APPENDIX A

Financial Assurance

- Update to Financial Assurance Information for the Environmental Impact Statement, December 1, 2017
- Financial Assurance Information for the Environmental Impact Statement, March 12, 2015

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Technical Memorandum

Date: December 12, 2017

To: Bill Craig, AECOM

From: Sasha Forland, AECOM

Subject: Update to Financial Assurance Information for the Environmental Impact Statement

The purpose of this memo is to provide updated financial assurance information for the Donlin Gold project (Project) for use in the Final Environmental Impact Statement (EIS) under preparation by the United States Army Corps of Engineers (USACE). This memo updates the preliminary financial assurance cost estimate information in the May 2015 Donlin Gold memorandum (Donlin Gold 2015) based on the recently updated Reclamation and Closure Plan (SRK 2017c). Specifically, this memorandum provides the revised estimated cost for physical closure and reclamation for the Life of Mine Closure (LOM) as well as a premature closure scenario, based on a request from cooperating agencies.

The preliminary closure cost estimate for the natural gas pipeline has not changed from Donlin Gold (2015). Donlin Gold (2015) also contains useful information on regulatory requirements and the overall development and approval of the financial assurance.

Updated Mine Financial Assurance Information

Additional details on the reclamation cost estimates developed for both the LOM and for a seven year premature closure scenario can be found in Appendix B of SRK (2017c). As stated in Donlin Gold 2015, development of the financial assurance cost estimates occurs in an iterative process as plans evolve and become more concrete through project permitting. The exact costs cannot be determined until detailed engineering designs are available. These draft estimates have been provided for the proposed action based on information available at this time. The final amount of financial assurance will be determined after the Final EIS is complete and the state agencies issue their final decisions. At that time there will be certainty regarding the selected alternative, mitigation that will be required, and any other stipulations required of the agencies. Any of these could impact the final cost estimate. The estimates will also be updated to reflect current unit costs applicable at that time, and annually thereafter. The following revised estimated costs for LOM and premature closure of the mine are taken from SRK (2017c).

Life of Mine Closure

The cost for physical closure and reclamation of the site for the LOM closure is estimated at $308 million over five years. Following this five year period, ongoing site monitoring and water pumping would occur for approximately 45 years before the commencement of water treatment and discharge from the pit lake. The requirement to treat and discharge water is predicted to continue indefinitely. Annual costs prior to pit water treatment average around $1.2 million; while annual costs once water treatment commences approximately 45 years after final reclamation average around $3.6 million, excluding the replacement costs for the WTP.

Premature Closure - End of Year 3 of Operations

The cost for physical closure and reclamation of the site for the seven year premature closure is estimated at $237 million over five years including the cost of treating the TSF water. Annual post-closure costs for site monitoring, maintenance, and water treatment average $3.7 million, excluding the initial construction and periodic replacement costs for the WTP.

References:

Donlin Gold. 2015. Memorandum: Donlin Gold Project, Financial Assurance Information for the Environmental Impact Statement. Robert (Nick) Enos, Donlin Gold, to Keith Gordon, USACE. March 12, 2015. 8 pp.

SRK. 2017c. Plan of Operations, Reclamation and Closure Plan, Donlin Gold Project. Prepared for Donlin Gold. July 2017.

Memorandum

TO:	Keith Gordon, Project Manager, USACE
FROM:	Robert (Nick) Enos, Permitting Manager
CC:	Stan Foo, General Manager
	Taylor Brelsford, AECOM
	Bill Craig, AECOM
SUBJECT:	Donlin Gold Project
	Financial Assurance Information for the Environmental Impact Statement
DATE:	March 12, 2015

The purpose of this memo is to provide current financial assurance information for the Donlin Gold Project (Project) for use in the Environmental Impact Statement (EIS) under preparation by the United States Army Corps of Engineers (USACE). The term "financial assurance" in this context refers to the costs that government agencies would incur to complete reclamation and closure according to plans approved by the agencies in the event of the absence of the project operator. This memo describes the financial assurance requirements for the Project related to waste management and reclamation and closure costs and provides the current estimate of the financial assurance costs. This information will be refined as the EIS is finalized and as the agencies responsible for approving the financial assurance amount review the costs and make their final permit and approval decisions.

