

IN THE MATTER OF:

ROSS ADAMS MINE SITE
TONGASS
NATIONAL FOREST

NEWMONT USA LIMITED
DAWN MINING COMPANY, LLC

RESPONDENTS

Proceeding Under Sections 104, 106, 122(a)
and 122(d)(3) of the Comprehensive
Environmental Response, Compensation
and Liability Act as amended (42 U.S.C.
§§ 9604, 9606, 9622(a) and 9622(d)(3)).

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TABLE OF CONTENTS

I. INTRODUCTION AND STATEMENT OF OBJECTIVES	4
II. JURISDICTION	4
III. PARTIES BOUND.....	6
IV. DEFINITIONS	7
V. FINDINGS OF FACT	13
VI. CONCLUSIONS OF LAW	16
VII. ON-SCENE COORDINATOR/PROJECT COORDINATOR.....	17
VIII.WORK TO BE PERFORMED.....	20
IX. EMERGENCY RESPONSE AND NOTIFICATION.....	24
X. ADDITIONAL INVESTIGATION AND ANALYSIS	25
XI. APPROVAL OF PLANS AND OTHER SUBMISSIONS	26
XII. ADMINISTRATIVE RECORD.....	30
XIII.ACCESS	30
XIV. ACCESS TO INFORMATION	31
XV. OTHER APPLICABLE LAWS	32
XVI. RECORD PRESERVATION	33
XVII. DISPUTE RESOLUTION.....	35
XVIII. FORCE MAJEURE	37
XIX. REIMBURSEMENT OF COSTS.....	38
XX. STIPULATED PENALTIES.....	41
XXI. RESERVATION OF RIGHTS	43
XXII. COVENANTS NOT TO SUE	46
XXIII. INDEMNIFICATION	49
XXIV. CONTRIBUTION PROTECTION.....	50
XXV. OTHER CLAIMS	51
XXVI. NOTICE OF COMPLETION.....	51
XXVII. FINANCIAL ASSURANCE	52
XXVIII. ATTORNEY GENERAL APPROVAL	55

XXIX.	PUBLIC COMMENT.....	56
XXX.	EFFECTIVE DATE, MODIFICATION AND COMPUTATION OF DUE DATES.....	56
XXXI.	MISCELLANEOUS	57

I. INTRODUCTION AND STATEMENT OF OBJECTIVES

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into by the United States Department of Agriculture, Forest Service ("Forest Service"), and Newmont USA Limited. ("Newmont USA"), and Dawn Mining Company, LLC ("Dawn"), (hereafter, Newmont USA and Dawn are referred to as "Respondents"), for performance by Respondents of a non-time-critical removal action pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §§ 9604, 9606, 9607, and 9622, and 40 C.F.R. § 300.415 of the National Oil and Hazardous Substance Pollution Contingency Plan, 40 C.F.R. Part 300 ("NCP"), at the Ross Adams Mine Site (the "Site") as further defined in this Settlement Agreement.
2. The Site is located on lands under the jurisdiction, custody and control of the Forest Service within the established boundaries of the Tongass National Forest in Alaska. The Environmental Protection Agency and the Assistant Attorney General for the Environment and Natural Resources Division of the United States Department of Justice, or his or her designee, have concurred with this agreement, in accordance with the requirements of Executive Order 13016 and Section 4 of Executive Order 12580.

II. JURISDICTION

3. This Settlement Agreement is entered into under the authority vested in the President of the United States by Sections 104, 106, 107, 122(a), 122(d)(3), and

122(h)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (“CERCLA”), 42 U.S.C. §§ 9604, 9606, 9622(a), 9622(d)(3), and 9622(h)(1). The authority was delegated to the Secretary of the Department of Agriculture (the “Secretary”) by Executive Order 12580, 52 Fed. Reg. 2926 (January 23, 1987), 3 C.F.R., 1987 Compilation, p. 193, amended by Executive Order 13016, 61 Fed. Reg. 45871 (August 30, 1996). The Secretary's authority was further delegated to the Chief of the Forest Service (the “Chief”) by 7 C.F.R. § 2.60(a) (39). The Chief's authority was re-delegated to Regional Foresters, pursuant to the Forest Service Manual 2164.04c, 2.1, effective November 10, 1994.

4. The Forest Service has notified the State of Alaska (the “State”) on December 19, 2019 of this action.
5. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), the Forest Service notified the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration, the Organized Village of Kasaan, the Alaska Department of Environmental Conservation, the Alaska Department of Fish and Game, the Alaska Department of Natural Resources, and the Alaska Department of Law on March 12, 2018 of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal trusteeship and encouraged the trustee(s) to participate in the negotiation of this Settlement Agreement.
6. By signing this Settlement Agreement, Respondents consent to the Forest Service’s

jurisdiction to issue this Settlement Agreement and agree to comply with and be bound by the terms and conditions of this Settlement Agreement. In any action by the United States to implement or enforce the terms of this Settlement Agreement, Respondents agree not to contest the authority and jurisdiction of the Forest Service to issue and enforce this Settlement Agreement, and Respondents further agree not to contest the basis or validity of this Settlement Agreement or its terms. The Forest Service and Respondents recognize that this Settlement Agreement has been negotiated in good faith, and the implementation of the Work required is reasonable and in the public interest. The Work undertaken by Respondents pursuant to this Settlement Agreement does not constitute any admission of any liability. Respondents do not admit, and retain the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement by the United States, the validity of the Findings of Fact and Conclusions of Law set forth in Sections V and VI of this Settlement Agreement. Respondents do not admit any liability to any Third Party pursuant to or arising out of this Settlement Agreement.

III. PARTIES BOUND

7. This Settlement Agreement shall apply to, and be binding upon, the United States acting by and through the Forest Service, and Respondents, and their respective agents, successors, and assigns. Any change in ownership or corporate status of the Respondents, including, but not limited to, any transfer of assets or real or

personal property shall not alter the Respondents' responsibilities under this Settlement Agreement. The signatories to the Settlement Agreement certify that they are authorized to execute and legally bind the Parties that they represent to this Settlement Agreement.

8. Respondents are jointly and severally liable for carrying out all activities required by this Settlement Agreement. In the event of the insolvency or other failure of any one or more Respondents to implement the requirements of this Settlement Agreement, the remaining Respondents shall complete all such requirements.
9. Respondents shall arrange to provide a copy of this Settlement Agreement to each contractor, subcontractor, laboratory and consultant retained to perform the Work required by this Settlement Agreement and shall ensure that their contractors, subcontractors and representatives comply with the terms of the Settlement Agreement. Notwithstanding the provisions of any such contract, however, Respondents are, and shall remain, responsible for compliance with this Settlement Agreement.

IV. DEFINITIONS

10. Unless otherwise expressly provided herein, terms used in this Settlement Agreement which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement Agreement or in the attached appendices, the following definitions shall apply:

- a. “Action Memorandum” shall mean the Action Memorandum relating to the Site dated April 3, 2018, by the Regional Forester, or his/her delegate, and all attachments thereto. The Action Memorandum is attached as Appendix A.
- b. “CERCLA” shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, et seq.
- c. “Day” shall mean any calendar day. “Working Day” shall mean a day other than a Saturday, Sunday, or Federal holiday. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.
- d. “Effective Date” shall be the effective date of this Settlement Agreement as provided in Section XXX.
- e. “Forest Service” shall mean the United States Department of Agriculture Forest Service and any successor departments or agencies of the United States.
- f. “Future Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the Forest Service and USDA incur after the Effective Date in reviewing or developing plans, reports and other deliverables pursuant to this Settlement Agreement, in overseeing the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Paragraph 45 (including, but not limited to, costs and attorney’s fees and any monies paid to secure access, including, but not

limited to, the amount of just compensation) and Paragraph 36 (Work Takeover).

- g. “Health and Safety Plans” shall mean the Health and Safety Plans for the Ross Adams Mine Site Non-Time Critical Removal Action prepared in accordance with the Statement of Work, and any modifications made thereto in accordance with this Settlement Agreement.
- h. “Institutional controls” shall mean non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land and/or resource use. Examples of institutional controls include easements and covenants, zoning restrictions, special building permit requirements, and well-drilling prohibitions.
- i. “Interest” shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with CERCLA § 107(a), 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.
- j. “Interim Response Costs” shall mean all costs, including direct and indirect costs: a) paid by the Forest Service or USDA in connection with the Site between May 23, 2019 and the Effective Date; or b) incurred by the Forest Service or USDA prior to the Effective Date, but paid after that date.

- k. “National Contingency Plan” or “NCP” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.
- l. “Paragraph” shall mean a portion of this Settlement Agreement identified by an Arabic numeral.
- m. “Party” or “Parties” shall mean the United States and Newmont USA Limited and Dawn Mining Company, LLC.
- n. “Past Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the Forest Service or USDA paid or incurred at, or in connection with, the Site through May 23, 2019, plus Interest on all such costs through such date.
- o. “Quality Assurance Plans” shall mean the Quality Assurance Project Plans for the Ross Adams Mine Site Non-Time Critical Removal Action prepared in accordance with the Statement of Work, and any modifications made thereto in accordance with this Settlement Agreement.
- p. “RCRA” shall mean the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as further amended, 42 U.S.C. §§ 6901, et seq.
- q. “Removal Action” shall mean those activities to be undertaken by Respondents to implement the Work.
- r. “Response Costs” shall mean all costs not inconsistent with the NCP, including but not limited to direct and indirect costs, Past Response Costs incurred with

regard to the Site prior to the Effective Date of this Settlement Agreement, Interim Response Costs and Future Response Costs incurred during the implementation of this Settlement Agreement.

- s. “Section” shall mean a portion of this Settlement Agreement identified by a Roman numeral, unless the citation is a statute.
- t. “Settlement Agreement” shall mean this Administrative Settlement Agreement and Order on Consent and all attached appendices. In the event of conflict between this Settlement Agreement and any appendix, this Settlement Agreement shall control.
- u. "Site" shall mean the Ross Adams Mine Site located on the Tongass National Forest near the southern end of Prince of Wales Island. The Ross Adams Mine is located about 38 miles southwest of Ketchikan, Alaska. The legal description of the Site is sections 22, 26, and 27, Township 80 South, Range 88 East of the Copper River Meridian. The “Site” shall include anywhere that hazardous substances released from historic mining at the Ross Adams Mine has come to be located. The entire Site is on lands under the jurisdiction, custody, and control of the Forest Service. A map showing the general location of the Site is attached as Appendix B.
- v. “State” shall mean the State of Alaska.
- w. “Statement of Work” shall mean the Statement of Work for the Ross Adams Mine Site Non-Time-Critical Removal Action appended hereto as Appendix C,

and any modifications made thereto in accordance with this Settlement Agreement.

- x. “SWPPP” shall mean the Storm Water Pollution Prevention Plan (SWPPP) for the Ross Adams Mine Site Non-Time Critical Removal Action prepared in accordance with the Statement of Work, and any modifications made thereto in accordance with this Settlement Agreement.
- y. “Third Parties” shall mean any person as defined in CERCLA § 101(21) that is not a party to this Settlement Agreement.
- z. “United States” shall mean the United States of America and each department, agency and instrumentality of the United States, including the Forest Service.
- aa. “USDA” shall mean the United States Department of Agriculture.
- bb. “Waste Material” shall mean (a) any “hazardous substance” under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and (c) any “solid waste” under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).
- cc. “Work” shall mean all activities that Respondents are required to perform to implement the Action Memorandum, the Statement of Work, and other activities in this Settlement Agreement except those required by Section XVI (Record Preservation). The term shall also include any additional work that Respondents are to perform pursuant to Paragraph 35 of this Settlement Agreement.

V. FINDINGS OF FACT

11. The Site is located in a semi-remote recreational area of the Tongass National Forest within the Craig Ranger District. The Site consists of an abandoned uranium mine, haul roads, ore staging area, former barge loading area, and downstream potentially impacted areas including the Kendrick Creek delta. An access road between the 900-Foot Level and an adjacent exploration claim known as the I&L Zone was constructed using mine rock at some point during regional exploration. The lower portion of the I&L access road (I&L Spur Road) is included in the Site definition. The I&L Zone represents a group of radioactive mineral prospects on the east flank of Bokan Mountain northwest of the Ross-Adams deposit, with exposed mineralization. Mineral exploration has been conducted on the I&L Zone, but it has never been mined and is not part of the Site.
12. The Forest Service has compiled the following brief summary of the operational history of the Site:
 - a. In May, 1955, Don Ross discovered the uranium deposit onsite, and shortly thereafter he and Kelly Adams staked the original 13 claims located onsite.
 - b. Climax Molybdenum Co. began exploratory drilling onsite on Aug. 30, 1955, and it performed a limited amount of exploration over the next two months. On October 10, 1955, Climax Molybdenum Co. incorporated the Kendrick Bay Mining Company (“KBMC”), and that company took over development of the Site.

- c. From July through October, 1957, KBMC produced at least 15,000 tons of ore from the Ross Adams Mine and grossed slightly over \$2 million. In 1959, the Jott Mining Company leased the claims from KBMC and produced about 1,100 tons of ore in 1960. In 1961, Bay West, Incorporated (“Bay West”) leased the claims from KBMC, and produced 2,600 tons of ore.
- d. In January, 1963, Standard Metals Corporation (“Standard”) was authorized by its board of directors to enter into a joint venture with Bay West wherein Standard purchased the right, title and interest of Bay West in the KBMC claims. Standard operated the Site on its own for several years. In 1963, Standard mined at least 11,667 tons of ore onsite and shipped 9,856 tons of that ore to a mill in Mexican Hat, Utah. On March 4, 1964, Standard agreed to acquire 75% of KBMC’s stock. Shortly thereafter, the Federal Government announced cutbacks in uranium procurement, but that did not affect the sale of the ore under existing contracts. By September, 1964, Standard had fulfilled its AEC allocation, but Standard continued its exploration and assessment work onsite.
- e. In 1968, KBMC entered into a joint venture with Newmont Exploration Limited (“NEL”) to explore the Site. In 1970, NEL exercised an option to lease the property. NEL then subleased the Site to Dawn.
- f. NEL and Dawn began extracting ore about the end of June, 1971. The ore was shipped to Dawn’s mill in Ford, Washington from July, 1971 through September, 1971. NEL and Dawn mined at least 55,000 tons from the Site

during 1971, and then shut down their operations onsite. There has been no further mining onsite since 1971.

- g. The primary releases of hazardous substances onsite are radionuclides. Miscellaneous solid wastes and petroleum products are also present at the Site. Radon and direct gamma radiation contribute the major portion of the estimated theoretical risk to occupational and recreational users of the Site, with inhalation of radon decay products accounting for approximately 90 to 95 percent of the potential radiation risk. Of particular note, risks to human receptors from radiation exposures due to background conditions in the naturally mineralized area exceed acceptable risk levels. In addition, miscellaneous hazardous substances including heavy metals, solid wastes, and petroleum products still exist onsite due to legacy mining activities. In addition, concentrations of heavy metals and radionuclides are elevated in Kendrick Creek primarily due to the drainage from an adit onsite.
- h. On April 17, 2009, Newmont USA and Dawn entered into an Administrative Settlement Agreement and Order on Consent (“ASAOC”) with the Forest Service to perform the Engineering Evaluation/Cost Analysis for the Site (“EECA”). The EECA was completed in April, 2015 and may be found at:
<http://www.ross-adams-eeeca.com/Administrative%20Record/Ross%20Adams%20EECA/Ross%20Adams%20EECA%20Main%20Report.pdf>

The recommended removal actions in this Action Memorandum reflect the recommended removal action alternatives from the EECA, including excavation, consolidation, and cover in the open pit repository; closing the upper mine openings; and installing a concrete bulkhead at the 300 foot level portal.

13. Pursuant to CERCLA and Executive Order 12580 (Jan. 23, 1987), the Forest Service is the lead agency for response actions at the Site.
14. Based on available information, there is a release, or a substantial threat of a release, of hazardous substances at the Site to the environment.

VI. CONCLUSIONS OF LAW

15. Based on the Findings of Fact set forth above, the Forest Service makes the following Conclusions of Law:
 - a. The Site is a “facility” as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).
 - b. There are hazardous substances, as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), present at the Site including, but not limited to, radium and uranium.
 - c. The conditions described in the Findings of Fact above constitute an actual or threatened “release,” of a hazardous substance from the facility, as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).
 - d. Respondents are a “person,” as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

- e. Each Respondent is a liable party under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), jointly and severally liable for the performance of response actions and for Response Costs incurred and to be incurred at the Site. Respondents were the owner and/or operator of the facility at the time of disposal of hazardous substances at the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601 (20), and within the meaning Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).
- f. The conditions described in the Findings of Fact above constitute an actual or threatened “release” of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).
- g. The Work required by this Settlement Agreement is in the public interest, is consistent with CERCLA and not inconsistent with the NCP, 42 U.S.C. §§ 9604(a)(1) and 9622(a), and will expedite effective response action and minimize litigation, 42 U.S.C. § 9622(a).
- h. Based on information currently available, the Forest Service has determined, for purposes of Section 104(a) of CERCLA, 42 U.S.C. § 9604(a), that Respondents are qualified to properly and promptly perform the Work required by this Settlement Agreement.

