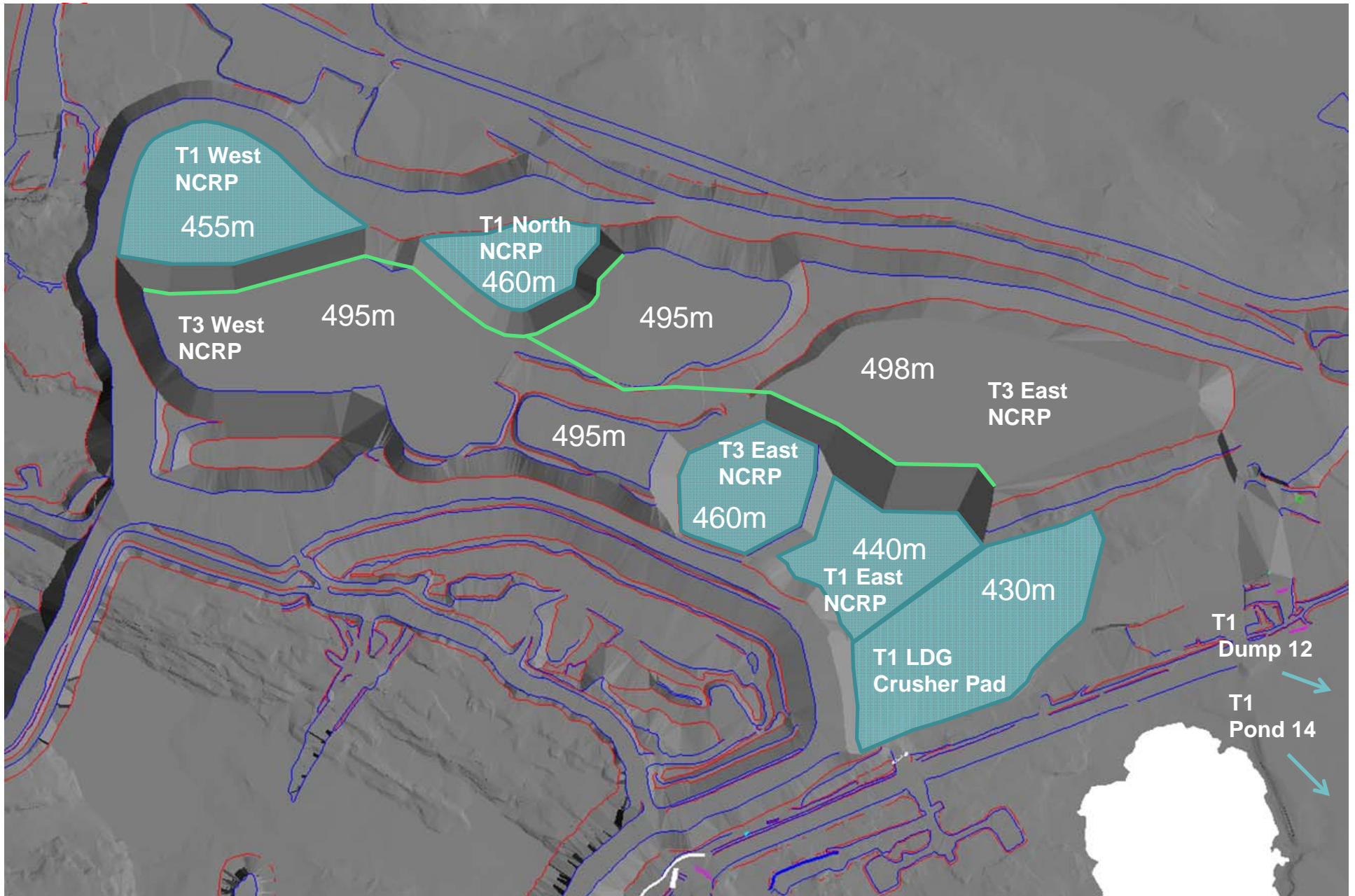
Source	Material Type	Re-Mine Tonnages (Mt)
LDG Crusher Pad	Type 1	0.9
East NCRP	Type 1	7.1
	<b>TOTAL</b>	<b>8.0</b>