1. REGULATORY REQUIREMENTS FOR FINANCIAL ASSURANCE

This section describes the statutory and regulatory requirements for financial assurance for the Project. Section 1.1 describes requirements for financial assurance related to the mine site (including mine site, roads, airstrip, and port) and Section 1.2 describes requirements for the natural gas pipeline. The State of Alaska will require financial assurance for implementation of reclamation and closure activities, including long-term post closure management requirements, and for management of wastes to prevent water pollution. The Bureau of Land Management (BLM) will require financial assurance for reclamation of the portion of the natural gas pipeline that is on land managed by BLM.

1.1 Mine Site Financial Assurance Requirements (State of Alaska)

There are three State of Alaska permits/approvals for the Project that will require establishment of financial assurance: approval of the Project Reclamation Plan by the Alaska Department of Natural Resources (ADNR); issuance of the Project Integrated Waste Management Permit (IWMP) by the Alaska Department of Environmental Conservation (ADEC) and issuance of the Certificates of Approval to Construct the Project dams issued by ADNR.

Reclamation Plan

State regulations at 11 AAC 97 require that a Reclamation Plan be developed for the Project. Reclamation needs to meet certain performance standards described in the regulations, including:

- Reclamation of the area so any surface that will not have a stream flowing over it is left in a stable condition to ensure: (1) return of soil erosion to pre-mining levels and revegetation (2) segregation and preservation of topsoil removed from mining for reuse; (3) promotion of natural revegetation;
- Reclamation such that surface contours are conducive to natural revegetation or are consistent with alternate post-mining land use;
- Pit wall reclamation is not required, however the wall must be left in a stable and safe condition;
- Re-establishment of any stream channel that was diverted and is no longer stable, to a stable location;
- Reclaim mined areas that have the potential to generate acid rock drainage (ARD) in a manner that prevents the generation of ARD or prevents the offsite discharge of ARD; and
- A mining operation shall be conducted in a manner that prevents unnecessary and undue degradation of land and water resources, and the mining operation shall be reclaimed as contemporaneously as practicable with the mining operation to leave the site in a stable condition.

The Reclamation Plan must include a description of reclamation measures for tailings impoundments, settling ponds, reservoirs, open pits, overburden piles, waste rock storage areas, stream replacement, access roads and other facilities associated with the mine operation. The Plan must include a schedule for reclamation activities.

Financial assurance must be established to cover the cost of implementing the Reclamation Plan. A mining operation cannot commence until the Reclamation Plan and financial assurance are approved by ADNR. Reclamation plans are approved for a period not to exceed ten years, although plans may be amended more frequently due to changing conditions or regulatory requirements. The financial assurance is released after it is certified that the reclamation responsibilities have been completed.

Integrated Waste Management Permit (IWMP)

An Integrated Waste Management Permit (IWMP) will be required for the Project pursuant to AS 46.03.100 and 18 AAC 60. The IWMP will include requirements for management of waste rock, tailings, and solid wastes in order to ensure protection of air, groundwater, and surface waters during operations and closure. The IWMP also covers management of wastewater and seepage associated with these facilities, including long-term post-closure water treatment when needed. The IWMP will require that management and monitoring plans be prepared to demonstrate how the Applicant will meet IWMP conditions.

The governing statute requires financial assurance be provided “to manage and close the facility in a manner that the department finds will control or minimize the risk” of water pollution (AS 46.03.100(f)). The waste management regulations require that proof of financial responsibly be established to cover the costs of closure and monitoring (18 AAC 60.265). A mining operation cannot begin until the IWMP is issued and financial assurance is established. Alaska administrative procedures require that the IWMP be reviewed, and revised as needed, at a minimum of every five years.

