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September 11, 2024

Mr. William Groom, Project Manager  
Division Mining, Land and Water  
Department of Natural Resources  
3700 Airport Way  
Fairbanks, AK 99709-4699

**Reference: Proposed F20219958RPA Amendment for Financial Assurance Reduction**

Dear Mr. Groom,

Teck Alaska Inc. Red Dog Operations (RDO) is requesting an amendment to the Reclamation Plan Approval (RPA) # F20219958RPA for a net reduction in the Financial Assurance (FA) bond for construction and reclamation work completed on the Main Waste Dump (MWD) (decrease to bond) in conjunction with an annual Consumer Price Index (CPI) adjustment to the balance of the bond (increase to bond).

**History and Project Area**

The project area involves the portion of the Main Waste Dump area (green hatch) depicted in Figure 1. The green hatch area represents the area on the MWD in where geosynthetic composites have been placed and cover rock placed atop per the approved design plan.

Liner and cover rock placement work has been ongoing since the first pilot (2017) test, once proven, subsequently followed with a proposed closure design request to utilize a geosynthetic composite layer in place of the engineered compacted soil cover. The RPA No. F201699558.03 authorized this change on February 14, 2020.

The RPA was renewed (5-year) in September 2021 and the FA utilized the Standardized Reclamation Cost Estimator (SRCE) to develop the current cost estimate for the RPA No. F202199558RPA.

**Financial Assurance Reduction Estimate**

The FA at the time of the 2021 renewal was calculated using the SRCE model, the FA amount at the time of renewal was \$585,662,000, the FA has since increased to \$660,451,050 based on two annual Alaska CPI adjustments for the 2022 and 2023 years. The 2024 CPI adjustment will be applied after the construction / reclamation reduction costs have been applied to the current FA which is \$660,451,050.

The SRCE model used for the data for the reduction inputs is the same submitted with the 2021 RPA renewal *Red\_Dog\_SRCE\_V7\_329100.070\_20210125.xlsm* and using the same cost date file *Alaska\_2020\_SRCE\_2.0\_CostDataFile\_20200524.xlsm* no changes have been made to the model as submitted. No input changes were made to the SRCE V7 model, any changes to the current model are proposed to be incorporated during the 2026 renewal as it is expected a more thorough review of the model inputs will be needed.

The RDO Bond Release Request Workbook (attached) was created to incorporate the CPI adjustments and provide a simple spreadsheet to calculate the reduction based on the various cost components; liner construction/earthwork cost, CPI adjustment and incorporating indirect costs. Comments have been inserted into applicable cells which denote how or where the values came from and additional explanations provided in the headings below.

#### Project Area

The project area denotes the area in which geosynthetic liner, associated drainage piping and cover rock has been applied per the approved design. Figure 1 depicts the completed project area as a green hatch, this area represents the 95 acres completed as of September 6, 2024.

#### Liner Placement Cost

Liner placement costs were obtained from the SRCE V7 model under the User 1 WRD Line tab, cell G54. These costs represent both the material and placement costs.

#### Earthwork Cost

Earthwork in the SRCE model consisted of cover material placement and no grading costs. The costs were pulled from the SRCE V7 model under the Waste Rock Dump tab. The Facility ID code *MWD* was utilized as this represented the entire Main Waste Dump footprint. The acreage depicted in cell Q33, 167.78 acres, and the Cover 1 and Cover 2 Placement costs from Y293 \$889,228 and Y351 \$917,537 respectively, were used to calculate a cost per acre by totaling both Cover 1 and 2 costs and dividing by the *MWD* total acres, calculation as follows;  
 $\$1,806,765 / 167.78 = \$10,769$  per acre.

Note: No vegetation, ripping, scarifying, ongoing maintenance / inspections or other costs associated with the area and associated with the SRCE model are included with this proposed reduction.

#### Indirect cost

Indirect costs were obtained from the SRCE V7 User 10 Summary tab. the indirect cost category items (admin, engineering, contingency, etc.) relating to direct costs in Reclamation period, D19, were applied to provide a percentage total increase of 43.10% applied to both the Liner and Earthwork. Also as shown in User 10, direct costs in the Reclamation period are undiscounted costs; and therefore, reduce the bond amount 1:1.