# NCRP – Re-Mining Phase 4: For Closure



# NCRP – Completion of Re-Mining



# Re-Mining Summary

(all units Mt)

Re-Mining Area	Phase 2	Phase 3	Phase 4
Pond 14	0.2		
Dump 12	1.0		
LDG Stockpile - 435 m elevation	1.7		
LDG Crusher Pad - 435 m elevation	5.1		
		0.9	
East NCRP - 440 m elevation		7.1	
			0.6
West NCRP - 435 m elevation			5.0
West NCRP - 455 m elevation			2.4
North NCRP - 460 m elevation			
Total	8.0	8.0	8.0

# Type I Material Balance

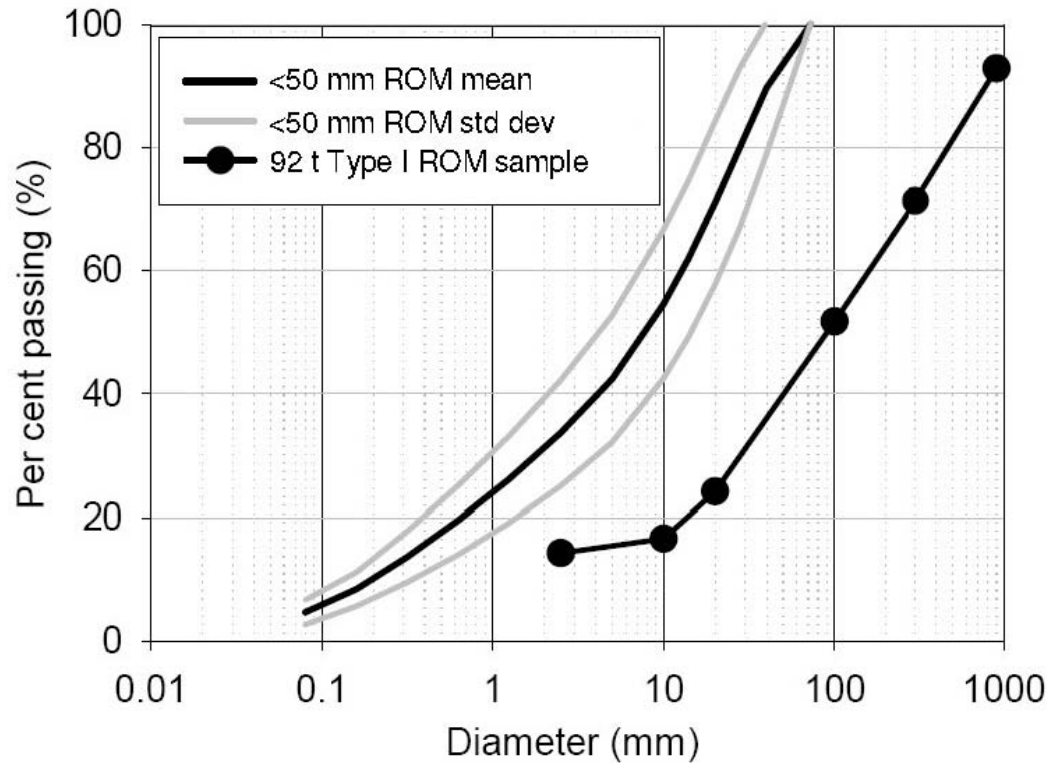
(all units Mt)