VII. ON-SCENE COORDINATOR/PROJECT COORDINATOR

- 16. The Forest Service has designated an On-Scene Coordinator (“OSC”), and Respondents shall, within five (5) days of the Effective Date of this Settlement

Agreement, designate a Project Coordinator for the Site. The OSC shall be responsible for overseeing implementation of the Work and/or activities required under this Settlement Agreement for the Forest Service, and the Project Coordinator shall be responsible for overseeing implementation of the Work and/or activities required under this Settlement Agreement for Respondents. All written communications between the Parties concerning implementation of this Settlement Agreement shall be directed to the OSC or Project Coordinator, by regular or overnight mail or by email, with copies to such other persons as the Forest Service and Respondents, respectively, may reasonably designate. The Parties may change their respective OSCs/Project Coordinators and shall notify each other in writing at least five (5) days prior to any such change. Respondents may retain one or more contractors to perform the Work required under this Settlement Agreement and shall notify the Forest Service of the name(s) and qualifications of such contractor(s) at least 30 days prior to the commencement of the Work. Respondents shall also notify the Forest Service of the name(s) and qualification(s) of any subcontractor(s) retained to perform the Work at least 5 days prior to their commencement of such Work. The Forest Service retains the right to disapprove of any or all of the contractors and/or subcontractors retained by Respondents. If the Forest Service disapproves of a selected contractor, Respondents shall retain a different contractor and shall notify the Forest Service of that contractor's name and qualifications within 30 days of the Forest Service's disapproval.

17. Deliverables and other written communications submitted under this Settlement

Agreement shall be sent to the following persons:

For the Forest Service:

Linda Riddle
USFS Alaska On-Scene Coordinator
P.O. Box 21628
Juneau, AK 99802
linda.riddle@fs.fed.us

Michael Hope, Senior Attorney
Office of the General Counsel
U.S. Department of Agriculture
1617 Cole Blvd., Suite 385E
Lakewood, CO 80401

For Respondents:

Nancy Lipson
Dawn Mining Company LLC
6363 S. Fiddler's Green Circle
Greenwood Village, CO 80111

18. The Forest Service's OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Settlement Agreement or to take any necessary response action to abate conditions at the Site that may present an imminent and substantial endangerment to the public health or welfare or the environment. The absence of the Forest Service's OSC from the Site shall not be cause for stoppage or delay of the Work required pursuant to this Settlement Agreement.

VIII. WORK TO BE PERFORMED

19. Respondents shall take all actions necessary to fully perform and implement the Work in accordance with the Action Memorandum, Statement of Work, the Quality Assurance Plans, the Health and Safety Plans and the SWPPP. The Forest Service has approved the Statement of Work, which is attached hereto and incorporated herein by reference as Exhibit C.
20. All Work performed in connection with this Settlement Agreement shall be conducted under the direction and supervision of qualified personnel with experience in CERCLA response actions.
21. All Work performed pursuant to this Settlement Agreement, including all sample collection and analysis, shall be conducted in accordance with CERCLA, the NCP, and applicable agency guidance documents.
22. Respondents shall not commence implementation of the Statement of Work attached as Appendix C until receiving the Forest Service Authorization to Proceed.
23. All samples collected as part of the Work shall be analyzed in accordance with the Quality Assurance Plans. Respondents shall notify the Forest Service orally at least twenty-four hours prior to field events, including unscheduled sampling events. Upon request by the Forest Service, Respondents shall allow the Forest Service or its authorized representatives to take split and/or duplicate samples or measurements. The Forest Service shall have the right to take any additional samples that it deems necessary. Upon request, the Forest Service shall allow Respondents to take split or duplicate samples of any samples it takes as part of its

oversight of Respondents' implementation of the Work.

24. The 900 Level Pit Area is the repository location designated by Respondents for containment of Waste Material removed from the Site as part of the Work. Before shipping any Waste Material from the Site to an off-site location other than the 900 Level Pit Area, Respondents shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondents shall only send Waste Material from the Site to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence. Respondents shall, prior to any off-site shipment of Waste Material from the Site to an out of state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and the OSC.
25. The documents required to be submitted for approval pursuant to this Settlement Agreement shall be known as "deliverables." During performance of the Work required under this Settlement Agreement, Respondents shall provide the Forest Service with deliverables as described in the Statement of Work.
26. The deliverables described in the Statement of Work include: Monthly Progress Reports and a Final Completion Report. The Monthly Progress Reports shall contain the information described in the Statement of Work. After Respondents believe they have completed the Work, Respondents shall submit a Final Completion Report documenting implementation of the Work, including all

modifications approved by the Forest Service as provided herein, if any, made during such implementation. The report shall contain a detailed description of the Work as performed and a description of all follow-up activities recommended for the Site. The Final Completion Report shall include (1) certifications by a registered professional engineer and by Respondents' Project Coordinator that the Work is complete; (2) include as built drawings signed and stamped by a registered professional engineer; (3) contain monitoring data to demonstrate that Performance Standards have been achieved; (4) a listing of quantities and types of materials removed off-site or handled on-site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials; (5) a presentation of the analytical results of all sampling and analyses performed; and (6) accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, and contracts). The Final Completion Report shall also include the following certification signed by a person who supervised or directed the preparation of that report: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision by qualified personnel and, based on my inquiry of those personnel, I am informed and believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

27. Respondents shall submit the deliverables required by this Settlement Agreement in accordance with the schedule set forth in the Statement of Work.
28. Post Removal Site Control. In accordance with the Statement of Work schedule, Respondents shall submit a proposal for post removal site control consistent with Section 300.415(l) of the NCP including any appropriate institutional controls. The Forest Service shall implement such controls.
29. If a Monthly Progress Report or the Final Completion Report do not include complete and accurate information required under this Settlement Agreement, the Forest Service retains the right to seek either stipulated penalties pursuant to this Settlement Agreement or statutory penalties pursuant to Section 109 of CERCLA, 42 U.S.C. § 9609, to complete the Work itself (or any portion of the Work), and seek reimbursement from Respondents for their costs, and/or to seek any other appropriate relief, subject to Respondents' right to invoke the provisions of Section XVII (Dispute Resolution) of this Settlement Agreement.
30. The Forest Service reserves the right to stop work from proceeding further, either temporarily or permanently, at any point during performance of the Work required under this Settlement Agreement if Respondents fail to comply with the terms of this Settlement Agreement.
31. The Forest Service will prepare and implement a Community Involvement Plan in accordance with applicable EPA guidance(s) and the NCP. To the extent requested by the Forest Service, Respondents shall provide information and otherwise cooperate with the Forest Service in support of the Community Involvement Plan.

32. At least 30 days prior to commencing any on-site work under this Settlement Agreement, Respondents shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of one million dollars, combined single limit, naming the Forest Service as an additional insured. Within the same time period, Respondents shall provide the Forest Service with certificates of such insurance and a copy of each insurance policy. Respondents shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement Agreement, Respondents shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondents in furtherance of this Settlement Agreement. If Respondents demonstrate by evidence satisfactory to the Forest Service that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondents need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

IX. EMERGENCY RESPONSE AND NOTIFICATION

33. In the event of any action or occurrence during the performance of the Work which may present an imminent and substantial endangerment to the public health or welfare or the environment, Respondents shall immediately take all appropriate

action. Respondents shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including but not limited to the Health and Safety Plans, to abate or minimize the endangerment. Respondents shall also notify the OSC by telephone within 24 hours of discovery of the endangerment. In the event that Respondents fail to take appropriate response action as required by this Paragraph, and the Forest Service takes such action instead, Respondents shall reimburse the Forest Service all costs of the response action not inconsistent with the NCP pursuant to Section XIX (Reimbursement of Costs).

34. Nothing in the preceding Paragraph shall be deemed to limit any authority of any agency of the United States, including the Forest Service, to take, direct, or order all appropriate action to protect the public health or welfare or the environment.

X. ADDITIONAL INVESTIGATION AND ANALYSIS

35. If the Forest Service determines that additional removal actions not included in the Removal Action Work Plan are necessary to protect the public health or welfare or the environment, and such additional actions are consistent with the Statement of Work and Action Memorandum, the Forest Service will notify Respondents of that determination. Unless otherwise stated by the Forest Service, within thirty (30) days of the Forest Service's determination that additional Work is required, Respondents shall submit to the Forest Service a revised work plan describing and providing a schedule for performance of the additional Work. Upon the Forest Service's written approval of the plan, Respondents shall implement the plan in

accordance with the provisions and schedule contained therein. This Section does not alter or diminish the OSC's authority to make oral modifications to any plan or schedule pursuant to Paragraph 100-103 (Modifications).

36. **Work Takeover.** In the event the Forest Service determines that Respondents have ceased implementation of any portion of the Work, are seriously or repeatedly deficient or late in their performance of the Work, or are implementing the Work in a manner that may cause an endangerment to human health or the environment, the Forest Service may assume the performance of any or all portion(s) of the Work as the Forest Service determines necessary. Respondents may invoke the procedures set forth in Section XVII (Dispute Resolution) to dispute the Forest Service's determination that takeover of the Work is warranted under this Paragraph. Costs that the United States incurs in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Respondents shall pay pursuant to Section XIX (Reimbursement of Costs). Notwithstanding any other provision of this Settlement Agreement, the Forest Service retains all authority and reserves all rights to take any and all response actions authorized by law.

XI. APPROVAL OF PLANS AND OTHER SUBMISSIONS

37. After review of any plan, report, or other item that is required to be submitted for approval pursuant to this Settlement Agreement, in a notice to Respondents, the Forest Service shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the

deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondents modify the submission; or (e) any combination of the above.

However, the Forest Service shall not modify a submission without first providing Respondents at least one notice of deficiency and an opportunity to cure within 30 days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects.

38. In the event of approval, approval upon conditions, or modification by the Forest Service, pursuant to Subparagraphs 37(a), (b), (c), or (e), Respondents shall proceed to take any action required by the plan, report, or other deliverable, as approved or modified by the Forest Service subject only to their right to invoke the Dispute Resolution procedures set forth in Section XVII (Dispute Resolution) with respect to the modifications or conditions made by the Forest Service. Following the Forest Service approval or modification of a submission or portion thereof, Respondents shall not thereafter alter or amend such submission or portion thereof unless directed by the Forest Service. In the event that the Forest Service modifies the submission to cure the deficiencies pursuant to Subparagraph 37(c) and the submission had a material defect, the Forest Service retains the right to seek stipulated penalties, as provided in Section XX (Stipulated Penalties).

39. Resubmission.

- a. Upon receipt of a notice of disapproval, Respondents shall, within 10 Working Days or such longer time as specified by the Forest Service in such notice, correct the deficiencies and resubmit the plan, report, or other deliverable for

approval. Any stipulated penalties applicable to the submission, as provided in Section XX, shall accrue during the 10-day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 40 and 41.

- b. Notwithstanding the receipt of a notice of disapproval, Respondents shall proceed to take any action required by any non-deficient portion of the submission, unless otherwise directed by the Forest Service. Implementation of any non-deficient portion of a submission shall not relieve Respondents of any liability for stipulated penalties under Section XX (Stipulated Penalties).
 - c. Respondents shall proceed with all subsequent tasks, activities, and deliverables without awaiting the Forest Service approval on the submitted deliverable. The Forest Service reserves the right to stop Respondents from proceeding further, either temporarily or permanently, on any task, activity, or deliverable at any point.
40. If the Forest Service disapproves a resubmitted plan, report, or other deliverable, or portion thereof, the Forest Service may again direct Respondents to correct the deficiencies. The Forest Service shall also retain the right to modify or develop the plan, report, or other deliverable to cure the defect. Respondents shall implement any such plan, report, or deliverable as corrected, modified, or developed by the Forest Service, subject only to Respondents' right to invoke the procedures set forth in Section XVII (Dispute Resolution).
41. If upon resubmission, a plan, report, or other deliverable is disapproved or modified

by the Forest Service due to a material defect, Respondents shall be deemed to have failed to submit such plan, report, or other deliverable timely and adequately, unless Respondents invoke the dispute resolution procedures in accordance with Section XVII (Dispute Resolution) and the Forest Service's action is revoked or substantially modified pursuant to a Dispute Resolution decision issued by the Forest Service or superseded by an agreement reached pursuant to that Section. The provisions of Section XVII (Dispute Resolution) and Section XX (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If the Forest Service's disapproval or modification is not otherwise revoked, substantially modified, or superseded as a result of a decision or agreement reached pursuant to the Dispute Resolution process set forth in Section XVII, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XX.

42. In the event that the Forest Service takes over some of the tasks, Respondents shall incorporate and integrate information supplied by the Forest Service into the final reports.
43. All plans, reports, and other deliverables submitted to the Forest Service under this Settlement Agreement shall, upon approval or modification by the Forest Service, be incorporated into and enforceable under this Settlement Agreement. In the event the Forest Service approves or modifies a portion of a plan, report, or other deliverable submitted to the Forest Service under this Settlement Agreement, the

approved or modified portion shall be incorporated into and become enforceable under this Settlement Agreement.

XII. ADMINISTRATIVE RECORD

44. In accordance with 40 C.F.R. §§ 300.800-825, the Forest Service will determine the contents and location of the administrative record for response actions selected for the Site.

XIII. ACCESS

45. Pursuant to the terms and conditions of this Settlement Agreement, Respondents and their authorized representatives are authorized by the Forest Service to have access to those parts of the Site that are under the custody, control and jurisdiction of the Forest Service solely for the purpose of implementing the terms of this Settlement Agreement. If, to perform the Work required by this Settlement Agreement, access is needed to any area or land not under the custody, control and jurisdiction of the Forest Service, Respondents shall use best efforts to secure access agreements for themselves and their authorized representatives, as well as for the Forest Service. Respondents shall immediately notify the Forest Service if after using their best efforts, they are unable to obtain such access agreements. Respondents shall describe in writing their efforts to obtain access. The Forest Service may then assist Respondents in gaining access, to the extent necessary to effectuate the objectives of this Settlement Agreement, using such means as the

Forest Service deems appropriate. Respondents shall reimburse the Forest Service for all costs and attorney's fees incurred by the United States in obtaining such access pursuant to Section XIX (Reimbursement of Costs).

XIV. ACCESS TO INFORMATION

46. Respondents shall provide to the Forest Service, upon request, copies of all non-privileged documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondents shall also make available to the Forest Service, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.
47. Respondents may assert business confidentiality claims covering part or all of the documents or information submitted to the Forest Service under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by the Forest Service will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to the Forest

Service, or if it has notified Respondents that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondents.

48. Respondents may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondents assert such a privilege in lieu of providing documents, they shall provide the Forest Service with the following: (a) the title of the document, record, or information; (b) the date of the document, record, or information; (c) the name and title of the author of the document, record, or information; (d) the name and title of each addressee and recipient; (e) a description of the contents of the document, record, or information; and (f) the privilege asserted by Respondents. However, no documents, reports, or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged or confidential.
49. No claim of privilege or confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other factual information evidencing conditions at or around the Site.

XV. OTHER APPLICABLE LAWS

50. All actions required to be taken pursuant to this Settlement Agreement shall be

performed in accordance with the requirements of all applicable local, state and federal laws and regulations.

51. Compliance by Respondents with the terms of this Settlement Agreement shall not relieve Respondents of their obligations to comply with the applicable sections of CERCLA, the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6921, et seq., or any other applicable local, state or federal laws and regulations.
52. No local, state or Federal permit shall be required for any portion of any action conducted entirely on-site, including investigations and testing, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. As used in this Settlement Agreement, the term “on-site” shall have the meaning set forth in 40 C.F.R. Part 300.5 and shall include anywhere that sampling is required as part of the Work. Where any portion of the Work is to be conducted off-site and requires a Federal or state permit or approval, Respondents shall submit timely and complete applications and take all other actions necessary to obtain and comply with all such permits or approvals. This Settlement Agreement is not, and shall not be construed to be, a permit issued pursuant to any Federal or state statute or regulation.

XVI. RECORD PRESERVATION

53. The original or one copy of all records and documents, excluding internal drafts of deliverables, in the possession, custody or control of Respondents that are generated or collected pursuant to this Settlement Agreement, or regarding the liability of any

person under CERCLA with respect to the Site shall be preserved for ten years following completion of the Work required by this Settlement Agreement, regardless of any corporate record retention policy. Such documents or information may be preserved in either a paper or an electronic form. Respondents shall also instruct their contractors, subcontractors, and agents to preserve all documents, records, and other information of whatever kind, nature, or description relating to performance of the Work. If documents or information is preserved in electronic form, Respondents shall make it available in a format readable by the Forest Service, or Respondents shall provide, at Respondents' expense, a copy to the Forest Service of the program needed to read the document or information. At the end of this ten-year period and 30 days before any document or information is destroyed, Respondents shall notify the Forest Service in writing that such documents or information may be destroyed and, upon request, shall provide the originals or copies of such documents and information to the Forest Service.