The IWMP requirements apply from construction, through operations, reclamation, and closure. Therefore, there is some overlap between the Reclamation Plan requirements and the IWMP requirements. The financial assurances required for reclamation can also satisfy the IWMP requirements as long as they meet the requirements set out in statute (AS 46.03.100(f)).

Certificates of Approval to Construct Dams

The Alaska Dam Safety regulations require financial assurance be established for the costs of dam closure and post-closure activities. Specifically, financial assurance must be adequate to:

- Pay for costs of safely breaching the dam at the end of the dam's service life and restoring the stream channel and reservoir land to natural conditions, or for the costs of performing reclamation and post-closure monitoring and maintenance (11 AAC 93.171(f)(2)(C)).

The Dam Safety regulations require that applicants obtain approval of the method of demonstrating or providing financial assurance after submitting the preliminary design package and before submitting the final construction package (11 AAC 93.171(d)). After ADNR reviews and approves the type of financial assurance, then the final construction package must include a certified cost estimate and posting of approved financial assurance (11 AAC 93.171(f)(4)(F)).

Financial Assurance Instruments

The mechanism (instruments) for financial assurance acceptable to the State agencies must be established prior to final State approvals and permits. Requirements for reclamation financial assurance are found in 11 AAC 97.400. Bonds may be in the form of corporate surety or a personal bond accompanied by a letter of credit, certificate of deposit, or a deposit of cash. Acceptable forms of financial assurance for an IWMP include self-insurance, insurance, surety bond, letter of credit, certificate of deposit, or other guarantee approved by the ADEC (AS 46.03.100(f)). The statute also allows for the use of corporate guarantees, but only after the state adopts regulations establishing financial tests, which ADEC has not done. Dam safety regulations allow flexibility regarding the type of financial assurance ("must provide a performance bond or other financial assurances adequate to provide sufficient money…" 11 AAC 93.171(f)(2)(C)).

In practice, financial assurance for reclamation, waste and water management (IWMP), and dam closure for large mine projects have been combined into a single financial assurance (see more on the coordinated State process, below) and are typically guaranteed through letters of credit and sureties (ADNR 2014).

State of Alaska statutes also provide for the establishment of trust funds to cover reclamation and associated costs. Trust funds could be used by the state for: reclamation: dam maintenance; monitoring, control and treatment of water and other leachates; protection of surface and groundwater; and long-term site maintenance (see AS 37.14.820). The State has not developed regulations or guidance on how to implement the trust fund statutory language. However, that does not prevent the establishment and use of a trust fund, which may be particularly well-suited for long-term, post-closure costs.

Coordinated State Process

ADNR and ADEC coordinate the process for reviewing and approving the Reclamation and Closure Plan, issuing the IWMP, and issuing Certificates of Approval to Construct dams. Review and approval of required financial assurance is done as part of that coordinated state review process.

Development of the financial assurance cost estimate is an iterative process that occurs during Project review and permitting. Initial drafts of the Reclamation and Closure Plan, IWMP, and dam preliminary design packages may include draft cost estimates. Historically ADNR and ADEC have completed preliminary reviews of cost estimates to determine if the costs are representative of costs incurred with similar projects. At the draft Plan stage, a range of cost estimates has been sufficient to allow ADEC to move forward with development of a draft IWMP concurrent with or following issuance of a draft EIS. Therefore, at the draft EIS stage it is possible to have a range of preliminary cost estimates available for the proposed action.

The estimated financial assurance amount associated with the IWMP will be subject to a public review period during the public review of the IWMP. During the review period, any person who disagrees with the decision may request an adjudicatory hearing in accordance with 18 AAC 15.195- 18 AAC 15.340 or an informal review by the ADEC Division Director in accordance with 18 AAC 15.185.