	Potential	Re-Mine	Remaining
<b>North Country Rock Pile</b>	<b>37.00</b>	<b>22.80</b>	<b>14.20</b>
Main Till Pile	0.00	0.00	0.00
Till Pile West of PKC Containment	0.00	0.00	0.00
<b>Dump 12</b>	<b>1.04</b>	<b>1.00</b>	<b>0.04</b>
Wet Well	0.16	0.00	0.16
ROM	2.49	0.00	2.49
Test Piles	0.39	0.00	0.39
A21 UG Portal Area	0.10	0.00	0.10
Waste Transfer Area	0.25	0.00	0.25
Airport Runway and Apron	1.85	0.00	1.85
Dump 7	1.32	0.00	1.32
N3 Laydown	0.46	0.00	0.46
Pit Access Road	0.15	0.00	0.15
<b>Pond 14</b>	<b>0.48</b>	<b>0.20</b>	<b>0.28</b>
UG Portal Area	0.67	0.00	0.67
South Haul Road	0.44	0.00	0.44
A21 Causeway	2.51	0.00	2.51
AN Storage/Emulsion Plant Road	0.38	0.00	0.38
Pond 2 Dam	1.27	0.00	1.27
<b>Total</b>	<b>50.9</b>	<b>24.0</b>	<b>26.9</b>

2. Identification of the size of the material (gauge) at each location. Identification of whether or not material of different size is mixed within each location.

# Material Size – Run-of-Mine

Large scale (92 t, <900mm) particle size distribution  
 Completed by SNC Lavalin/A&A Technical in 2001



NCRP, Pond 14 and Dump 12 are all ROM

3. Full details regarding the method and specific equipment required to access the material at each location. Rationale supporting the assumption that no blasting is required must be provided for each location.

# Re-mining Equipment and Method

Current DDMI plans assume:

- drill and blast may be required – keeping a 75X series drill on-site
- could require
  - re-mining benches drilled and blasted in 10 m benches
  - drill holes in equilateral pattern with 7m spacing
- L-1350 loader and EX1200 backhoe as re-mining tools – dozer to assist
- one 830E haul truck
- at the beginning of each 10 m bench, once enough material has been mined out, a dozer will build a ramp down at a 10% grade for equipment access

#### 4. Details regarding whether or not this material has been modified in size since its placement.

As described above, NCRP, Pond 14 and Dump 12 are all ROM Rock - i.e. not modified in size since placement

# Three Other Cost Areas

## 1. Consistency with No A21 Assumption

Rock Pile Name: \_\_\_\_\_ Rock Pile #: 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost
OBJECTIVE: STABILIZE SLOPES					
Flatten slopes with dozer, rock pile, north	m3	1501500	dsl	0.71	\$1,066,065.00
Flatten slopes with dozer, till pile	m3	479000	dsl	0.71	\$340,090.00
Flatten slopes with dozer, till pile, south	m3	234000	dsl	0.71	\$166,140.00
Toe buttress, drain mat'l	m3		#N/A	0	\$0.00
, fill mat'l A	m3		#N/A	0	\$0.00
, fill mat'l B	m3		#N/A	0	\$0.00
Other			#N/A	0	\$0.00
OBJECTIVE: COVER DUMP					
till on biotite schist	m3	1031000	#N/A	4.82	\$4,969,420.00
rock on mixed rock & biotite schist	m3	4290000	#N/A	3.96	\$16,988,400.00
till on caribou ramps	m3	6400	#N/A	4.82	\$30,848.00
rock cover from roads, etc.	m3	0	#N/A	5.65	\$0.00
rock cover from new quarry	m3	0			
rock cover on 2.5:1 slopes, incr. cost	m3		#N/A	0.15	\$0.00
till islands for reveg.	m3	93300	#N/A	4.82	\$449,706.00
till islands for reveg., south dump	m3	46650	#N/A	4.82	\$224,853.00

## 2. Consistency with ICRP 2001 Approval

Rock Pile Name: \_\_\_\_\_ Rock Pile #: 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost
OBJECTIVE: STABILIZE SLOPES					
Flatten slopes with dozer, rock pile, north	m3	1501500	dsl	0.71	\$1,066,065.00
Flatten slopes with dozer, till pile	m3	479000	dsl	0.71	\$340,090.00
Flatten slopes with dozer, till pile, south	m3	234000	dsl	0.71	\$166,140.00
Toe buttress, drain mat'l	m3		#N/A	0	\$0.00
, fill mat'l A	m3		#N/A	0	\$0.00
, fill mat'l B	m3		#N/A	0	\$0.00
Other			#N/A	0	\$0.00
OBJECTIVE: COVER DUMP					
till on biotite schist	m3	1031000	#N/A	4.82	\$4,969,420.00
rock on mixed rock & biotite schist	m3	4290000	#N/A	3.96	\$16,988,400.00
till on caribou ramps	m3	6400	#N/A	4.82	\$30,848.00
rock cover from roads, etc.	m3	0	#N/A	5.65	\$0.00
rock cover from new quarry	m3	0			
rock cover on 2.5:1 slopes, incr. cost	m3		#N/A	0.15	\$0.00
till islands for reveg.	m3	93300	#N/A	4.82	\$449,706.00
till islands for reveg., south dump	m3	46650	#N/A	4.82	\$224,853.00