54. Each Respondent hereby certifies individually that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any records, documents, or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by the Forest Service, and that it has fully complied with any and all Forest Service requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XVII. DISPUTE RESOLUTION

55. The dispute resolution procedures in this Section are the exclusive mechanism for resolving disputes arising under this Settlement Agreement. A dispute shall be considered to have arisen when Respondents send the Forest Service a written Notice of Dispute. A Notice must be submitted by Respondents within twenty (20) Working Days of receipt of any written final disapproval by the Forest Service of a deliverable required by this Settlement Agreement or any other written notification by the Forest Service of noncompliance with any requirement of this Settlement Agreement. A failure to submit a timely Notice of Dispute shall be deemed a waiver of Respondents' right to invoke dispute resolution under this Section.
56. In the first instance, the Parties shall attempt to resolve any dispute arising under this Settlement Agreement by informal negotiations. The period for informal negotiations shall not exceed twenty (20) days from the date of receipt of the Notice of Dispute, unless the Parties agree in writing to modify the period for informal negotiations. Any agreement reached by the Parties pursuant to this Paragraph shall be in writing and shall, upon signature by both Parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the Parties fail to resolve the dispute informally, the formal dispute resolution procedure in the following Paragraphs shall apply
57. In the event the Parties cannot resolve the dispute through informal negotiations, then the Forest Service's position shall be binding unless, within fifteen (15) days after the

conclusion of the informal negotiations period, Respondents invoke the formal dispute resolution procedures of this section by serving on the Forest Service a written Statement of Position on the matter in dispute. Respondents' written Statement of Position shall be sent by facsimile, overnight mail or some equivalent service, and shall define the dispute and state the basis of Respondents' objections to the Forest Service's position.

58. Following receipt of Respondents' Statement of Position, the Forest Service shall promptly provide the Regional Forester, Forest Service Northern Region, with a copy of Respondents' Statement of Position and a written response to Respondents' Statement of Position. A copy of the Forest Service's response shall be simultaneously sent to Respondents by facsimile and/or overnight mail or some equivalent service. Within ten (10) days after receipt of the Forest Service's response, Respondents may provide to the Regional Forester and Forest Service a reply.
59. Following receipt of Respondents' Statement of Position and the Forest Service's response, the Regional Forester or his/her designee, will fairly and impartially consider the Respondents' Statement of Position and the Forest Service's response and will issue a final written decision on the dispute to Respondents. In the event the Forest Service files any action against Respondents to enforce this Settlement Agreement, the terms of this Section shall not constitute a waiver of any defenses to such action.
60. Following resolution of the dispute, as provided by this Section, Respondents shall fulfill the requirement that was the subject of the dispute in accordance with the

agreement reached or with the Forest Service's decision, whichever occurs.

61. The invocation of the dispute resolution provisions of this Settlement Agreement shall not extend, postpone or affect in any way any obligation of Respondents under this Settlement Agreement, unless the Forest Service agrees in writing otherwise.

XVIII. FORCE MAJEURE

62. Delays or inability to perform any of the requirements of the Settlement Agreement within the time limits prescribed shall not be a violation of the Settlement Agreement where performance is prevented or delayed by a force majeure event. Force majeure is defined as any event arising from causes beyond the control of Respondents, of any entity controlled by Respondents, or of Respondents' contractors and subcontractors, that delays or prevents performance of any obligation under this Settlement Agreement despite Respondents' best efforts to fulfill the obligation. Force majeure does not include the financial inability of Respondents to complete performance of the Work or increased cost of performance. Respondents shall have the burden of proving force majeure by a preponderance of the evidence.
63. If any event occurs or has occurred that may materially delay performance of any Work under this Settlement Agreement or submittal of any deliverable past the applicable deadline, whether or not caused by a force majeure event, Respondents shall notify the OSC verbally and via email within three (3) Working Days of the time Respondents first knew that the event might delay such performance or

submittal. Within five (5) Working Days thereafter, Respondents shall provide to the Forest Service in writing an explanation and description of the reasons for the delay, the anticipated length of the delay, measures taken or to be taken to minimize the delay, and an estimated timetable for implementation of these measures.

Failure to comply with these requirements shall preclude Respondents from asserting any claim of force majeure for the period of time of such failure to comply and for any additional delay caused by such failure.

64. The OSC shall notify Respondents in writing of the Forest Service's determination as to whether force majeure applies to the event or circumstances whenever practicable within seven (7) Working Days after receipt of written notice from Respondents. If the Forest Service determines that the delay has been or will be caused by circumstances constituting a force majeure, the due date for each uncompleted task in this Settlement Agreement shall be extended for a sufficient period to complete the tasks that were delayed or prevented. Such period shall be at least equal to the delay resulting from the force majeure circumstance. If the Forest Service does not sustain Respondents' force majeure claim, or if there is no agreement on the length of an extension of time, the dispute shall be resolved in accordance with the dispute resolution provisions in Section XVII of this Settlement Agreement.

XIX. REIMBURSEMENT OF COSTS

65. If Respondents meet all of their obligations under the Settlement Agreement, the

Forest Service will pay its own Response Costs incurred by the Forest Service and the USDA in connection with this Settlement Agreement.

66. If Respondents fail to meet all of their obligations under this Settlement Agreement, the Forest Service will send to Respondents a demand for Response Costs, including Past Response Costs of \$530,322 and a bill for Interim Response Costs and Future Response Costs, including a cost summary, for Response Costs incurred by the Forest Service, the USDA, and the Department of Justice in connection with preparing this Settlement Agreement and overseeing its implementation. The bill will include a cost package consisting of applicable: (1) payroll information, consisting of a cost summary, and any time sheets that exist, if requested by Respondents; (2) indirect cost information, consisting of an overall and an employee-by-employee cost summary; (3) travel information, consisting of a cost summary, travel authorizations, and travel vouchers or their equivalent if they exist; (4) contractor (including Contract Laboratory Program contacts) information, consisting of site specific vouchers, if they exist, Annual Allocation Reports and cost summaries; and (5) Inter-Agency Agreements. Except as otherwise provided in Paragraph 56 of this Settlement Agreement, within sixty (60) days of receipt of each bill, Respondents shall make payment in accordance with the instructions provided by the Forest Service in its bill.
67. In the event full reimbursement of the Response Costs is not paid by Respondents within sixty (60) days of Respondents' receipt of each bill, as provided in the preceding Paragraph, Respondents shall be liable to pay stipulated penalties, as

provided in this Settlement Agreement, and interest on the unpaid balance of response costs at the rate provided in Section 107(a)(4) of CERCLA, 42 U.S.C. § 9607(a)(4). If the bill is not paid within sixty (60) days of Respondents' receipt, interest shall begin to accrue on the sixty first (61st) day after Respondents' receipt of the bill and shall continue to accrue until the date that full payment of the bill is received by the Forest Service.

68. In accordance with the provisions of Section XVII of this Settlement Agreement, Respondents may dispute all or part of a bill for reimbursement of Response Costs submitted pursuant to this Settlement Agreement, only if Respondents allege that the Forest Service has made an accounting error, or if Respondents allege that a cost item is inconsistent with the NCP. Any such objection shall be made in writing within sixty (60) days of receipt of the demand for payment and shall specifically identify the disputed costs and the basis of the dispute. If any dispute over costs is resolved before payment is due, the amount due will be adjusted as necessary. If the dispute is not resolved before payment is due, Respondents shall pay the full amount of the uncontested costs to the Forest Service as specified in Paragraph 66 on or before the due date. Within the same time period, Respondents shall pay the full amount of the contested costs into an interest-bearing escrow account. Respondents shall simultaneously transmit a copy of both checks to the persons listed in Paragraph 17 above. Respondents shall ensure that the prevailing party or parties in the dispute receive the amount awarded by the resolution of the dispute from the escrow funds plus interest within 30 days after the dispute is resolved.

XX. STIPULATED PENALTIES

69. Unless there has been a written modification of a compliance date or other requirement of this Settlement Agreement by the Forest Service, or a force majeure event as defined herein, in the event Respondents fail to timely perform any of the Work set forth in this Settlement Agreement, Respondents shall pay stipulated penalties in the amount of \$500 per day, per violation for the first week of violation; \$1,000 per day, per violation for the 8th through 14th day of noncompliance; and \$2000 per day, per violation for the 15th day of noncompliance and every day thereafter, not including days in dispute resolution. Compliance by Respondents shall include complete and timely performance of each activity required under this Settlement Agreement or complete and timely performance of all Work described in any plan, statement or deliverable approved under this Settlement Agreement.
70. In the event that the Forest Service assumes performance of a portion or all of the Work pursuant to Paragraph 36, Respondents shall be liable for a stipulated penalty in the amount of \$500,000.
71. All penalties shall begin to accrue on the day after complete performance is due or a violation occurs and shall continue to accrue through the final day of correction of the noncompliance. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section VIII (Work to be Performed), during the period, if any, beginning on the 15th day after the Forest Service's receipt of such submission until the date that the Forest Service notifies

Respondents of any deficiency; and (2) with respect to a decision of the Forest Service under Paragraph 59 of Section XVII (Dispute Resolution), during the period, if any, beginning on the 21st day after period for informal negotiations begins until the date the Forest Service issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

72. Following the Forest Service's determination that Respondents have failed to comply with a requirement of this Settlement Agreement, the Forest Service will give Respondents written notification of the failure and describe the noncompliance. The Forest Service may send Respondents a written demand for payment of the penalties owed by Respondents pursuant to this Section. All penalties shall be paid by wire transfer, or by certified or cashier's check, within thirty (30) days of the date of receipt of the demand for payment by the Forest Service, unless Respondents invoke the dispute resolution procedures of Section XVII (Dispute Resolution). Interest shall begin to accrue on the unpaid balance from the date of the issuance of the Forest Service's demand for payment. Interest shall accrue at the rate provided in Paragraph 67 of this Settlement Agreement. Payment shall be made in accordance with the instructions in Paragraph 66 of this Settlement Agreement.
73. At the time of payment, Respondents shall send notice that payment has been made as provided in Paragraph 17.
74. The stipulated penalties set forth in this Section do not preclude the Forest Service

from pursuing any other remedies or sanctions that may be available to the Forest Service by reason of Respondents' failure to comply with any of the requirements of this Settlement Agreement, nor shall payment of stipulated penalties relieve Respondents of the responsibility to comply with any requirement of this Settlement Agreement. Notwithstanding any other provision of this Section, the Forest Service may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

75. Penalties shall continue to accrue during any dispute resolution period but need not be paid until 15 days after the dispute is resolved by agreement or by receipt of the Forest Service's decision. If Respondents fail to pay stipulated penalties when due, the Forest Service may institute proceedings to collect the penalties, as well as Interest.
76. The payment of penalties shall not alter in any way Respondents' obligation to complete performance of the Work required under this Settlement Agreement.

XXI. RESERVATION OF RIGHTS

77. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of the United States to take, direct, or order all actions necessary to protect the public health or welfare or the environment or to prevent, abate, or minimize an actual or threatened release of Waste Material on, at, or from the Site. Further, nothing herein shall prevent the United States from seeking legal or equitable relief to enforce the terms of this Settlement Agreement, from taking other

legal or equitable action as it deems appropriate and necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA or any other applicable law, subject to the covenants set forth in Section XXII (Covenants not to Sue).

78. The Forest Service reserves, and this Settlement Agreement is without prejudice to, all rights against Respondents with respect to all matters not expressly included within Forest Service's covenants. The covenants not to sue set forth in Section XXII do not pertain to any matters other than those expressly identified therein. Notwithstanding any other provision of this Settlement Agreement, the United States reserves, and this Settlement Agreement is without prejudice to, all rights against Respondents with respect to all other matters, including, but not limited to:
- a. liability for failure by Respondents to meet the requirements of this Settlement Agreement;
 - b. criminal liability;
 - c. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
 - d. liability arising from the past, present, or future disposal, release or threat of release outside of the Site of: 1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); 2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and 3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27);

- e. liability based on the ownership of the Site by Respondents when such ownership commences after signature of this Settlement Agreement by Respondents;
 - f. liability based on the operation of the Site by Respondents when such operation commences after signature of this Settlement Agreement by Respondents and does not arise solely from Respondents' performance of the Work;
 - g. liability based on Respondents' transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, other than as provided in the Action Memorandum, the Work, or otherwise ordered by the Forest Service, after signature of this Settlement Agreement by Respondents;
 - h. liability for violations of federal or state law that occur during or after implementation of the Work;
 - h. liability, prior to achievement of Performance Standards, for additional response actions that the Forest Service determines are necessary to achieve and maintain Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the Action Memorandum; and
79. This agreement does not resolve liability for claims to any Agency or Department that is not part of the USDA, including, but not limited to claims under Sections 106, 107 and 113 of CERCLA, 42 U.S.C. §§ 9606, 9607 and 9613.
80. The Parties to this Settlement Agreement reserve any claims they now have, or may have in the future, against any Third Party including, but not limited to, claims under

Sections 106, 107 and 113 of CERCLA, 42 U.S.C. §§ 9606, 9607 and 9613, for recovery of Response Costs, including oversight costs arising out of, or related to, this Settlement Agreement, and any future and/or past costs incurred in connection with the Site. Nothing in this Settlement Agreement shall constitute or be construed as a release from any claim, cause of action or demand against any person, firm, partnership, or corporation not a signatory to this Settlement Agreement for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any Waste Material found at, taken to, or taken from the Site.

XXII. COVENANTS NOT TO SUE

81. Except as provided in ¶¶ 82, 83 (Pre- and Post-Completion Reservations), and Section XXI (Reservations of Rights), the Forest Service and USDA covenant not to sue or to take administrative action against Respondents pursuant to Sections 106, 107(a), and 113(f) of CERCLA, relating to the Site. These covenants shall take effect upon Notice of Response Action Completion by the Forest Service pursuant to Section XXVI (Notice of Completion). These covenants are conditioned upon the satisfactory performance by Respondents of their obligations under this Settlement Agreement. These covenants extend only to Respondents and do not extend to any other person.
82. Pre-Completion Reservations. Notwithstanding any other provision of this Agreement, the Forest Service reserves, and this Agreement is without prejudice to, the right to institute proceedings in this action or in a new action, and/or to issue an

administrative order, seeking to compel Respondents to perform further response actions relating to the Site and/or to pay the United States for additional costs of response if, (a) prior to Notice of Completion, (1) conditions at the Site, previously unknown to the Forest Service, are discovered, or (2) information, previously unknown to the Forest Service, is received, in whole or in part, and (b) the Forest Service determines that these previously unknown conditions or information together with any other relevant information indicates that the Removal Action is not protective of human health or the environment.

83. Post-Completion Reservations. Notwithstanding any other provision of this Agreement, the Forest service reserves, and this Agreement is without prejudice to, the right to institute proceedings in this action or in a new action, and/or to issue an administrative order, seeking to compel Respondents to perform further response actions relating to the Site and/or to pay the United States for additional costs of response if, (a) subsequent to Notice of Completion, (1) conditions at the Site, previously unknown to the Forest Service, are discovered, or (2) information, previously unknown to the Forest Service, is received, in whole or in part, and (b) the Forest service determines that these previously unknown conditions or this information together with other relevant information indicate that the Removal Action is not protective of human health or the environment.
84. For purposes of ¶ 82 (Pre-Completion Reservations), the information and the conditions known to the Forest Service will include only that information and those conditions known to Forest service as of the date the Action Memorandum was

signed and set forth in the Action Memorandum for the Site and the administrative record supporting the Action Memorandum. For purposes of ¶ 83 (Post-Completion Reservations), the information and the conditions known to the Forest Service shall include only that information and those conditions known to the Forest Service as of the date of Notice of Completion and set forth in the Action Memorandum, the administrative record supporting the Action Memorandum, the post-Action Memorandum administrative record, or in any information received by the Forest Service pursuant to the requirements of this Agreement prior to Notice of Completion.

85. Respondents covenant not to sue and agree not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Site required to be performed pursuant to this Settlement Agreement, and this Agreement, including, but not limited to:
- a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;
 - b. any claim under the United States Constitution, the Alaska State Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or
 - c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, regarding the Site and this Settlement

Agreement.

86. Nothing in this Settlement Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XXIII. INDEMNIFICATION

87. Respondents agree to indemnify and hold the United States and its agencies, departments, agents and employees harmless from all claims arising from acts or omissions of Respondents or those acting on their behalf, including their officers, employees, agents, contractors, subcontractors, or assigns, in carrying out activities under this Settlement Agreement. Respondents have an affirmative duty to protect from injury and damage the land, property, and other interests of the United States. Damage includes, but is not limited to, fire suppression costs. Respondents shall be liable for damage to all roads and trails of the United States caused by Respondents, or those acting on their behalf, except that liability shall not include reasonable and ordinary wear and tear. In addition, Respondents agree to pay the United States all costs incurred by the United States, including but not limited to attorney's fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on

behalf of Respondents in carrying out activities pursuant to this Settlement Agreement. Neither Respondents nor any such contractor shall be considered an agent of the United States.