### CPI Adjustment

The total direct and indirect costs (in base year 2021) for the work performed were inflated by 14.10% to account for previous inflation adjustments from 2022-2023 and the current period adjustment 2024. After removing the work performed from the bond balance, the remaining balance was inflated by 1.7% for the current period. The inflation methodology for 2024 is consistent with the previous updates to average the Alaska CPI from the previous year 2<sup>nd</sup> half with the current year 1<sup>st</sup> half.

The CPI adjustment costs were totaled for the 2022, 2023 and the 2024 years and applied to the FA amount of \$653,960,219 which was calculated after having applied the anticipated FA of \$643,028,730 (workbook cell I25) after having subtracted the Liner and Earthwork costs from the 2023 FA amount, as shown in the attached workbook Table 1.

### **Amendment Summary**

This amendment request is incorporating both the 2024 CPI adjustment and reclamation work completed as of September 6 for the MWD, with both costs applied the current FA of \$660,451,050 is reduced to \$653,960,200

If you have any questions regarding my reasoning, inputs, calculations, etc. please feel free to contact myself at (907) 754-5138 or Peter Boyd, Closure Cost Specialist (Teck), at (778) 580-6356 or peter.boyd@teck.com.

Sincerely,



Frank Bendrick  
Environmental Coordinator, Red Dog Operations

cc: Tim Pilon, ADEC, Fairbanks  
Lance Miller, NANA  
Mike Gonzales, Red Dog Operations  
Les Yesnik, Red Dog Operations  
Robert Napier, Red Dog Operations  
Chloe Crossley, Red Dog Operations  
Tyler Oester, Red Dog Operations  
Steve Shaw, Teck  
James LeLievre, Teck  
Michelle, Wu, Teck  
Bjorn Weeks, Teck



Green shaded area indicates the 95 acres of cover material completed as of September 6, 2024.

Figure 1



CONSTRUCTION PHASES	
AREA	3D AREA (ACRES)
PHASE IB	32.0
PHASE II	30.7
PHASE II TOP DECK	10.7
PHASE II SLOPE	23.8
PHASE II DEFERRED	0.5
PHASE IV	24.4
PHASE V DEFERRED	11.1

NOTES

- EXISTING TOPOGRAPHY FROM OCTOBER 30, 2023 DRONE SURVEY PROVIDED BY TECK.
- BASIS FOR HORIZONTAL COORDINATES IS NAD83 ALASKA STATE PLANE COORDINATE SYSTEM ZONE 7 IN US FEET.
- BASIS FOR VERTICAL DATUM IS THE RED DOG MINE LOCAL DATUM IN US FEET.
- PIPES SHOWN IN COMPLETED AREAS HAVE BEEN INSTALLED.
- LOCATION OF OBJECTS IN AERIAL IMAGE ARE APPROXIMATE. AERIAL PHOTO FROM JUNE 2020 PROVIDED BY TECK.
- TEMPORARY TERMINATIONS BETWEEN PHASES SHALL FOLLOW DETAIL 6 ON DRAWING 1001-CE-0003.

No.	Revision Description	Revised By	Checked By	Approved By	No.	Dwg. No.	Reference Drawings
8	UPDATED DESIGN SUBMITTAL	EM	2/14/2024	JG	2/14/2024	JG	2/14/2024
7	UPDATED DESIGN SUBMITTAL	EM	6/15/2023	JG	6/15/2023	JG	6/15/2023
6	UPDATED DESIGN SUBMITTAL	EM	7/13/2022	JG	7/13/2022	JG	7/13/2022
5	UPDATED DESIGN SUBMITTAL	EM	3/9/2022	JG	3/9/2022	JG	3/9/2022
4	UPDATED DESIGN SUBMITTAL	EM	9/20/2021	JG	9/20/2021	JG	9/20/2021
3	FINAL DESIGN SUBMITTAL	MC	12/22/2020	GC	12/22/2020	JG	12/22/2020
2	UPDATED DESIGN SUBMITTAL	MC	9/2/2020	GC	9/2/2020	JG	9/2/2020
1	UPDATED DESIGN SUBMITTAL	MC	12/11/19	GC	12/11/19	JG	12/11/19
0	ORIGINAL DESIGN SUBMITTAL	MC	12/29/17	GC	12/29/17	JG	12/29/17



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Project #: MWO 50010  
Scale: AS SHOWN

Red Dog Operations

Title: CONSTRUCTION PHASING  
MAIN WASTE STOCKPILE  
RED DOG MINE

Dwg Size: D Drawing #: 1001-GA-0001 Rev: 8