### 3. Reasonable Assumptions

Mobilization Name: \_\_\_\_\_ Mob # 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost
MOBILIZE HEAVY EQUIPMENT					
Equipment to regional centre					
Excavators	km		#N/A	0	\$0
Dump trucks	km		#N/A	0	\$0
Dozers	km		#N/A	0	\$0
Demolition shears	km		#N/A	0	\$0
Equipment, regional centre to site					
Excavators - 2	km	4800	MHERH	8.42	\$40,416
Dump trucks - 15	km	120000	MHERH	8.42	\$1,010,400
Dozers - 4	km	16000	MHERH	8.42	\$134,720
Demolition shears - 2		9600	MHERH	8.42	\$80,832
Front end loader 2		4800	MHERH	8.42	\$40,416
cranes - 2		1600	MHERH	8.42	\$13,472
service vehicles -10		16000	MHERH	8.42	\$134,720
	km				
MOBILIZE CAMP					
	allowance	1	#N/A		\$150,000
MOBILIZE WORKERS					
rotations over reclamation period	m-hrs	26000	#N/A	45	\$1,170,000
MOBILIZE MISC. SUPPLIES					
Fuel	litre	7000000	#N/A	0.78	\$5,460,000

# Possible Outcome

COMPONENT TYPE	COMPONENT NAME		Revised INAC 2011	Original INAC 2011	
			TOTAL COST	TOTAL COST	
OPEN PIT	A514,A418		\$1,760,097.76	\$1,760,097.76	
UNDERGROUND MINE		0	\$1,381,493.06	\$1,381,493.06	
TAILINGS		0	\$32,367,308.84	\$53,806,469.58	(\$21,439,160.74)
ROCK PILE		0	\$23,106,813.00	\$30,993,905.96	(\$7,887,092.96)
BUILDINGS AND EQUIPMENT		0	\$16,527,875.98	\$16,078,169.98	\$449,706.00
CHEMICALS AND SOIL MANAGEMENT		0	\$2,123,417.00	\$2,123,417.00	
WATER MANAGEMENT		0	\$1,119,553.99	\$1,119,553.99	
POST-CLOSURE SITE MAINTENANCE			\$0.00	\$0.00	
<b>SUBTOTAL</b>			<b>\$78,386,560</b>	<b>\$107,263,107</b>	
			<b>Percentages</b>	<b>Percentages</b>	
MOBILIZATION/DEMOBILIZATION		0	\$4,872,540	\$10,332,540	(\$5,460,000.00)
MONITORING AND MAINTENANCE		0	\$16,845,117	\$16,845,117	
Market Factor Price Adjustment		0 %	\$0	\$0	
PROJECT MANAGEMENT		5 %	\$3,919,328	\$5,363,155	(\$1,443,827.38)
ENGINEERING		5 %	\$3,919,328	\$5,363,155	(\$1,443,827.38)
CONTINGENCY		20 %	\$15,677,312	\$21,452,621	(\$5,775,309.54)
<b>GRAND TOTAL - CAPITAL COSTS</b>			<b>\$123,620,184</b>	<b>\$166,619,696</b>	(\$42,999,512.01)

Water License component goes from \$137M to \$95M versus current \$184M

## Next Steps?

## **Appendix 6**

DDMI Response to Information Request October 13, 2011

Diavik Diamond Mines Inc.  
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Yellowknife, NT X1A 2P8  
Canada  
T (867) 669 6500  
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Mr. Robert Jenkins  
Manager  
Water Resources Division  
Aboriginal Affairs and Northern Development Canada  
Box 1500  
Yellowknife, NT X1A 2P8