XXIV. CONTRIBUTION PROTECTION

88. Nothing in this Settlement Agreement shall be construed to create any rights in or grant any cause of action to, any person not a Party to this Settlement Agreement. The Parties expressly reserve any and all rights (including, but not limited to, any right to contribution), defenses, claims, demands, and causes of action that they may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto. Nothing in this Settlement Agreement diminishes the right of the United States, pursuant to Sections 113(f)(2) and (3) of CERCLA, 42 U.S.C. §§9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).
89. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2) and (h)(4) of CERCLA, 42 U.S.C. §9613(f)(2) and (h)(4), and that Respondents are entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), or as may otherwise be provided by law, for “matters addressed” in this Settlement Agreement. The “matters addressed” in this Settlement Agreement are the Work

and Response Costs. The Parties further agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. §9613(f)(3)(B), pursuant to which Respondents have, as of the Effective Date, resolved their liability to the Forest Service for the Work and Response Costs at the Site.

XXV. OTHER CLAIMS

90. By entering into this Settlement Agreement, the Forest Service assumes no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents. The Forest Service shall not be deemed to be a party to any other contract entered into by Respondents or their contractors to perform the Work required by this Settlement Agreement.

XXVI. NOTICE OF COMPLETION

91. The Removal Action is complete for purposes of this Section when all the Work has been fully performed and the Performance Standards have been achieved. Respondents shall schedule an inspection for purposes of obtaining Notice of Completion after the Final Completion Report. The inspection must be attended by Respondents and the Forest Service and/or their representatives. When the Forest Service determines, after its review of the Final Completion Report, and a Site inspection, that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by

this Settlement Agreement, including but not limited to payment of any required Response Costs, and record retention, the Forest Service will provide written notice to Respondents. If the Forest Service determines that such Work has not been completed in accordance with this Settlement Agreement, the Forest Service will notify Respondents, provide a list of the deficiencies, and require that Respondents correct such deficiencies. Respondents shall correct the deficiencies and submit a modified Final Completion Report in accordance with the Forest Service notice. Subject to Respondents' right to invoke the provisions of Section XVII (Dispute Resolution) of this Settlement Agreement, failure by Respondents to correct the deficiencies and submit a modified Final Completion Report shall be a violation of this Settlement Agreement.

XXVII. FINANCIAL ASSURANCE

92. Within 30 days after the Effective Date, Respondents shall establish and maintain financial security for the benefit of the Forest Service in the amount of \$ 7,237,000 in one or more of the following forms, in order to secure the full and final completion of Work by Respondents:
 - a. a surety bond unconditionally guaranteeing payment and/or performance of the Work;
 - b. one or more irrevocable letters of credit, payable to or at the direction of the Forest Service, issued by financial institution(s) acceptable in all respects to the Forest Service;

- c. a trust fund administered by a trustee acceptable in all respects to the Forest Service;
 - d. a policy of insurance issued by an insurance carrier acceptable in all respects to the Forest Service, which ensures the payment and/or performance of the Work;
 - e. a written guarantee to pay for or perform the Work provided by one or more parent companies of Respondents, or by one or more unrelated companies that have a substantial business relationship with at least one of Respondents, including a demonstration that any such guarantor company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f); and/or
 - f. a demonstration of sufficient financial resources to pay for the Work made by one or more of Respondents, which shall consist of a demonstration that any such Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f).
93. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to the Forest Service, determined in the Forest Service's sole discretion. In the event that the Forest Service determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondents shall, within 30 days after receipt of notice of the Forest Service's determination, obtain and present to the Forest Service for approval one of the other forms of financial assurance listed in Paragraph 92, above. In addition, if at any time the Forest Service notifies Respondents that the anticipated cost of completing the Work has increased, then, within 30 days after such notification, Respondents

shall obtain and present to the Forest Service for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Respondents' inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

94. If Respondents seek to ensure completion of the Work through a guarantee pursuant to Paragraph 92.e or 92.f of this Settlement Agreement, Respondents shall (a) demonstrate to the Forest Service's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (b) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date or such other date as agreed by the Forest Service, to the Forest Service. For the purposes of this Settlement Agreement, wherever 40 C.F.R. Part 264.143(f) references "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates," the dollar amount to be used in the relevant financial test calculations shall be the current cost estimate of \$7,237,000 for the Work at the Site plus any other RCRA, CERCLA, TSCA, or other federal environmental obligations financially assured by the relevant Respondent or guarantor to the Forest Service by means of passing a financial test.
95. If, after the Effective Date, Respondents can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 92 of this Section, Respondents may, on any anniversary date of the

Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondents shall submit a proposal for such reduction to the Forest Service, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from the Forest Service. In the event of a dispute, Respondents may seek dispute resolution pursuant to Section XVII (Dispute Resolution). Respondents may reduce the amount of security in accordance with the Forest Service's written decision resolving the dispute.

96. Respondents may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by the Forest Service, provided that the Forest Service determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondents may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVIII. ATTORNEY GENERAL APPROVAL

97. The Attorney General or his designee has approved the response cost settlement embodied in this Settlement Agreement in accordance with Section 122(h)(1) of CERCLA, 42 U.S.C. § 9622(h)(1).

XXIX. PUBLIC COMMENT

98. This Settlement Agreement shall be subject to a public comment period of at least 30 days pursuant to Section 122(i) of CERCLA, 42 U.S.C. § 9622(i). In accordance with Section 122(i)(3) of CERCLA, 42 U.S.C. § 9622(i)(3), The Forest Service may withdraw or withhold its consent to this Settlement Agreement if comments received disclose facts or considerations that indicate that this Settlement Agreement is inappropriate, improper, or inadequate.

XXX. EFFECTIVE DATE, MODIFICATION AND COMPUTATION OF DUE DATES

99. The Effective Date of this Settlement Agreement shall be the date it has been executed by both Parties, which shall be effective when the Forest Service issues notice to Respondents that public comments received, if any, do not require the Forest Service to modify or withdraw from this Settlement Agreement. This Settlement Agreement may be executed in counterparts.
100. The terms of this Settlement Agreement may be modified only by the written agreement of the Parties. The OSC may make agreed upon modifications to any plan or schedule in the Statement of Work in writing or by oral direction. Any oral modification will be memorialized in writing by the Forest Service promptly, but shall have as its effective date the date of the OSC's oral direction.
101. If Respondents seek permission to deviate from any approved work plan or schedule in the Statement of Work, Respondents' Project Coordinator shall submit a written request to the Forest Service for approval outlining the proposed

modification and its basis. Respondents may not proceed with the requested deviation until receiving oral or written approval from the OSC pursuant to Paragraph 100.

102. References in this Settlement Agreement to specific agency guidance documents or other official agency documents shall include any subsequent revisions or updates to such documents.
103. No informal advice, guidance, suggestion or comment by the Forest Service regarding any document or deliverable submitted by Respondents relieves Respondents of their obligation to obtain the formal written approvals required by this Settlement Agreement or to comply with the requirements of this Settlement Agreement.
104. Unless specifically provided otherwise, calendar days shall be used to compute due dates in this Settlement Agreement. The last day of the period so computed shall be included, unless it is a Saturday, a Sunday, or a Federal holiday, in which event the period runs until the end of the next Working Day.

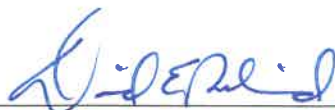
XXXI. MISCELLANEOUS

105. Respondents shall immediately notify the OSC of any and all threatened and endangered species encountered on the Site and shall take no actions which might endanger said species or their habitat unless otherwise instructed by the OSC. Formal or informal consultation provisions shall be the responsibilities of the Respondents and shall be included in the Final Completion Report.

106. If, while implementing the terms of this Settlement Agreement, Respondents discover any objects of historic or scientific interest, they shall notify the OSC and leave such discoveries intact until and unless otherwise instructed by the OSC. For the purposes of this Section, objects of historic or scientific interest include, but are not limited to, historic or prehistoric ruins, fossils, or artifacts. Compliance with any protective and mitigative measures specified by the OSC shall be Respondents' responsibility.

IT IS SO AGREED

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE ALASKA REGION

By: 

Name: David E. Schmid
Title: Regional Forester

Date: 01/17/2020

UNITED STATES DEPARTMENT OF JUSTICE

BY: _____
Nathaniel Douglas
Deputy Section Chief
United States Department of Justice
Environmental Enforcement Section
P.O. Box 7611
Washington, DC 20044-7611

Date: _____

NEWMONT USA LIMITED

By: _____

Name: Nancy Lipson
Title: Vice President

Date: _____

IT IS SO AGREED

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE ALASKA REGION

By: _____

Name: David E. Schmid
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Date: _____

UNITED STATES DEPARTMENT OF JUSTICE

BY: 
Nathaniel Douglas
Deputy Section Chief
United States Department of Justice
Environmental Enforcement Section
P.O. Box 7611
Washington, DC 20044-7611

Date: 3-9-2020

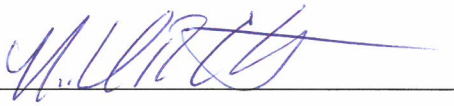
NEWMONT USA LIMITED

By: 

Name: Nancy Lipson
Title: Vice President

Date: 1-2-2020

DAWN MINING COMPANY

By: 

Name: Nicholas Cottis

Title: Vice President

Date: June 7, 2020

APPENDIX A
ACTION MEMORANDUM

NON-TIME-CRITICAL REMOVAL ACTION MEMORANDUM

SUBJECT: Request for Approval of Potentially Responsible Party (PRP)-Lead Removal Action at the Ross-Adams Mine Site, Prince of Wales Island, Alaska

FROM: Matthew D. York, On-Scene Coordinator (OSC) – Region 10

TO: Sam Carlson, Director of Engineering & Information Management – Region 10

THROUGH: Julie Creed, Environmental Engineering Program Lead
Matt Anderson, Craig District Ranger, Tongass National Forest
Earl Stewart, Forest Supervisor, Tongass National Forest

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed PRP-lead removal action described herein to mitigate potential threats to human health and the environment posed by radioactive hazardous substances at the Ross-Adams Mine Site (Site). The Site is a former uranium mine located in the Tongass National Forest near the southern end of Prince of Wales (POW) Island, Alaska.

The proposed removal of hazardous substances would be undertaken pursuant to Section 104(a)(1) of CERCLA, 42 U.S.C. 9604(a)(1) as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300.415(b)(2), and pursuant to the authority found in Executive Order 12580 and 7 CFR § 2.60(a)(39). The bases for the recommended action under the criteria of 40 C.F.R. § 300.415(b)(2) are:

- (i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;
- (iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate;
- (v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

On April 17, 2009, Newmont USA Limited and Dawn Mining Company LLC entered into an [Administrative Settlement Agreement and Order on Consent](#) (ASAOC) with the USDA Forest Service (USFS) to perform an Engineering Evaluation/Cost Analysis (EE/CA) for the Site. The recommended removal action(s) in this Action Memorandum reflect the recommended removal action alternatives from the EE/CA.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal Site Evaluation

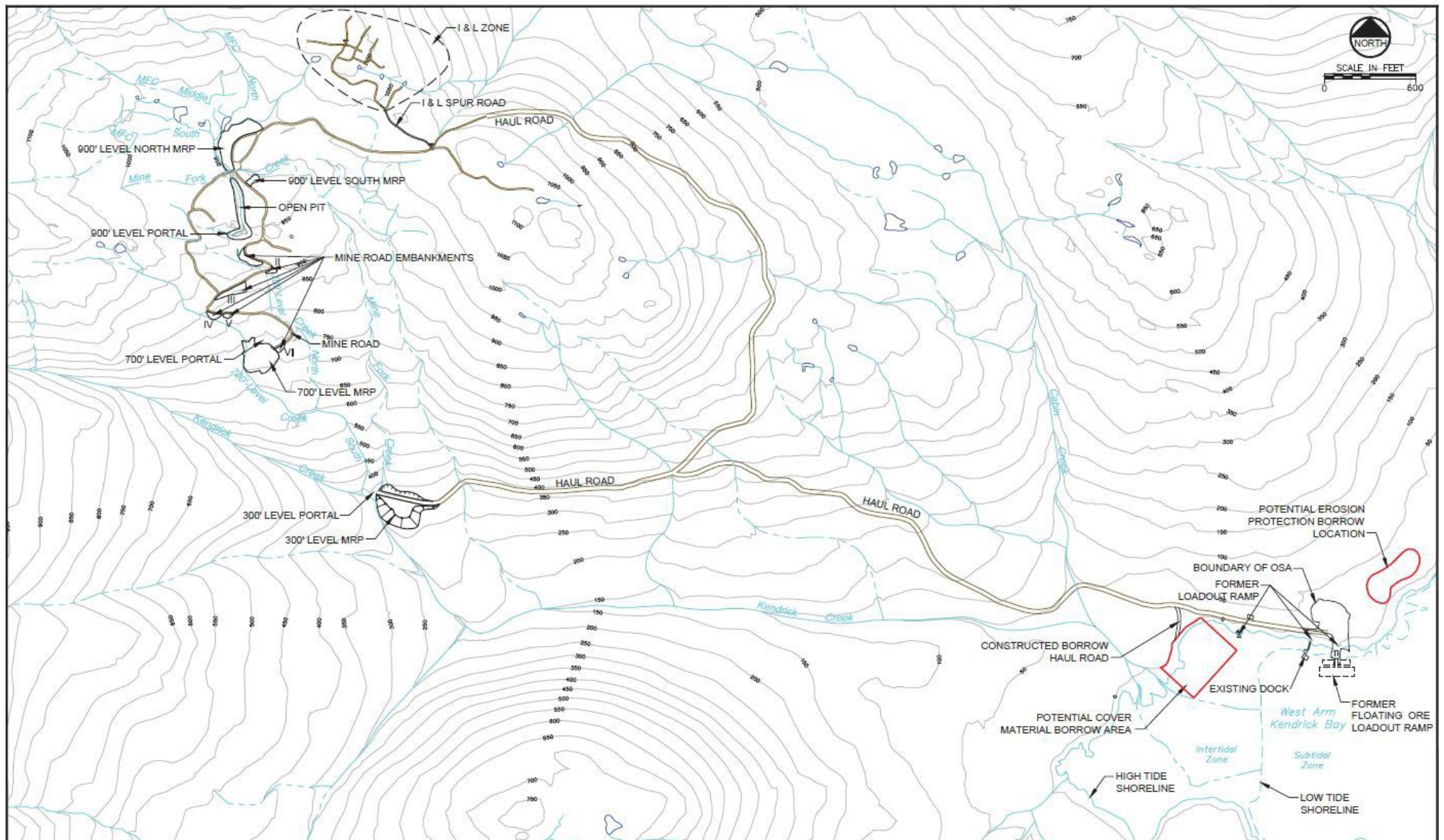
The Ross-Adams ore deposit outcropped at an elevation of approximately 970 feet on the south-eastern flank of Bokan Mountain. The uranium ore deposit was originally discovered by aerial survey; which is indicative of the high level of background radiation exposed at the surface. The mine was initially developed by open-pit mining in 1957 and later by underground operations from three portals. The mine has three major surface expressions, named after their approximate elevations: the “900-Foot Level”, the “700-Foot Level” and the “300-Foot Level.” After the surficial deposit was mined, ore was mined in the early 1960s by driving an approximately 500 foot long tunnel at the 700-Foot Level to intersect the ore deposit, with a raise connecting it to the Open Pit. An additional phase of underground mining occurred in 1971 by driving the 300- Foot Level adit tunnel. Mine rock, including rock developed in driving the 700-Foot Level and 300-Foot Level tunnels, was placed near the portals at all levels. Ore produced from all levels was transported via haul roads to ore staging areas and barge loading docks on the north shore of the West Arm of Kendrick Bay. All ore was shipped off-site for processing. No milling was conducted at the Site that would have generated tailings or other process materials.

The Bokan Mountain Intrusive Complex (BIC) (in which the Ross-Adams deposit is located) is comprised of rare rock types that are unique in Southeast Alaska. The BIC includes uranium, thorium and rare earth element mineralization. At the present time, active exploration for deposits of rare earth elements is occurring in the Kendrick Creek watershed under a USFS permit. More than 30 uranium and rare earth element occurrences have been identified at Bokan Mountain that are related to the BIC. The mineralization of the BIC rocks with uranium and thorium results in a radioactive signature distinctive from that of the surrounding non-mineralized rocks. The I&L Zone, which is a nearby smaller and lower grade deposit immediately to the northwest of the 900-Foot Level, represents similar conditions that potentially existed at the 900-Foot Level prior to mining. The I&L Zone represents a group of radioactive mineral prospects on the east flank of Bokan Mountain northwest of the Ross-Adams deposit, with ground surface exposed mineralization. Mineral exploration has been conducted on the I&L Zone, but it has never been mined and is not part of the Site as defined in the ASAOC.