The State is not required to offer a public comment period on the Reclamation and Closure Plan and Dam Certificates and associated financial assurance. However, ADNR generally public notices Reclamation Plan approval during the IWMP review period. Reclamation Plan approval is subject to appeal in accordance with 11 AAC 02.

ADNR and ADEC generally wait to issue the final authorizations and permits until after the final EIS is issued since this provides clarity in the selected alternative and allows the State to incorporate applicable mitigation measures into its authorizations and approvals. At this point (after the Final EIS is issued), more accurate and complete reclamation and closure costs can be developed.

The final financial assurance amount will be based on the final approved Reclamation and Closure Plan, the final IWMP, and dam certificates of approval and may be different than the amount in the preliminary cost estimate depending upon changes that occur between the draft and final plans and permits.
State regulations allow for financial assurance amounts to be increased at any time if it is determined that the amounts are inadequate. In practice, the State reviews financial assurances as part of the IWMP renewal cycle which has a five-year term.

1.2 Pipeline Financial Assurance Requirements (State of Alaska and BLM)

The Project will require Right-of-Way authorizations from the BLM and ADNR for the natural gas pipeline. The State of Alaska Right-of-Way Leasing Act (A.S. 38.35) grants broad powers to the Commissioner of ADNR in granting leases and right-of-way leases on state land for pipeline construction, transmission, operation, and termination. Per A.S. 38.35.100(a)(3), the commissioner shall determine if the applicant has the technical and financial capability to protect and prevent degradation of items and activities listed in the statute,(i.e., (A) prevent any significant adverse environmental impact, including but not limited to erosion of the surface of the land and damage to fish and wildlife and their habitat: (B) undertake any necessary restoration or revegetation). The amount and form of financial assurance is established based on an iterative process, which is similar to the iterative process for pipeline leases on BLM-managed lands. Final financial assurance amounts are developed toward the end of the permitting process.

Donlin has requested Right-of-Way authorization and Temporary Use Permits (TUPs) for portions of the natural gas pipeline on BLM managed land. BLM regulations at 43 CFR 2885.11(b) allow the BLM to require that a holder of a right-of-way grant or temporary use permit furnish a bond, or other security satisfactory to secure all or any of the obligations imposed by the right-of-way grant and temporary use permits and applicable laws and regulations. The bond or other acceptable security would cover any losses, damages, or injury to human health, the environment, and property in connection with the use and occupancy of the right-of-way or TUP area. The bond must also cover liability for damages or injuries resulting from releases or discharges of hazardous materials. The bond or security amount may increase or decrease during the term of the authorization or permit, as required by BLM.

2. PRELIMINARY FINANCIAL ASSUARANCE COST ESTIMATE

This section describes the preliminary estimates of financial assurance costs for the Project. They have been developed by Donlin, but must be reviewed by the regulatory agencies and revised and updated as the permitting and review processes proceed. Section 2.1 describes the preliminary financial assurance estimates related to the mine site (including mine site, roads, airstrip, and port) and Section 2.2 describes estimates for the natural gas pipeline

2.1 Mine Preliminary Financial Assurance Estimate

Donlin has developed a draft Reclamation and Closure Plan (SRK 2012a.) and a draft Integrated Waste Management Plan (SRK 2012b.). As discussed above, these plans form the basis for estimating reclamation costs and long-term post closure management requirements, and determining the amounts of financial assurance that would be required by the State of Alaska.

Table 1 lists the major components of reclamation and closure in these documents that are included in the cost estimate.