Mr. Mark Cliffe-Philips  
Executive Director  
Wek'èezhii Land and Water Board  
Box 32  
Wekweeti, NT X0E 1W0

October 13, 2011

**Re: Clarification Information – Closure Cost Estimate**

Diavik Diamond Mines Inc. (DDMI) is responding to informal inquiries from Aboriginal Affairs and Northern Development Canada (AANDC) and their consultant Brodie Consulting Ltd. (BCL) for information that might help clarify issues raised at a September 16, 2011 meeting. This information is being provided to assist AANDC/BCL in completing an updated closure cost estimate, based on the Interim Closure and Reclamation Plan – Version 3.2, for the Wek'èezhii Land and Water Board (WLWB).

Type I Material

BCL had previously taken the assumption that the North Country Rock Pile (NCRP) is a blend of Type II and Type III rock.

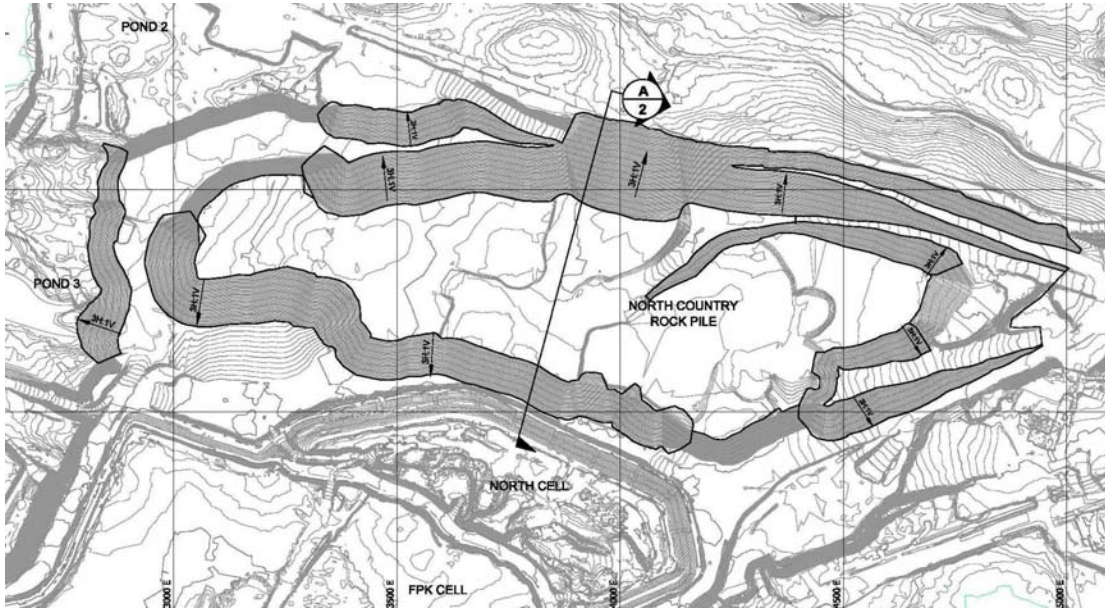
*“Based upon DDMI’s figure of the NCRP (extracted from Dec 2010 Powerpoint presentation shown below as Fig 1), essentially all of the perimeter of the pile is composed of Type 2/3 rock. Without clarification from DDMI, it must be assumed that all of the interior of the pile is the same blend of rock types.” (BCL April 15, 2011)*

Figure 1, that is referenced above, is provided below. For context the Figure was presented by DDMI as a “Conceptual Plan: Rock pile closure” in initial discussions with AANDC/BCL November 9, 2010.