The Site includes the mine, haul roads, ore staging area (OSA), former barge loading area, and downstream potentially impacted areas including the Kendrick Creek delta. An access road between the 900-Foot Level haul road and the I&L Zone was constructed at some point during regional exploration, using mine rock in some areas; the lower portion of the I&L (Spur) access road is included in the Site definition. (See map on the following page)

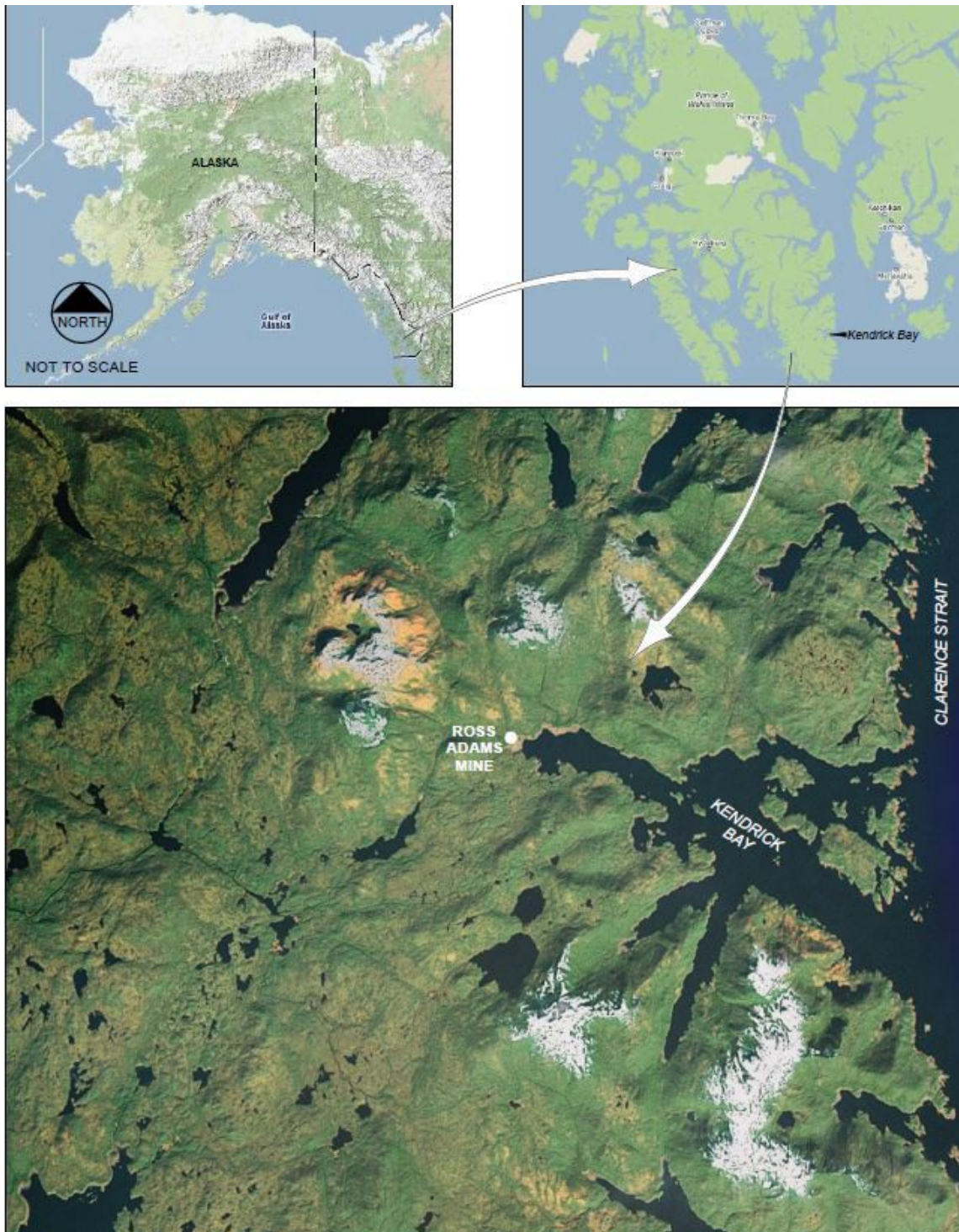
Additional Site evaluation(s) and characterization activities at the Ross-Adams Site are outlined in the following documents:

- [Preliminary Assessment/Site Inspection](#) (PA/SI) Report – Ross Adams Uranium Mine (Kent & Sullivan Inc., 2004)
- [Final Site Characterization Report](#) – (SCR) Ross Adams Mine Site (Tetra Tech, Inc, 2010)
- [Engineering Evaluation/Cost Analysis Ross-Adams mine Site](#) (Worthington Miller Environmental, LLC, 2015)



2. Physical Location

The Site is approximately 38 air miles southwest of Ketchikan, Alaska. The nearest towns are Metlakatla, 28 miles to the northeast across Clarence Strait and Hydaburg, 33 miles to the northwest on the western side of POW Island. The Site is located within the semi-remote recreational area of the Tongass National Forest within the Craig Ranger District. While access is unrestricted, the Site is remote and only accessible by float plane (or helo), boat, or overland hiking through many miles of trail-less, rugged terrain. A floating dock at the location of one of the historic barge loading docks remains functional. There are no established USFS roads or hiking trails connecting the Site to other communities or roads.



Site terrain varies from moderate slopes along the margin of the West Arm of Kendrick Bay shoreline and around the OSA to rugged, steep slopes with dense forest cover and incised stream channels that restrict access even by foot. Soil conditions at the Site are also variable, ranging from barren rock, rock rubble and thin patches of poorly drained soils at higher elevations (such as at the 700-Foot and 900-Foot Levels) to moderately deep, and well drained organic soil with forest litter cover at lower elevations.

Kendrick Creek and its main tributaries, Mine Fork Creek and Cabin Creek, drain the eastern side of Bokan Mountain. Mine Fork Creek originates above the 900-Foot Level and joins with Kendrick Creek at the 300-Foot Level. The 700-Foot Level Creek, a minor tributary to Kendrick Creek, originates near the 700-Foot Level. Kendrick Creek flows to the east into the West Arm of Kendrick Bay. Cabin Creek joins with Kendrick Creek near the West Arm of Kendrick Bay. Kendrick Bay is a five-mile long fjord that opens to Clarence Strait on the east side of POW Island. Typical of fjords in Southeast Alaska, Kendrick Bay is characterized by a steep, narrow intertidal zone between the low and high water lines, and a subtidal zone below the low water line.

The climate of the area is maritime due to the close proximity of the Pacific Ocean. The area experiences frequent and relatively heavy precipitation, with October through December usually being the wettest months. The annual total precipitation averages over 100 inches, with snow often occurring at higher elevations.

The Site is located within Alaska's Southeast Ecoregion and is comprised of subalpine, old growth western hemlock-spruce forest, marine intertidal, and marine subtidal habitats. No threatened or endangered species are expected at the Site. The subalpine habitat is characterized by barren rock and plants adapted to the colder and windier environment. Subalpine vegetation includes mountain hemlock, yellow cedar, and the dwarf form of the shore pine. Wildlife in the subalpine zone includes Sitka black-tailed deer, black bear, ptarmigan, and songbirds such as thrush and dark-eyed junco. The old-growth habitat is characteristically dominated by western hemlock and Sitka-spruce. Other common vegetation includes red alder, western red cedar, Devil's club, and a variety of ferns and berries. The old growth forest supports a variety of songbirds as well as mammals such as the Sitka black-tailed deer, black bear, and mink. The marine intertidal zone is bounded by the low and high tides and occupies approximately 27 acres at the head of the West Arm of Kendrick Bay. The intertidal vegetative community includes many species of plants and algae including rockweed, eelgrass, sugar kelp, and bull kelp. Marine and estuarine invertebrates are common and include a variety of clams, crabs, and starfish, as well as chitons, worms, amphipods, isopods, and sea cucumbers. Birds using the intertidal zone include gulls, shorebirds, waterfowl, crows, belted kingfisher, and bald eagle. Mink may be present in the intertidal zone and black bear and Sitka black-tailed deer inhabit the perimeter of this zone. Many of these plant and animal species extend into the contiguous subtidal waters. Wildlife in the subtidal zone includes sea otter, harbor seal, gulls, loons and a variety of fish and invertebrates.

The approximate geographic location of the Site is: 54°54'33.00"N and 132° 8'27.00"W.

3. Site Characteristics

Current Use of the Site: The most recent use of the Site is for mineral exploration on mining claims held by [UCore](#). Ucore has been conducting exploration and development studies at the Bokan site recently; focusing on the Dotson Ridge rare earth mineralized vein system. Support for the exploration and development work has utilized the float plane dock, the beach landing ramp, and the main access/haul road to the existing core logging facility and the top of the vein system only. The OSA, the mine portal areas, the access roads to the mine portals and the open pit have not been utilized. Housing for workers during these activities has been restricted to an accommodation barge moored on the south side of Kendrick Bay. An emergency shelter has been provided in the existing core logging facility for environmental study personnel who may become stranded at the site. The proposed camp, permitted in a recent Environmental Assessment has not been constructed. In the past, the Dotson Family ([claimant](#)) conducted mineral exploration and occasionally stayed in the cabin located approximately 200 yards from the OSA. Per information presented in the 2004 PA/SI, the Dotsons used the cabin seasonally for varying amounts of time. The cabin is no longer permitted and is slated to be removed at the time of the CERCLA removal action. The PA/SI stated that the Dotson family members were present during the 2004 Site investigation and one family member was present during Tetra Tech sampling in September 2009. The Site is designated for mineral exploration or timber production as permitted by the USFS. Other current uses of the Site could be mineral exploration workers, an occasional area visitor, or a USFS worker at the Site on a temporary basis for the purposes of wildlife or biota surveys, or other evaluations of the forest land.

Commercial fishing can occur in Kendrick Bay and an aquaculture facility is located in the South Arm of Kendrick Bay. A report by the Alaska Department of Natural Resources indicated that intense commercial harvest was occurring at the entrance to Kendrick Bay. Commercial sea cucumber harvesting, if conducted in the West Arm, would occur on a three-year rotational basis. However, marine waters at the head of the West Arm are relatively unproductive because of restricted circulation.

Future Site Use: The USFS Master Plan for the Tongass National Forest has designated the Site for mineral exploration or timber production, as well as being semi-remote recreational land. If the land is used for timber production purposes, it is unlikely that recreational visitors would simultaneously use the land, both for safety reasons and desirability of recreational experience. The USFS Master Plan for the Tongass does not include any other type of development for this Site. Based on the Master Plan, area visitors, mineral exploration workers, and USFS workers were selected as potential future receptors.

4. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

Site observations and the results of gamma surveys and soil sampling indicate that mine-affected material in specific locations extends beyond the physically defined boundaries of several mine features, particularly at the 300-Foot Level and OSA. Visual inspection and gamma survey results indicate that mine rock exists in discrete locations near the toe and adjoining the western boundary of the 300-Foot Level mine rock pile. Scattered mine rock also exists in discrete areas beyond the physical footprints of the mine rock piles at the 700-Foot and 900-Foot Levels. In addition to the mine rock embankments identified for the mine road between the 700-Foot and 900-Foot Levels,

gamma survey results indicate that scattered mine rock or ore spilled during hauling may exist on the surface of the mine road. At the OSA, the results of the gamma survey indicate that mine-affected materials exists in defined areas beyond the surveyed physical boundary of the OSA. Additionally, the presence of spilled ore rock likely extends from the loading ramps to the immediate vicinity surrounding the former floating dock within the subtidal zone. Segments of the haul roads exhibiting elevated gamma exposure rates are the result of ore rock spilled on the road surface during hauling to the OSA and probable use of mine rock for repair and maintenance of specific road segments.

Miscellaneous solid wastes and petroleum products are also present at the Site. As described in the [SCR](#), the miscellaneous solid wastes and petroleum products, include abandoned vehicles, empty and partially filled 55-gallon drums, two above-ground petroleum storage tanks, collapsed buildings, drill core, and other materials.

Radon and direct gamma radiation contribute the major portion of the estimated theoretical risk to occupational and recreational users of the Site, with inhalation of radon decay products accounting for approximately 90 to 95 percent of the potential radiation risk. Of particular note, risks to human receptors from radiation exposures due to background conditions in the naturally mineralized area exceed acceptable risk levels. Therefore, the “release” is focused on the identified areas and volumes denoted below in the following tables:

Source	Estimated Area (SY)	Estimated Volume (CY)	Comments and Assumptions
900-Foot Level			
North Mine Rock Pile	4,693	8,604	Surveyed/Ucore DTM, 5.5' Avg. Thickness
South Mine Rock Pile	588	588	Surveyed/Ucore DTM, 3' Avg. Thickness
Subtotal	5,281	9,192	
900-Foot Level Adjusted Subtotal		10,111	Volume inflated 10% for lateral variation
700-Foot Level			
700-Foot Level Mine Rock Pile	4,413	7,355	Surveyed/Ucore DTM, 5' Avg. Thickness
700-Foot Level Adjusted Subtotal		8,091	Volume inflated 10% for lateral variation
Mine Road Embankments 900 Ft Level to 700 Ft Level			
I	630	945	Surveyed/Ucore DTM, 4.5' Avg. Thickness
II	209	313	Surveyed/Ucore DTM, 4.5' Avg. Thickness
III	910	910	Surveyed/Ucore DTM, 3' Avg. Thickness
IV	269	448	Surveyed/Ucore DTM, 5' Avg. Thickness
V	149	248	Surveyed/Ucore DTM, 5' Avg. Thickness
VI	161	161	Surveyed/Ucore DTM, 3' Avg. Thickness
Subtotal	2,328	3,025	
Adjusted Subtotal		3,328	Volume inflated 10% for lateral variation
700-Foot/900-Foot Levels Subtotal	12,022	21,530	
300-Foot Level			
300-Foot Level Mine Rock Pile	5,929	28,854	KSI (2004) Fig. 9 & Ucore (2009) DTM
300-Foot Level Adit Development Rock		13,724	13' x 16' x 1,300' plus 8' x 8' x 600', 20% bulking factor

Subtotal		28,854	
300-Foot Level Adjusted Subtotal		31,739	Volume inflated 10% for lateral variation
Ore Staging Area			
OSA	6,000	3,000	2009 Survey/Ucore DTM, Assumed 1.5' Thick organic mat
OSA	6,758	4,500	2009 Survey/Ucore DTM, Assumed 2' cont. soil
OSA Subtotal	6,758	7,500	
OSA Adjusted Subtotal		8,250	Volume inflated 10% for lateral variation
Scattered Ore Rock in Intertidal Area		20	Estimated based on dock plots from Tetra Tech, 2010

Summary of Volumes of Mine Affected Materials (Continued)

Source	Estimated Area (SY)	Estimated Volume (CY)	Comments and Assumptions
Haul Road			
OSA to 300-Foot Level			
Section 1	1,544	514	Based on Gamma survey, 1' thick
Section 2	510	170	Based on Gamma survey, 1' thick
Section 3	657	219	Based on Gamma survey, 1' thick
Section 4	312	104	Based on Gamma survey, 1' thick
Section 5	99	33	Based on Gamma survey, 1' thick
Section 6	306	102	Based on Gamma survey, 1' thick
Section 7	466	155	Based on Gamma survey, 1' thick
Section 8	255	85	Based on Gamma survey, 1' thick
Section 9	215	71	Based on Gamma survey, 1' thick
Section 10	435	145	Based on Gamma survey, 1' thick
Subtotal	4,799	1,598	
Intersect. to 900-ft lvl			
Section 1	163	54	Based on Gamma survey, 1' thick
Section 2	625	208	Based on Gamma survey, 1' thick
Section 3	444	148	Based on Gamma survey, 1' thick
Section 4	684	228	Based on Gamma survey, 1' thick
Section 5	619	206	Based on Gamma survey, 1' thick
Section 6	150	50	Based on Gamma survey, 1' thick
Section 7	365	121	Based on Gamma survey, 1' thick
Section 8	97	32	Based on Gamma survey, 1' thick
Section 9	1,215	404	Based on Gamma survey, 1' thick
Subtotal	4,362	1,451	
Total Haul Road Material Volume	9.161	3,049	
I & L Spur	1,028	1,200	Based on Gamma survey, approx. 3.5' thick
Total Mine Affected Materials		65,788	900-Foot Level Mine Rock Piles (10,111 CY), 700-Foot Level Mine Rock Pile (8,091 CY), Mine Road Embankments (3,328 CY), 300-Foot Level Mine Rock Pile (31,739 CY), OSA (8,250 CY), Scattered Ore (20 CY), Haul Roads (3,049 CY) and I&L Spur (1,200 CY)

The [SCR](#), [Human Health Risk Assessment](#) (HHRA), and [Screening Level Ecological Risk Assessment](#) (SLERA) indicate that the influences of mining activities at the Site are limited to the vicinity of the mine feature areas. These mine features are:

- The open pit;
- The mine portals (mine tunnel openings) at the 900-Foot, 700-Foot and 300-Foot Levels, and the 900-Foot Level air vent shaft;
- The mine rock piles at the 900-Foot, 700-Foot and 300-Foot Levels, and adjacent soils;
- Specific segments of the haul roads, the mine road and embankments (between the 700-Foot and 900-Foot Levels), and the I&L Spur road;
- The Ore Staging Area;
- The rock loadout ramps due to ore spilled during former ore loading operations;
- The drainage from the 300-Foot Level portal.