Table 1: List of Reclamation and Closure Activities for the Donlin Gold Project

Project Component	Reclamation and Closure Activities
Waste Rock Facility (WRF)	- Re-contour to achieve less than or overall 3:1 and to promote natural drainage - Cover to minimize infiltration (1 foot of gravel plus 14-inches of growth medium) - Revegetate - Maintain drainage channels that route runoff and seepage to the open pit
Tailings Storage Facility (TSF)	- Dry cover to minimize infiltration (geomembrane, rockfill, colluvium, and growth medium) - Decant and seepage water pumped to open pit - Maintain lined pond and spillway to capture and route runoff from the cover - Flatten dam face slope to 1.7:1 and cover, monitor, and maintain dam
ACMA and Lewis Pit	- Stabilize highwalls as feasible - Construct spillway - Monitor water quality and levels (see water management)
Mine Support Facilities	- Remove buildings, materials and equipment not needed for reclamation. - Reclaim mine site roads (except those needed to access the WTP and monitoring locations).
Water Management	- Divert water from TSF and WRF to the pit - Treat pit lake discharge at the WTP (beginning approximately 50 years after closure and lasting into the future) and maintain APDES outfall to Crooked Creek
Airstrip	- Maintain airstrip for site access
Access Road	- Maintain access road
Jungjuk Port	- Remove sheet piling and partial reclamation of temporary storage areas at the port. A barge landing would remain for periodic delivery of WTP reagents, fuel, and supplies
Monitoring	- Various types of monitoring (environmental media, visual inspections, stability, etc.) to monitor progress of reclamation and closure and environmental protection per the Project Monitoring Plan.

A preliminary cost estimate for these activities was developed. According to State of Alaska requirements, the cost estimate is based on the State having to perform the reclamation and closure activities. Financial assurance estimates were developed separately for: (1) the cost of the physical reclamation tasks that can be completed soon after cessation of operations and; (2) the cost for long-term post closure activities.

Physical Reclamation and Closure Cost Estimate

Reclamation cost estimates were calculated using the Standardized Reclamation Cost Estimator (SRCE) Model. The SRCE Model was developed as a cooperative effort between the State of Nevada Division of Environmental Protection Bureau of Mining Regulation and Reclamation (NDEP), the BLM, and the Nevada Mining Association to facilitate accuracy, completeness and consistency in the calculation of costs for mine site reclamation. SRCE was initially developed, tested and approved for use by NDEP and BLM in 2006.

With almost continuous improvements to the SRCE model, the latest Model Version 1.4.1 Build 17 is approved for use in Nevada and available for download to the public. The SRCE Model is used globally in numerous jurisdictions and by major mining companies. Although the SRCE model has not been formally adopted by the State of Alaska, it has been accepted for use for all recent reclamation and closure cost estimates in Alaska, including Greens Creek, Fort Knox, and Red Dog. It is also used in Pre-Feasibility and Feasibility Studies and to comply with Asset Retirement Obligations.

Costs used to populate the SRCE model for the Donlin Project were based on the following information:

- Direct costs for reclamation activities in Table 1 using:
    - 2014 costs from current vendors doing business in Alaska
    - Alaska Davis Bacon Labor Rates
    - Material costs from the RS Means Heavy Construction Cost Data, Western Edition (2012)
    - Caterpillar Performance Handbook (2010)
    - NC Machinery Equipment Rental Rates
    - Construction Machinery, Inc. Equipment Rental Rates
    - Alaska Marine Lines – Tariff Rates
- Indirect costs, which are expressed as a percentage of direct costs and range from 8% to 40%.

Based on the SRCE model (using Alaska labor rates, transportation costs, equipment vendor rates, etc.), physical reclamation and closure costs were estimated at approximately $ 259 million dollars. Table 2 provides a summary of the cost estimate. This represents reclamation of the maximum disturbance footprint. Because this estimate will continue to be refined during Project permitting and review by the State of Alaska, the final cost estimate for physical reclamation and closure is subject to change. Financial assurance for the final amount would be established by Donlin in an instrument acceptable to the State of Alaska.