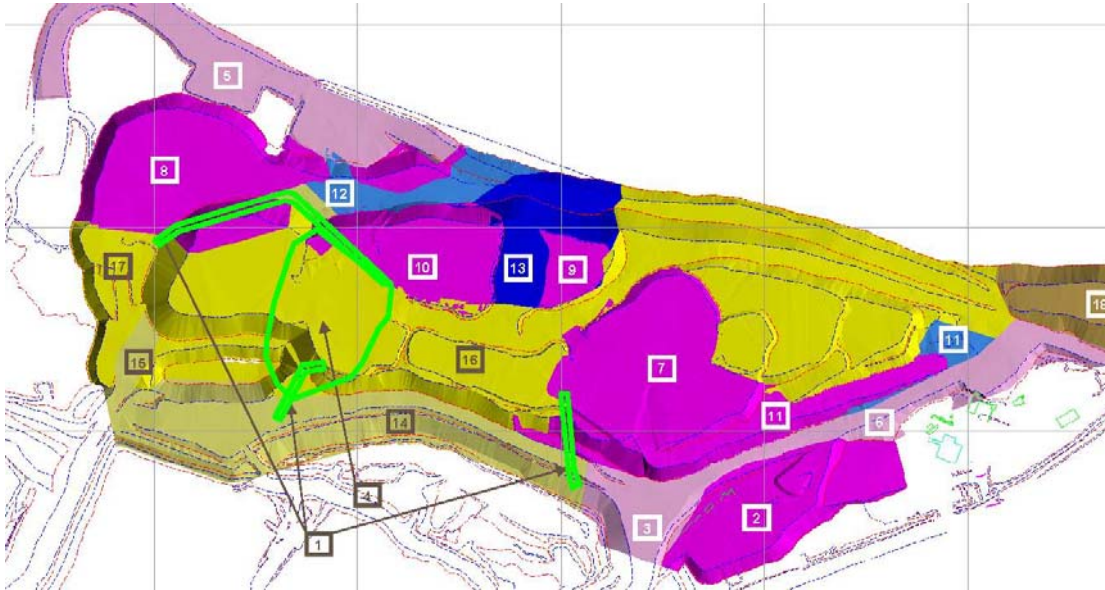
Figure 1 shows areas of the NCRP where re-sloping was proposed, based on the previous ICRP V3.0 DDMI preferred design, for “Exposed type 2 & type 3 slopes”. This design was subsequently not approved by the WLWB.

Figure 2 shows the as-built configuration for the NCRP to July 31, 2010 and delineates areas by waste rock type. The area labeled “10” in Figure 2 is Type I rock, however in Figure 1 this area is shown as being re-sloped. DDMI apologizes for this confusion and **requests that Figure 2 be used by BCL to delineate the locations of Type I within the NCRP** instead of the assumption that it is all a Type II/III blend based on Figure 1.

**Figure 1.** Conceptual Preferred Plan (ICRP V3.0): Rock pile closure – DDMI Presentation to AANDC November 9, 2010.



**Figure 2.** As-built configuration for North Country Rock Pile to July 30, 2010. Type I rock is pink, Type II rock is blue and Type III rock is yellow.