Exposure pathways contributing the majority of potential risk to occupational and recreational users of the Site consist of external exposure to direct gamma radiation from mine rock and inhalation of radon decay products generated from mine rock and mine openings. Human health risks associated with background radiation exposures in the mineralized area also exceed established risk criteria; the removal action alternatives would not reduce exposure to the natural mineralized background radiation. Exposure pathways contributing potential risk for terrestrial plants, terrestrial invertebrates, and terrestrial wildlife consist of direct contact, ingestion, and food-chain exposure to a handful of metals and radionuclides in mine rock and localized areas of mine-affected soil.

The 300-Foot Level adit drains the entire Ross-Adams underground mine as well as surface water captured in the open pit. Mine water drainage from the 300-Foot Level portal flows to Mine Fork Creek a short distance (approximately 100 feet) upstream of its confluence with Kendrick Creek. Kendrick Creek subsequently flows along the 300-Foot Level mine rock pile. Drainage from the 300-Foot Level portal is believed to occur year-round. As presented in the [SCR](#), flow rates measured from the portal during the ESI sampling events in 2009 increased from 18 gpm during the dry season (June and July) to 91 gpm during the wet season (September) due to increased precipitation. Water quality of the drainage improves during the high flow period, which is characteristic of the non-reactive, non-acid generating, nature of the ore body and host rock geology. Water samples collected from the 300-Foot Level portal drainage had the highest metal and radionuclide concentrations of surface water quality samples collected at the Site. The drainage from the 300-Foot Level portal represents an exposure medium through which human and ecological receptors (terrestrial and freshwater aquatic) could be directly exposed to certain metals and radionuclide constituents through ingestion, direct contact, and food chain pathways. Using the maximum concentrations detected in the drainage from the 300-Foot Level portal, the total cumulative risk estimated for the area visitor from direct ingestion of radionuclides in surface water is greater than the defined acceptable risk level. The cumulative exposure to radium in surface water and stream sediments at the 300-Foot Level also represents a potential risk for riparian animals, with surface water of the 300-Foot Level portal accounting for the majority of the cumulative risk. Potential human health or ecological risks from ingestion or other exposure to waters in Kendrick Creek are projected to be substantially lower and within defined acceptable risk levels. Water quality in the 300-Foot Level portal generally meets Alaska chronic freshwater

criteria. Table 1 provides the range in metal and radionuclide concentrations from samples collected from the portal drainage during the 2009 ESI and a comparison to Alaska chronic freshwater criteria. All of the samples from the 300-Foot Level portal drainage met Alaska chronic freshwater criteria, except for the zinc concentration in one sample.

Table 1. Range in Metal and Radionuclide Concentrations of 300-Foot Level Portal Drainage

Parameter	Alaska WQC	300-Foot Level Portal Maximum
Aluminum	87	49 - 83
Arsenic	150	<10
Barium	na	21 - 28
Beryllium	na	0.17
Cadmium	0.1	0.041 - 0.075
Chromium	23	0.64 - <1.0
Copper	2.9	0.43 - 0.56
Iron	1000	11 - 39
Lead	0.54	0.072 - 0.28
Manganese	na	70 - 100
Mercury	0.77	0.0003 - <0.10
Molybdenum	na	4.3 - 6.2
Nickel	16	<0.5 - <5
Selenium	5	0.072 - <1
Thallium	na	0.0059 - 0.013
Uranium	na	110 - 240
Zinc	37	24 - 38
Total Thorium	na	0.39 - 1.68
Radium-226	na	4.3 - 7.8
Radium-228	na	3.4 - 7.2
Lead-210	na	<0.1 - 1.81

1. Metal concentrations in µg/L; radionuclide concentrations in pCi/L
2. Alaska Water Quality Criteria (WQC) shown are freshwater chronic values
3. na = criteria not available

Based on data presented in the [SCR](#), concentrations of metals and radionuclides in Kendrick Creek are higher adjacent to the 300-Foot Level mine rock pile, primarily due to the drainage from the 300-Foot Level portal drainage, and decrease downstream. Due to the steep gradient, the reach of Kendrick Creek to below the 300-Foot Level is considered negligible spawning and rearing habitat for all salmonids. In this reach of Kendrick Creek, metal concentrations (except aluminum) remain below Alaska chronic freshwater criteria. Although exceeding the criteria, aluminum concentrations in this reach of Kendrick Creek were less than the range of concentrations at background surface water locations. Concentrations of metals and radionuclides continue to decrease in the lower reaches of Kendrick Creek where habitat is physically more amenable to salmonid spawning and rearing, and remain below Alaska chronic freshwater criteria and/or background surface water quality. Although Kendrick Creek is not used as a drinking water supply, water quality in Kendrick Creek also meets Alaska drinking water standards.

5. National Priorities List (NPL) Status

The Ross-Adams Mine Site is not and has not been listed on the NPL.

6. Maps, Pictures and other Graphic Representations

Maps have been shared earlier in this document. Pictures and a graphic representation of an aerial radiological survey are included in the Supplemental Documents section.

B. Other Actions to Date

1. Previous Actions

There have been no previous CERCLA removal actions performed at the site.

2. Current Actions

There are no current removal actions being implemented at the Site.

C. Federal, State and Local Authorities Role

1. Federal, State and Local Actions to Date

The primary regulatory agency responsible for oversight of this removal action is the USFS. There is an established commitment for coordination with the Environmental Protection Agency (EPA) and the Alaska Department of Environmental Conservation (ADEC). The USFS will continue to engage collaborative participation of EPA and ADEC throughout this project.

The previous Region 10 On-Scene Coordinator held a public open-house at the Klawock School on April 28, 2015 from 7:00-9:00 PM and presented the EE/CA and the risk assessments as prelude to the 30 day public review and comment period commencing May 1, 2015. No written comments were received. A presentation was also given at the Prince of Wales Island-Wide Mining Symposium, sponsored by the Organized Village of Kasaan, in Klawock on April 29, 2015.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare or the Environment

The nature of the Site is such that risks to human health were assessed for non-radionuclide (chemical) exposures and radionuclide exposure through direct contact pathways as well as risks from inhalation of radon decay products, and direct gamma radiation exposures. Receptors of concern were identified as hypothetical mineral exploration worker, USFS worker, area visitor, and Subsistence receptor. Media of concern are soil, radon in air, and gamma radiation. The bases for the recommended removal action under the criteria of 40 C.F.R. § 300.415(b)(2) are:

- (i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.
- (iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate;
- (v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

IV. ENDANGERMENT DETERMINATION

Actual releases or threatened releases from this Site, if not addressed by implementing the response action proposed in this Removal Action Memorandum, may present an imminent and substantial endangerment to public health, welfare or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

Based on the results of the [Human Health Risk Assessment](#) and the [Screening-Level Ecological Risk Assessment](#) and the evaluation of 'Applicable or Relevant and Appropriate Requirements (ARARs) the following Removal Action Objectives (RAOs) were defined:

- Reduce risk for recreational users and occupational workers from exposure to direct gamma radiation from mine rock and mine openings;
- Reduce risk for recreational users and occupational workers from exposure due to inhalation of radon decay products from mine rock and mine openings;
- Reduce risk for recreational users from exposure due to potential ingestion of soil from the mine rock piles and potential ingestion of surface water drainage from the 300-Foot Level portal;
- Reduce or eliminate safety hazards related to the mine openings and access to the underground mine workings;
- Reduce risk or eliminate exposure pathways for terrestrial plants, terrestrial invertebrates, terrestrial wildlife from exposure to metals and radionuclides defined as constituents of concern in mine rock and soil associated with mine-affected areas via direct contact, ingestion, and food-chain exposure;
- Reduce risk or eliminate exposure pathways for riparian animals from exposure to radium in surface water at the 700-Foot/900-Foot Levels and the drainage from the 300-Foot Level portal.

Additionally, the following RAOs were identified based on land-use management plans for the Site and vicinity:

- Minimize disturbance to existing undisturbed areas;
- Minimize reliance on long-term active maintenance.

Quantitative preliminary removal action goals (RAGs) were established to address these RAOs. For evaluating the effectiveness of the removal action, these goals are expressed in terms of reducing the identified risks or eliminating the exposure pathways to human and ecological receptors. The overall goal of the removal action is to reduce human and ecological risk that is attributable to the mine-affected areas to an acceptable level. The primary goals are to:

- Reduce risk for recreational users and occupational workers from exposure to radon inhalation and direct gamma radiation attributable to mine rock and mine openings above background on a Site-wide basis to below the EPA excess dose criterion of 15 mrem/year or a cancer risk of less than 1E-5 above background.

- Reduce risks for terrestrial plants, invertebrates, and wildlife from exposure to metals and radionuclides defined as constituents of concern in mine rock and soil in mine-affected areas, and for riparian animals from exposure to radium in surface water to an acceptable risk-based level (defined as a HQ less than one) above background.

CERCLA cleanup levels are typically derived from risk-based evaluations or are established consistent with background concentrations where those concentrations exceed risk-based levels. CERCLA cleanup levels are not established at levels below background. Natural background exposure rates were assessed at the Site for non-mineralized areas that were not affected by historic mining activities. Evaluation of gamma survey data measured at the Site, as described in the [SCR](#), established that background gamma exposure rates range up to 25 micro-roentgens per hour ($\mu\text{R/hr}$) in undisturbed nonmineralized areas. The Removal Action Control and Confirmation Plan (Senes, 2013) proposed a gamma exposure rate cleanup goal of 20 $\mu\text{R/hr}$ for the mining-impacted non-mineralized areas, unless a different goal is supported by additional gamma survey data obtained during the removal action. Any requested change in the estimated background gamma cleanup goal would be documented and submitted to the USFS for review and approval prior to completion of removal action activities. The measured gamma exposure rate of 20 $\mu\text{R/hr}$ is instrument specific and corresponds to a direct gamma background dose rate of 8.4 μrem per hour. Gamma radiation at the Site is strongly correlated with respective activity concentrations of gamma emitting radionuclide decay products, most importantly with radium-226 (Ra-226) and radium-228 (Ra-228) in surface soils. Therefore, the gamma exposure rate cleanup goal will address Ra-226 and Ra-228 activity concentrations in surface soils. Neither EPA nor ADEC have promulgated radiation standards that are applicable or relevant and appropriate for cleanup of mine rock and mine-affected materials at the Site. EPA guidance requires that cleanup of radioactively contaminated CERCLA sites should generally achieve a cumulative 1E-4 to 1E-6 risk range based on the reasonable maximum exposure or to background radiation levels, whichever is higher. ADEC has defined a target risk level of 1E-5 as being protective for determining whether cleanup is necessary and in developing cleanup criteria. Exposure to background gamma exposure rates in the non-mineralized areas of the Site may exceed the defined risk range. Lifetime risk from exposure to average background radiation in the United States also exceeds the defined risk range, including the risk from direct radiation alone (terrestrial and cosmic radiation). Consequently, it is not possible to meet the EPA or ADEC risk-based criteria without subtracting the contribution from background radiation.

As described above, mine rock and mine-affected materials in the non-mineralized areas of the Site would be cleaned-up to achieve a gamma exposure rate of 20 $\mu\text{R/hr}$, unless a different goal is supported by additional background gamma survey data obtained during the removal action. The risk from radiation exposure to mine-affected, non-mineralized areas following cleanup would be indistinguishable from that of background within the removal action boundaries. Therefore, cleanup of the mine-affected areas to natural background levels is by definition protective of human health and consistent with CERCLA guidance.

Because of the characteristic appearance of areas disturbed by mining, the contrasting topographic and natural settings in which these areas are located, and the visually distinct appearance and physical characteristics of mine rock, visual observation will be used as the primary means to control excavation of mine rock. Visual indications will be especially crucial in areas of natural mineralization known to exist in the vicinity of the 900-Foot and 700-Foot Levels at the Site. Gamma radiation measurements will be used to support visual assessments and removal decisions based on visual evidence. In non-mineralized areas, gamma radiation measurements will be a more effective, and thus more important, tool for excavation control.

1. Proposed Action Description

The EE/CA identified, evaluated, and screened potentially applicable technologies for reducing identified human health and ecological risks posed by the mine-affected areas of the Site. The applicable technologies were then assembled into candidate removal action alternatives. Five removal action alternatives for mine rock areas and four removal actions for mine portals were evaluated. These alternatives represent well established and proven technologies that have been implemented at similar uranium mine sites to address similar conditions.

The removal action alternatives for mine rock include:

- Alternative M-1 – No Action
- Alternative M-2 – In-Place Stabilization with Stormwater and Institutional Controls
- Alternative M-3 – In-Place Covering of Mine Rock Piles
- Alternative M-4 – Excavation, Consolidation and Cover at Mine Affected Areas
- Alternative M-5 – Excavation, Consolidation and Cover at Open Pit Repository

The removal action alternatives for mine portals include:

- Alternative P-1 – No Action
- Alternative P-2 – Close Upper Mine Openings with 300-Foot Level Portal Gate
- Alternative P-3 – Close Upper Mine Openings with 300-Foot Level Portal Rock Backfill Closure
- Alternative P-4 – Close Upper Mine Openings and 300-Foot Level Portal Concrete Bulkhead

Based on the detailed and comparative analysis of the removal action alternatives, the combination of *Mine Rock Alternative M-5* and *Portal Alternative P-4* best satisfies the evaluation criteria. Both the mine rock and the mine portal alternatives are protective of human health and the environment in reducing or eliminating the exposure pathways and risks. Both alternatives are effective in reducing incremental radiation risks due to external gamma radiation and inhalation of radon decay products associated with mine rock and the inhalation of radon decay products associated with the mine openings. The alternatives also comply with State and Federal Applicable or Relevant and Appropriate Requirements (ARARs). However, the alternatives will not eliminate the Site-wide risk to human health, as radiation risks from background gamma radiation and radon in the naturally mineralized area exceed the acceptable human health risk and dose criteria.

Mine Rock Alternative M-5 includes of the following components:

- Removal of ore rock within the intertidal zone associated with former loading ramps and ore loading operations and consolidation at the Open Pit Repository.
- Removal of the miscellaneous solid waste and debris and transport for off-site recycling and disposal, except for drill core that would be consolidated at the Open Pit Repository;
- Excavating, transporting and consolidating the mine-affected material from the OSA, and the mine rock piles from the 300-Foot Level; 700-Foot Level, and 900-Foot Level (North and South) at the Open Pit Repository;
- Excavating and consolidating the I&L Spur road materials in the Open Pit and closing the road;
- Removing and consolidating the identified mine road (between the 700-Foot and 900-Foot Levels) surface and embankment material in the Open Pit and closing the mine road;
- Excavating the mine rock from the identified segments of the haul road and consolidating the material in the Open Pit;
- Placing a synthetic geomembrane barrier and 2-foot thick earthen cover on the mine rock materials consolidated at the Open Pit Repository from the on-site borrow source and constructing stormwater controls to protect the covered areas; and
- Implementing institutional controls, access controls, and/or land use restrictions to protect the integrity of the removal action.