Table 2: Draft Financial Assurance Cost Estimate for Physical Reclamation and Closure

Component	Estimated Costs (based on SRCE model)[1]
Mobilization/Demobilization; Construction Management and Support; Closure Planning	$22,579,054
Earthworks/Recontouring and Revegetation/Stabilization (roads, open pit, WRF, TSF, foundation & building areas, well abandonment, drainage & sediment control)	$150,266,645
Detoxification, Water Treatment and Disposal of Wastes (treatment of mill washdown water, removal of hazardous materials, solid waste management)	$6,100,689
Structure, Equipment and Facility Removal (foundation & building areas, equipment, powerline, transformer)	$22,408,509
Monitoring (reclamation monitoring & maintenance, environmental monitoring)	$1,838,271
Subtotal Direct Operational & Maintenance Costs	$203,193,168
Indirect Costs (Engineering, design & construction plan, contingency, insurance, contractor profit and administration)	$55,805,975
Total	$258,999,143
Footnote 1: All costs are estimates pending advancement of permitting and review by State of Alaska.	

Long-Term Post-Closure Cost Estimate

Post-closure activities (pumping, water treatment, monitoring, site maintenance, etc.) would commence five years after the mine is closed when all of the physical reclamation is complete. Financial assurance for long-term closure costs would be established in a trust fund. Costs for long-term post closure activities were estimated out to 200 years after closure of the operation. The 200-year time period is sufficient to demonstrate that the post-closure trust fund can be self-sustaining in perpetuity, should long term water management be required post closure. To make the trust fund self-sustaining and able to cover annual post-closure costs, a total of approximately $73 million dollars is required to be in place at the time of mine closure. Post closure growth of the trust fund is calculated using targeted returns for the Alaska Permanent Fund, while annual cost inflation is calculated using a five year average of the Anchorage consumer price index (CPI).

In order to build the trust fund to $73 million dollars at closure, Donlin would make annual contributions of approximately $2.3 million per year into the trust fund during Project construction and operations. Because this estimate will continue to be refined during Project permitting, and review by the State of Alaska, the estimate of annual contributions is subject to change.

The State reviews financial assurances as part of the IWMP renewal cycle and requires updates of the Reclamation Plan. The review would include the trust fund cost estimates for the long-term obligations. During the review the annual payment would be adjusted based on any changes to the inflation rate, interest rates, estimated net rate of return, and any additional long-term closure items not previously included in the trust fund.

2.2 Pipeline Preliminary Financial Assurance Estimate

Closure of the natural gas pipeline would include: removal of all above ground pipeline segments and facilities; below ground pipeline would be abandoned in place; and, regrading and reclamation of disturbed surface areas. Details of pipeline closure are described in the Natural Gas Pipeline Plan of Development (SRK 2012c.). Donlin has estimated pipeline closure costs at approximately $10 million dollars. Final demolition, removal, and reclamation requirements and costs will be determined as the State Pipeline ROW lease and BLM Pipeline ROW Grant processes proceed.

3. CLOSING

As discussed above, development of the financial assurance cost estimates occurs in an iterative process as plans evolve and become more concrete through project permitting. The exact costs cannot be determined until detailed engineering designs are available and the State review and permitting process for the Project is further along. Draft estimates have been provided for the proposed action based on information available at this time. The final amount of financial assurance will be determined after the Final EIS is complete and the State agencies issue their final decisions. At that time there will be certainty regarding the selected alternative, mitigation that will be required, and any other stipulations required of the agencies. Any of these could impact the final cost estimate.

4. REFERENCES

ADNR 2014. Alaska Mine Permitting Process Financial Assurances, Presentation by Alaska Department of Natural Resources (ADNR), January 29, 2014.

SRK 2012a. Integrated Waste Management Plan, Donlin Gold Project, Alaska. SRK Consulting (U.S.), Inc., 2012.

SRK 2012b. Reclamation and Closure Plan, Donlin Gold Project, Alaska, SRK Consulting (U.S.), Inc., 2012.

SRK 2012c. Natural Gas Pipeline Plan of Development, Donlin Gold Project, SRK Consulting (U.S.), Inc. 2012.