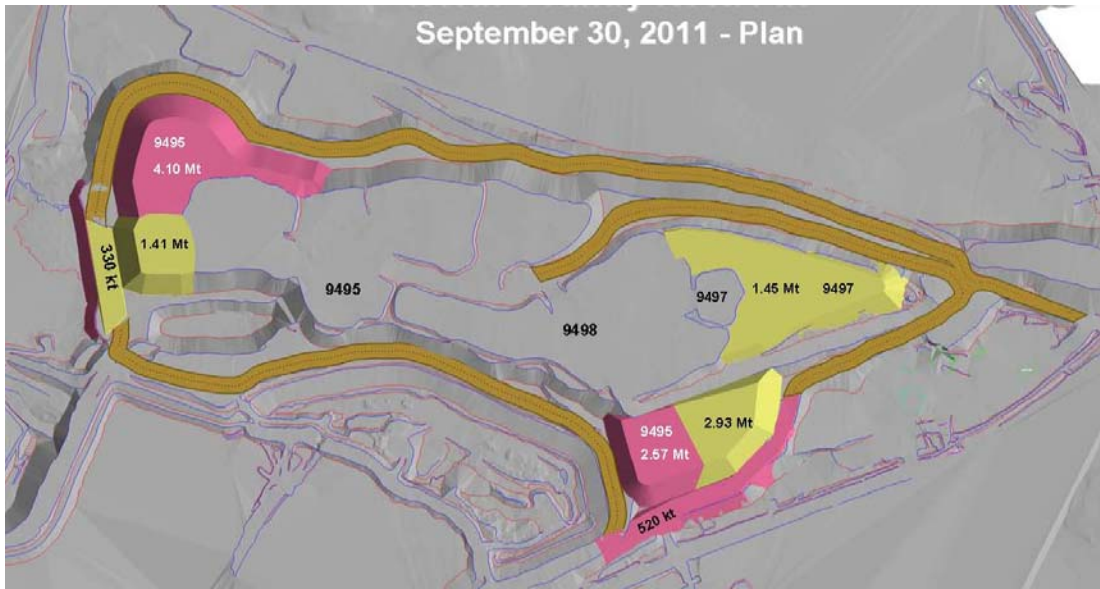
The Type I areas shown in pink in Figure 2 contain a total of 37 Mt (18 Mm<sup>3</sup>) of Type I rock to July 31, 2010. The volumes and tonnages of Type I rock by area are shown in Table 1.

**Table 1.** Volumes and tonnages of Type I rock by area for the North Country Rock Pile. Area numbers correspond to labels in Figure 2. Volumes and tonnages are to July 31, 2010 (units are cubic meters and tonnes).

			Volume	Tonnage
1	T1	EARLY_POND_DAMS	112,000	228,480
2	T1	LDG_CRUSHER_PAD	2,041,000	4,163,640
3	T1	PKC_EAST_DAM (partial)	1,164,000	2,374,560
4	T1	POND_3_T1_PAD	576,000	1,175,040
5	T1	RING_ROAD_OLD	551,000	1,124,040
6	T1	NORTH_HAUL_ROAD	2,188,000	4,463,520
7	T1	TYPE_1_DUMP	5,538,000	11,297,520
8	T1	TYPE_1_LOWER_DUMP_WEST	3,103,000	6,330,120
9	T1	TYPE_1_UPPER_DUMP_WAST_CAP	71,000	144,840
10	T1	TYPE_1_UPPER_DUMP_WEST	1,987,000	4,053,480
11	T1	TYPE_1_CRUSHER_RAMP	785,000	1,601,400
			<b>18,116,000</b>	<b>36,956,640</b>

Additional waste rock mined after July 31, 2010 was to be placed according to the plan shown in Figure 3. This shows the planned addition of 4.1 Mt of Type I rock in the northwest of the NCRP and 2.57 Mt of Type I in the southeast. An updated as-built configuration, equivalent to Figure 2 is not yet available.

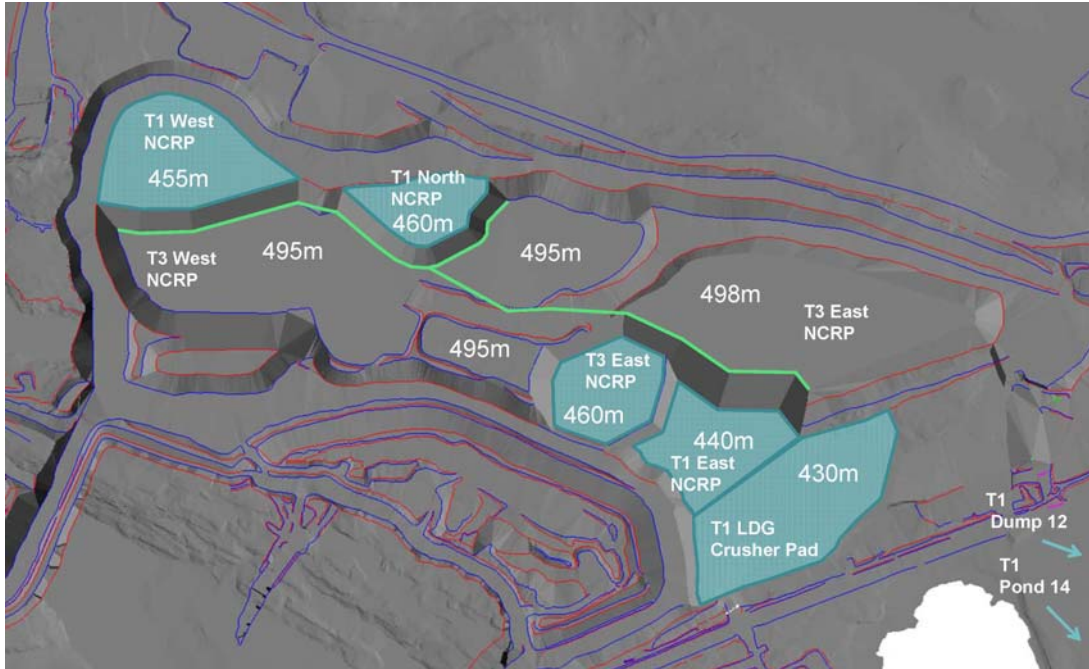
**Figure 3.** Planned locations for Type I (red) and Type III (yellow) waste rock after July 31, 2010.