The primary factors that resulted in selection of *Mine Rock Alternative M-5* as the recommended Removal Action included:

- Will be effective in achieving the RAOs for the removal action areas, including reducing the predicted mine rock incremental dose to less than 15 mrem/year and the lifetime risk to less than 1E-5 above background for occupational workers and recreational users of the Site;
- Will provide permanent containment of the mine-affected materials by consolidating mine rock and mine-affected materials in the Open Pit Repository, reducing the overall mine rock footprint and requiring less cover material;
- Will remove the OSA materials near the shoreline of the West Arm of Kendrick Bay, significantly reducing human health exposures to gamma radiation and radon for Site visitors and occupational workers;
- Will remove the 300-Foot Level mine rock pile located in the relatively steep area adjacent to Kendrick Creek, eliminating potential concerns with the long-term geotechnical and erosional stability and permanence of the 300-Foot Level mine rock pile;
- Will return all mine rock and mine-affected materials to the Open Pit Repository where the characteristics of the materials are consistent with the naturally mineralized area and where the flatter topography is more suitable for long-term mine rock containment and cover stability;
- Will reduce the gamma and radon emanation at the cover surface of the Open Pit Repository by placing the lower gamma activity material from the 300-Foot Level mine rock pile over the higher gamma activity mine rock;
- Will require closure of the I&L Spur road, the haul road to the 300-Foot Level, and the mine road from the 700-Foot Level to the 900-Foot Level, reducing human access to the 300-Foot and 700-Foot Levels;

- Will require that institutional and access controls and/or land use restrictions be implemented at only one isolated location, where access to the 900- Foot Level is already limited compared to other areas of the Site;
- Will consolidate mine rock and place a cover on the Open Pit, reducing the inflow of water into the underground mine via the 900-Foot Level portal; thereby reducing drainage from the 300-Foot Level portal;

Portal Alternative P-4 consists of the following components:

- Closure of the upper mine openings consisting of the 900-Foot Level portal, air vent shaft and 700-Foot Level portal;
- Constructing a concrete bulkhead at the 300-Foot Level portal, with a water collection and piping system to convey the drainage from the portal directly to Kendrick Creek;
- Implementing institutional controls, access controls, and/or land use restrictions to protect the integrity of the portal closures.

The primary factors that resulted in selection of *Portal Alternative P-4* as the recommended removal action included:

- Will significantly reduce radon exhalation from the mine openings, significantly reducing the human health exposure pathway and risk due to inhalation of radon decay products from the mine openings;
- Has the least uncertainty of alternatives in achieving the RAOs for protection of human health and the environment by significantly reducing radon exhalation from the mine openings;
- Will reduce human and ecological pathways associated with direct contact with the drainage water by collecting and piping the 300-Foot Level portal drainage to Kendrick Creek;
- Will eliminate the potential for water drainage from the 700-Foot Level portal.

2. Contribution to Remedial Performance

The proposed removal action is consistent with any long-term remedy.

3. Engineering Evaluation/Cost Analysis

The EE/CA is included as part of the Administrative Record for this Site and consists of two Volumes. Volume I consists of the [main report](#) while Volume II consists of:

- [Appendix A](#): Screening-Level Ecological Risk Assessment
- [Appendix B](#): Ecological Risk Based Preliminary Remediation Goals
- [Appendix C](#): Human Health Risk Assessment
- [Appendix D](#): RADON and MicroShield® Results
- [Appendix E](#): Cost Estimate Details for Mine Rock Alternatives 1 through 5 and Portal Alternatives 1 through 4
- [Appendix F](#): Detailed Dose/Risk Evaluation for Alternatives

4. ARARs

This removal action will attain to the extent practicable, considering the exigencies of the situation, applicable or relevant and appropriate requirements of federal environmental or more stringent state environmental laws. General regulatory conditions that apply to the Site are described in detail under (1) of the Supplemental documents at the end of this document.

5. Project Schedule

Depending on the construction force, including the availability of personnel and equipment, the recommended removal action could potentially be completed in two construction seasons. Two construction seasons would likely be required to complete Mine Rock Alternative M-5 due to logistical challenges associated with sequencing of multiple construction activities, including removing mine materials and rehabilitation of the existing haul and mine roads, excavating, transporting and consolidating mine rock, and transporting and placing cover materials using the same roads.

B. Estimated Costs

The total estimated PRP cost of the recommended removal action consists of the combined cost of Mine Rock Alternative M-5 and Portal Alternative P-4 and is approximately \$7,237,000. An additional cost for borrow material (to be determined) has been investigated and will add to this amount.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Given the Site conditions and the nature of the radiological hazardous substances documented on Site, the potential exposure pathways pose an imminent and substantial endangerment to public health, welfare or the environment. If this removal action is not implemented, the endangerment will exist in perpetuity.

VII. ENFORCEMENT

Newmont and/or its subsidiaries Newmont Exploration, Ltd. and Dawn Mining Co. are expected to fund and perform the proposed Removal Action under the terms of a Consent Decree.

VII. RECOMMENDATION

This decision document represents the Removal Action for the Ross-Adams Uranium Mine and was developed in accordance with CERCLA as amended, and is not inconsistent with the NCP. This decision is based on the administrative record for the Site

Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for Removal, and I recommend your approval of this PRP-lead, Non-Time Critical Removal Action.

Recommended:  **Date:** 11/21/17
Julie Creed
Environmental Engineering Program Lead
Alaska and Pacific Northwest Regions

Recommended: MATTHEW ANDERSON Digitally signed by
MATTHEW ANDERSON
Date: 2017.11.29 08:23:30
-09'00' **Date:** _____
Matt Anderson
District Ranger
Craig Ranger District

Recommended: MARVIN STEWART Digitally signed by
MARVIN STEWART
Date: 2017.12.14 09:53:58
-09'00' **Date:** _____
Earl Stewart
Forest Supervisor
Tongass National Forest

Approve: SAMUEL CARLSON Digitally signed by
SAMUEL CARLSON
Date: 2018.04.03 09:29:10
-08'00' **Date:** _____
Sam Carlson
Director
Engineering and Information Management
Alaska and Pacific Northwest Regions

Disapprove: _____ **Date:** _____
Sam Carlson
Director
Engineering and Information Management
Alaska and Pacific Northwest Regions

SUPPLEMENTAL DOCUMENTS

1. ARAR Analysis
2. Bokan Radiometric Survey (2007)
3. Pictures

List of Federal and State ARARS and Guidance To Be Considered

Regulation	Description	ARAR		To Be Considered	Rationale
		Applicable	Relevant and Appropriate		
Chemical-Specific					
Resource Conservation and Recovery Act (40 CFR Part 261)	These regulations address the requirements for identification and characterization of solid and hazardous waste.	X			Miscellaneous solid waste debris present at the Site that is scheduled for off-site disposal would be characterized to determine whether it is subject to regulation as hazardous waste, unless the debris is excluded from regulation as a solid waste (e.g. scrap metal being recycled) or a hazardous waste. Solid waste from the extraction, beneficiation, and processing of ores and minerals (including mining of uranium ore) are exempt from regulation as a hazardous waste.
Alaska Water Quality Standards (18 AAC 70)	Water quality standards identify designated beneficial uses for surface and ground water in the State and establish ambient criteria for constituents to protect the designated uses.	X			Water quality standards are potentially relevant and appropriate to ambient surface water quality for protection of designated beneficial uses. Under 18 AAC 70.005, the provisions in these regulations applicable to groundwater do not apply to CERCLA response actions that meet the Alaska site cleanup rules at 18 AAC75.325 - 18 AAC 75.390.
Alaska Oil and Other Hazardous Substance Pollution Control Regulations (18 AAC 75)	These regulations include the Alaska “site cleanup rules,” which establish standards for the cleanup of hazardous substance releases (18 AAC 75.325 to 18 AAC 75.390). These include requirements for site characterization, soil and groundwater cleanup levels, and requirements for conducting cleanup operations. Regulations establish a cumulative carcinogenic risk-based level of 1x10 ⁻⁵ and a cumulative non-carcinogenic hazard index of one across all exposure pathways in determining the applicable cleanup level.		X		May be relevant and appropriate in establishing criteria for cleanup of hazardous substances at the Site.

List of Federal and State ARARS and Guidance To Be Considered (Continued)

Regulation	Description	ARAR		To Be Considered	Rationale
		Applicable	Relevant and Appropriate		
Office of Solid Waste and Emergency Response (OWSER) Directive No. 9200.4-18 – Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination	This guidance presents clarifying guidance for establishing cleanup levels protective of human health for radioactive contamination at CERCLA sites. The cleanup levels are expressed as a risk, exposure, or dose level and not as a soil concentration level. The guidance provides that the appropriate risk range for radionuclides is 1E-4 to 1E-6. The acceptable risk level established for cleanup depends on the exposure pathways and land use at a site. The guidance concludes that levels of less than or equal to 15 mrem/yr effective dose equivalent are protective.			X	This EPA directive provides guidance to be considered in developing removal action alternatives to address exposure to radioactive materials at the Site.
Location-Specific					
2001 Roadless Area Conservation Rule	These regulations limit road construction and timber cutting on inventoried roadless areas within the National Forest System.	N/A			This rule does not constitute an ARAR since the Ross-Adams mine site is not within an inventoried roadless area based on the Alaska roadless inventory map. Moreover, under 36 CFR 294.12(b)(2), the prohibition on construction and reconstruction of roads in inventoried roadless areas does not apply where the responsible officer determines that road construction or reconstruction is needed to conduct a response action under CERCLA.
Protection of Wetlands (Executive Order No. 11990, 40 CFR Part 6)	Directs federal agencies to minimize the destruction, loss or degradation of wetlands, and to avoid construction in wetlands if a practicable alternative exists.			X	Guidance would be considered if Inventoried wetlands exist within Site boundaries.

List of Federal and State ARARS and Guidance To Be Considered (Continued)

Regulation	Description	ARAR		To Be Considered	Rationale
		Potentially Applicable	Potentially Relevant and Appropriate		
Section 404 of Clean Water Act (33 USC 1344; 33 CFR Parts 320 - 330, 40 CFR Part 230)	Prohibits discharge of dredged or fill material into jurisdictional waters and wetlands without a permit. Establishes substantive requirements for authorizing such discharges.		X		Permit requirements are not applicable to on-Site removal actions under CERCLA. The substantive requirements may be relevant and appropriate if there is a discharge of dredged or fill material into surface waters (including wetlands) that qualify as waters of the United States.
Section 10 of Rivers and Harbors Act (33 USC § 403, 33 CFR Part 322)	Requires permit for excavation and dredging in navigable waters of the United States, including waters of the United States that are subject to the ebb and flow of the tide.		X		Permit requirements are not applicable to on-Site removal actions under CERCLA. The substantive requirements may be relevant and appropriate if excavation or dredging occurs within Kendrick Bay.
Alaska Department of Natural Resources Land Use Planning (AS 38.04.065, 11 AAC 55)	Alaska Department of Natural Resources adopted a revision to the Prince of Wales Area Plan in 1998, which provides guidelines for managing State-owned uplands, submerged lands and tidelands in the planning area.		X		State lands within Kendrick Bay are covered by Management Unit 15 of the Prince of Wales Island Area Plan (ADNR, 1998). The plan does not apply to federal lands. The plan provides guidelines for management of state-owned lands in the planning area.
National Historic Preservation Act (32 CFR Part 229, 40 CFR § 6.301(b), 36 CFR Part 800)	Requires federal agencies to take into account the effect of federal undertakings on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historical Places.	X			Only applicable if Site features are eligible for inclusion in the National Register.
Alaska Historic Preservation Requirements (AS 41.35 and 11 AAC 16)	Provides for the protection of historic places on State lands, including tidelands and submerged lands.	X			Not applicable to federal lands at the Site. Would apply only to collection of historic, prehistoric or archaeological resources of the State, if any occur at the Site.

List of Federal and State ARARS and Guidance To Be Considered (Continued)

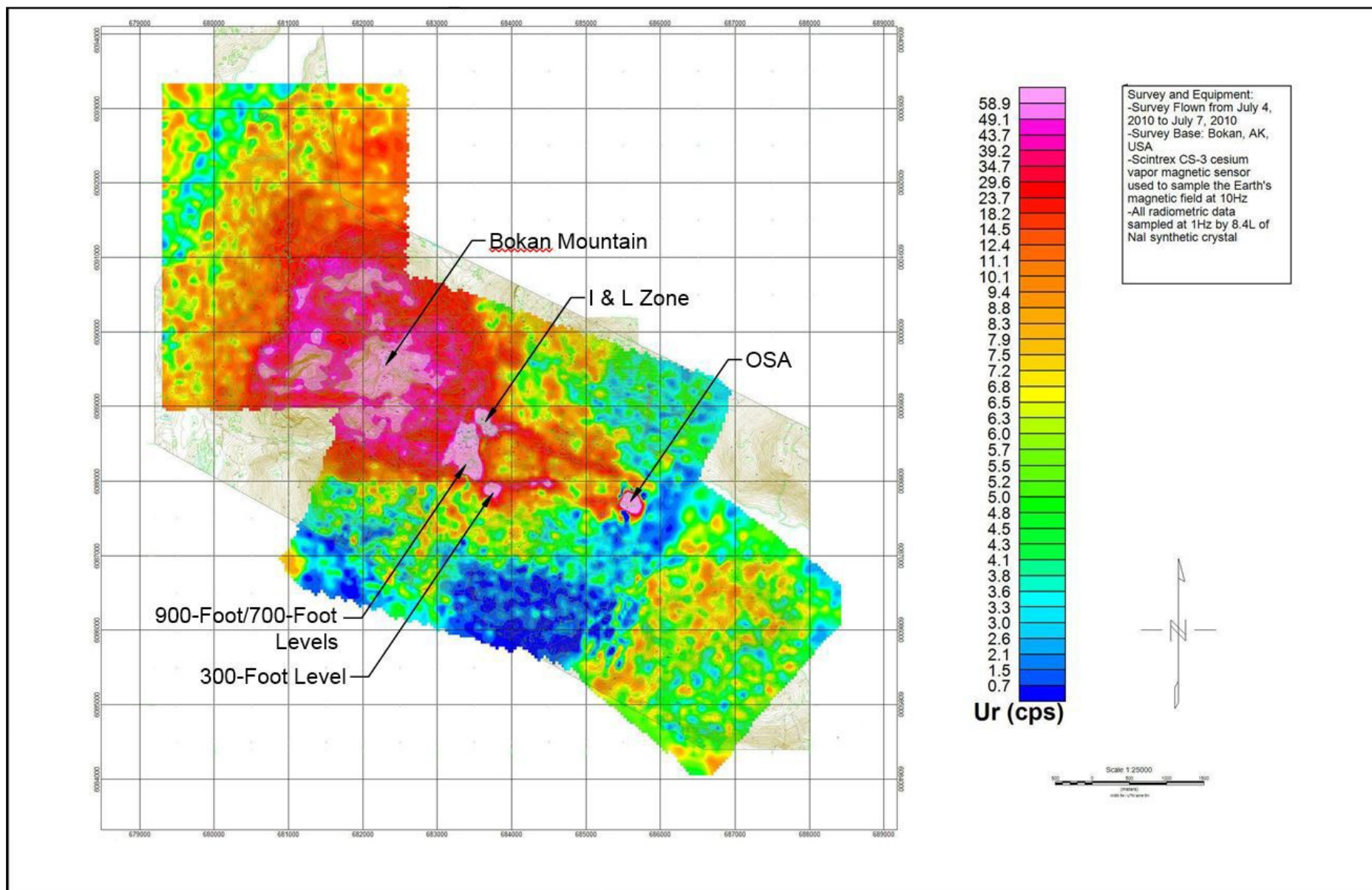
Regulation	Description	ARAR		To Be Considered	Rationale
		Applicable	Relevant and Appropriate		
Endangered Species Act (16 USC 1531-1544; 50 CFR Parts, 17, 222 and 402)	Provides for protection and conservation of listed threatened and endangered species and designated critical habitat.	N/A			The ESA would be applicable if the removal action would affect listed species or designated critical habitat. Listed threatened or endangered species were not identified as being present at the Site on species lists provided by the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and Alaska Department of Game and Fish. Listed species were not observed at the Site during the 2009 Site investigation. Consequently the ESA is likely not an ARAR.
Bald Eagle and Golden Eagle Protection Act (16 USC 668 et seq.)	Establishes federal requirements for protection of bald and golden eagles.	X			Potentially applicable because areas of the Site are bald eagle habitat.
Migratory Bird Treaty Act (16 USC 703-712)	Governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests.	X			Potentially applicable ARAR as some species observed at the Site are on the migratory bird list.
Magnuson-Stevens Fishery Conservation and Management Act (50 CFR Part 600)	Requires federal agencies to consider the effect of federal actions on designated Essential Fish Habitat (EFH). Fishery Management Plans provide guidance for potential conservation recommendations to protect designated EFH.			X	The National Marine Fisheries Service (NMFS) has designated Kendrick Bay as EFH for salmon species. If the removal action is determined to adversely affect EFH, then conservation measures to protect the EFH would be considered, consistent with the existing Fishery Management Plan for the Salmon Fisheries and guidance for addressing impacts to EFH from non-fishing activities. The EFH conservation recommendations are advisory, non-binding, and may include measures to avoid or minimize adverse effects to EFH.