This confusion around area 10 (Figure 2) was identified as an area of concern in discussions with AANDC and BCL on Sept 16, 2011. The concern was raised with regard to the presentation of a re-mining plan for the NCRP made by DDMI to WLWB, AANDC and BCL on June 29, 2011. Figure 4 shows the areas in the NCRP suggested by DDMI that could be targeted for Type I re-mining.

The specific concern raised by BCL was the rock type that exists in the area in Figure 4 titled "T1 North NCRP 460m". This is the same as the area labeled "10" in Figure 2 and is Type I rock. Table 1 shows that there were 4 Mt of rock in area "10" at July 31, 2010. The re-mine plan for the "T1 North NCRP 460m" shows extraction of 2.4 Mt of the 4 Mt available in this area. It shows mining of only the upper level to the 460m level.

**Figure 4.** Conceptual Re-Mine Plan to demonstrate how Type I rock can be extracted from the NCRP for use in mine closure. (From WLWB-AANDC-BCL Meeting June 29, 2011).



QA Type I Dumping

At the September 16, 2011 meeting with AANDC and BCL, BCL questioned the purity of the Type I rock in the NCRP. DDMI reviewed records from January 2007 to August 2011 and found an average error rate of 0.54%. This is the percentage of Type III rock that has been recorded as having been placed in a Type I area. This error could be a) Type III rock mistakenly placed in a Type I area, b) Type III rock incorrectly recorded as being placed in a Type I area, or 3) Transcription error in compiling records.

To put this average error rate in context Type I rock has a typical sulphur content of around 0.01% S and Type III has a typical sulphur content of around 0.05% S. The average sulphur content of the waste rock has been determined to be a best predictor of seepage/runoff water quality. Even if all of the 0.54% error was actually Type III rock placed in a Type I area, this would not cause a measureable change in the sulphur content and would certainly not be cause to exclude the use of this rock for closure purposes.

Re-Mining Design Parameters

Also at the September 16, 2011 meeting, BCL asked about some specific design parameters used for the re-mining. DDMI would like to provide the following information:

1. All the re-mine areas are sloped at 37 degrees which is the angle of repose for granite. These are the same slopes seen currently at the NCRP.
2. Access ramps were designed at 10% grade. This is the same grade as the permanent haul ramps in both A154 and A418 pit. The ramp widths are 37m which is the width required for double lane 830E traffic.

I trust these clarifications adequately address your questions and that this information will be fully considered in finalizing the AANDC/BCL closure cost estimate for October 24, 2011.

Regards,

A handwritten signature in black ink, appearing to read 'Gord Macdonald', with a horizontal line underneath.

Gord Macdonald

References:

BCL 2011. Brodie Consulting Ltd Memorandum to Nathan Richea and Robert Jenkins (INAC). Subject: Diavik Mine – Commentary on ICRP & Closure Cost Implications. April 15, 2011.