List of Federal and State ARARS and Guidance To Be Considered (Continued)

Regulation	Description	ARAR		To Be Considered	Rationale
		Applicable	Relevant and Appropriate		
Management of National Forest System Lands (36 USC § 1604) and Tongass National Forest Land and Resource Management Plan (2008) (LRMP)	National Forest System lands are to be managed in accordance with land management plans. The Tongass LRMP provides management direction, including prescriptions, standards and guidelines, for managing lands and resources within the Tongass National Forest. Kendrick Bay area is designated for timber production and mineral extraction.	X			Is applicable to the Site as it is located entirely within the Tongass National Forest.
Action-Specific					
Standards Applicable to Generators of Hazardous Waste (40 CFR Part 262)	Regulations establish standards for generators of hazardous waste and generators who transport or offer for transport a hazardous waste for off-site treatment, storage, or disposal.	X			Regulations apply to miscellaneous solid waste debris present at the Site intended for off-site disposal to the extent the debris is classified as hazardous waste.
Standards Applicable to Transporters of Hazardous Waste (40 CFR Part 263)	Establishes standards for off-site transport of hazardous waste.	X			Regulations apply to the off-site transport of miscellaneous solid waste debris present at the Site to the extent the debris is classified as hazardous waste.
Hazardous Materials Transportation Act (49 CFR Parts 107, 171-180, 383, 391-397)	Governs the transport of hazardous materials, including labeling, marking, placarding, using proper containers, and reporting discharges.	X			Requirements apply to the off-site transport of miscellaneous solid waste debris present at the Site to the extent the debris is classified as hazardous waste.
Land Disposal Restrictions (40 CFR Part 268)	Identifies certain hazardous wastes that are restricted from land disposal and provides standards for treatment of hazardous waste prior to land disposal.	X			Regulations potentially apply to off-site disposal of miscellaneous solid waste debris present at the Site to the extent the debris is classified as hazardous waste.
Standards for Management of Universal Wastes (40 CFR Part 273)	Provides requirements for the management, regeneration, reclamation or disposal of used batteries.	X			Batteries present at the Site will be managed and disposed at an off-site facility.

List of Federal and State ARARS and Guidance To Be Considered (Continued)

Regulation	Description	ARAR		To Be Considered	Rationale
		Applicable	Relevant and Appropriate		
CERCLA "Off-Site Rule" (40 CFR Part 300.440)	Establishes procedures for planning and implementing actions involving the off-site transfer of any hazardous substance pursuant to a CERCLA cleanup.	X			Regulations apply to the off-site transport and disposal of miscellaneous solid waste debris present at the Site to the extent the debris is classified as hazardous waste.
Alaska Solid Waste Regulations (18 AAC 60)	Regulations set forth standards for the transport, storage and disposal of solid wastes, including siting, construction, operational and monitoring requirements.	X			Sets standards governing management of solid waste. However, under 18 AAC 60.005(c), waste rock from mining operations is exempt from the requirements of these regulations unless mixed with nonexempt waste, there is a public health, safety or welfare threat or environmental problem associated with management of the waste, or the waste is managed in a manner that causes or contributes to a nuisance.
Alaska Pollutant Discharge Elimination System (APDES) Program (18 AAC 83)	Establishes permitting program and standards for the discharge of pollutants from a point source to waters of the U.S. within the State of Alaska, including storm water discharges.		X		Permit requirements are not applicable to removal actions under CERCLA. Provisions governing discharge conditions may be relevant and appropriate if there are on-Site point source discharges of pollutants, including any applicable storm water discharges.
Alaska Air Quality Control Regulations (18 AAC 50)	The regulation states that "A person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air."	X			This is a potentially applicable ARAR to handling and transporting bulk materials at the Site.
Invasive Species (Executive Order 13112)	Prohibits federal agencies from taking actions that are likely to cause the introduction or spread of invasive species.			X	A potential exists for the introduction of nonnative invasive species.





Aerial photograph of the 700-and 900-Foot Levels, illustrating the various surface cover conditions across the site. (For reference, the 700-Foot Level mine rock pile can be seen at the lower left and the Open Pit is seen in the upper center of the photo. Mine Fork Creek runs vertically down the right side of the photo).



Photograph Looking North Over the Long Axis of the Open Pit from the south end, showing colluvial deposits along the floor and dense brush vegetation



Photograph Looking Southwest Down into the Open Pit and 900-Foot Level portal showing the point at which surface runoff from the north and west (seen on the right side) enters the pit. (Note: Flow at the time the photo was taken was on the order of several gallons per minute.)



Photograph Looking South Over the North Mine Rock Pile
(The pile is seen at the lower middle to left side of the photo, and borders the outside edge of the lower half of the loop in the road. The Open Pit is seen at the top center of the photo).



Photograph Looking Southwest at the 900-Foot Level Portal



Photograph Looking South in at the 900-Foot Level Portal, showing water flowing from the rock pile which partially blocks the portal. (The photo also shows the adit bending toward the right (west) approximately 100 feet inside the portal.)



Photograph of 700-Foot Level Portal



Photograph of 300-Foot Level Portal



Photograph Looking Northwest at the Two Rock Loadout Ramps. (The Ore Staging Area is just beyond the docks.)



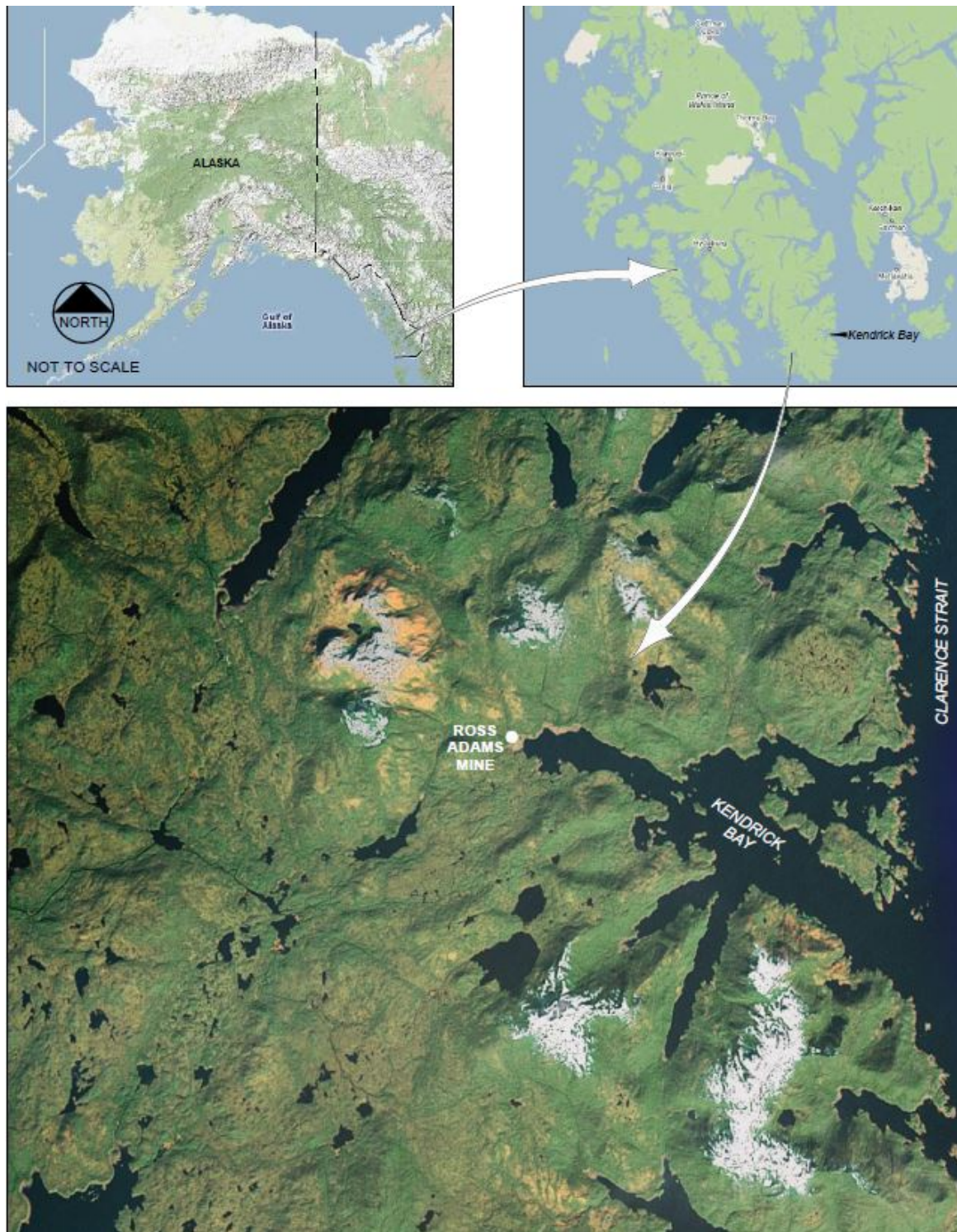
Photograph Looking North at the Older and Westernmost Rock Loadout Ramp



Photograph of Ore Present in the Intertidal Area Adjacent to the Dock.

APPENDIX B

SITE MAP



APPENDIX C

STATEMENT OF WORK

**STATEMENT OF WORK
REMOVAL DESIGN/REMOVAL ACTION
ROSS-ADAMS MINE SITE**

1.0 INTRODUCTION

a. Purpose

This Statement of Work (SOW) for the Ross-Adams Mine Site (Site) describes the Work necessary to complete the design and implement the Removal Action at the Site as defined in the United States Department of Agriculture, Forest Service (USFS) Non-Time-Critical Removal Action Memorandum (USFS, 2018). The Site is a former uranium mine located in the Tongass National Forest (TNF) near the southern end of Prince of Wales Island, Alaska. In 2015, Newmont USA Limited and Dawn Mining Company, LLC (Respondents) completed the Engineering Evaluation/Cost Analysis (EE/CA) for the Site under the terms of an Administrative Settlement Agreement and Order on Consent (ASAOC) with the USFS. The EE/CA (WME, 2015) evaluated removal action alternatives for the Site and describes the Removal Action components.

The Respondents shall perform the Work activities, as described in this SOW, consistent with the Action Memorandum and the ASAOC for Removal Action. The USFS shall provide oversight of the Respondents Work activities.

b. Removal Action Summary

The Removal Action described in the Action Memorandum and EE/CA addresses the following mine features at the Site:

- Open Pit at the 900-Foot Level;
- Mine portals (mine tunnel openings) at the 900-Foot, 700-Foot and 300-Foot Levels, and the 900-Foot Level air vent shaft;
- Mine rock piles at the 900-Foot, 700-Foot and 300-Foot Levels, and adjacent soils;
- Specific segments of the haul road, the mine road embankments (between the 700-Foot and 900-Foot Levels), and the I&L Spur road;
- Ore Staging Area (OSA);
- Rock loadout ramps in the intertidal area due to ore spilled during former ore loading operations;
- Drainage from the 300-Foot Level portal; and,
- Miscellaneous solid waste and debris.

The major mine features are shown on Figure 1. The Removal Action consists of excavating mine rock and mine-affected materials from the OSA, intertidal area, 300-Foot, 700-Foot, and 900-Foot Levels, the mine road, I&L Spur road, and designated segments of the haul road. The excavated materials will be hauled to and consolidated in the Open Pit Repository at the 900-Foot Level. A cover consisting of a synthetic geomembrane and earthen cover will be constructed over the mine rock materials consolidated in the Open Pit Repository. Stormwater controls will be constructed to protect the cover. Mine openings at the 900-Foot and 700-Foot Levels will be closed. A concrete

bulkhead will be constructed at the 300-Foot Level portal, with a water collection and piping system to convey drainage from the portal directly to Kendrick Creek. Miscellaneous solid waste and debris will be characterized and transported off-site for recycling and/or disposal. Institutional controls, access controls, and/or land use restrictions will be implemented and managed by the USFS to protect the integrity of the completed Removal Action. The Removal Action work elements are described in Section 3.0 of this SOW.

c. Work To Be Performed

This SOW identifies the Work to be performed, including Data Gaps Evaluation and Pre-Design Investigations, Removal Action Design, Removal Action Work Plan, Removal Action construction, Completion Report and Post Removal Site Control Plan, supporting plans and analyses, inspections, and reporting. Unless otherwise specified, the Respondents shall conduct all Work described in this SOW.

2.0 COMMUNITY INVOLVEMENT PLAN

The USFS has the lead responsibility for developing and implementing community involvement activities at the Site. A Community Involvement Plan (CIP) was developed for the Site during EE/CA preparation. The USFS shall review the existing CIP and revise it if appropriate to further public involvement activities during the Work that are not already addressed or provided for in the existing CIP.

If requested by the USFS, Respondents shall support and participate in community involvement activities, including participation in (1) the preparation of information regarding the Work for dissemination to the public and (2) public meetings that may be held or sponsored by the USFS to explain activities at or relating to the Site. All community involvement activities conducted by Respondents at USFS's request are subject to USFS's oversight.

3.0 REMOVAL ACTION WORK ELEMENTS AND PERFORMANCE STANDARDS

The following Work elements are required components of the Removal Action. Performance Standards are specified for each Work element. Climatic and access conditions constrain annual on-Site work to an approximate five month period, generally from May through September. During Removal Action Work element development, Respondents shall coordinate with USFS on standards, such as road improvement and staging area standards, tree and vegetation clearing and use, camp facility location, operation and decommissioning (if on USFS lands), rehabilitation of disturbed areas, sign wording and sign and physical barrier placement, post-removal site control, etc.

a. Site Access Development

This Work element includes improvement of shore access and existing Site roads, mobilization of personnel, equipment and materials, and vegetation removal in Work areas.

Performance Standards:

- Equipment and materials required to implement the Removal Action shall be mobilized to the Site via tug and barge. Pre-design investigations shall determine if self-loading

barges are sufficient to mobilize equipment and material to the Site, or if a dock must be constructed. Equipment and materials required include earthwork construction equipment, vehicles for on-Site personnel transportation, generators for electrical power, fuel to operate equipment, and temporary living facilities for work crews. Equipment and unused materials shall be demobilized from the Site after completing the Removal Action.

- Site roads shall be improved for equipment access. Road improvements will consist of regrading and widening existing haul road surfaces to allow equipment access and construction of road turn-outs to allow haul truck traffic during material transport. Any unstable areas of the haul road to the 300-Foot Level will be reinforced to allow for equipment access. The extent of road improvements and identification of any unstable road areas will be determined by pre-design investigations.
- Trees and vegetation shall be cleared to construct access and staging areas, and remove mine rock and mine-affected materials. The trees cleared shall be left on-Site and may be chipped, used as woody ground cover, or staged as part of physical access controls. Chipped trees may be used as an amendment for re-vegetation.

b. Miscellaneous Solid Waste and Debris Removal, Disposal and Recycling

Miscellaneous solid waste debris and petroleum products present at the Site shall be inventoried, removed from the Site and transported to the appropriate disposal or recycling facility. Pre-design investigations shall characterize the solid waste debris and petroleum products.

Performance Standards:

- Debris will be scanned for radiological activity prior to removal from the Site and decontaminated, as necessary. If non-hazardous debris cannot be decontaminated to achieve applicable transport requirements, the debris shall be consolidated with the mine rock. All debris classified as hazardous waste shall be scanned and decontaminated, as necessary, and disposed at an off-site facility licensed to accept the debris. Any hazardous debris that cannot be decontaminated will be disposed at an offsite facility licensed to accept radioactive hazardous waste, provided that applicable transport requirements can be met. Abandoned vehicles shall be disposed of as scrap metal and transported off-island for recycling or disposal. Metal drums containing petroleum or other materials shall be transported off-island to be disposed at a petroleum disposal facility or other appropriate licensed facility depending upon material characterization results. The remaining miscellaneous debris will be taken to the landfill in Ketchikan. Drill core shall be consolidated with the mine rock.

c. Mine Portals Closure

The Mine Portal Closure Work element includes the work necessary to close the 900-Foot Level portal and vent shaft, the 700-Foot Level portal, and the 300-Foot Level portal. Details of the portal closures shall be determined during pre-design investigations and finalized during the design process.

Performance Standards:

- 900-Foot Level portal - The 900-Foot Level portal shall be closed with a reinforced concrete plug or wall to allow consolidation of mine rock in the Open Pit Repository. The closure shall prevent human and animal access, preclude air entry into the underground mine workings, and eliminate radon exhalation from the 900-Foot Level portal.
- 900-Foot Level vent shaft - The 900-Foot Level vent shaft shall be closed to prevent human and animal access, air and water entry, and eliminate radon exhalation. The EE/CA presents a conceptual design for closure of the 900-Foot Level vent shaft with injectable, expandable, polyurethane foam. If foam is used, exposed surfaces will be covered to protect it from ultra-violet radiation, weather, and /or vandalism. Use of foam will be according to manufacturer's specifications.
- 700-Foot Level portal - The 700-Foot Level portal shall be closed to prevent human and animal access, preclude air entry, and eliminate radon exhalation and the potential for water drainage. Conceptual design of the portal closure is provided in the EE/CA.
- 300-Foot Level portal - The 300-Foot Level portal shall be closed with a flow-through concrete bulkhead to prohibit human and animal access but allow water outflow from the mine workings. The bulkhead will eliminate direct radon emissions from the portal. A water collection system shall be designed and constructed to collect and pipe the portal drainage at the base of the bulkhead. The drainage will be piped directly to Kendrick Creek.

d. Mine Rock and Mine-Affected Material Removal and Transport

This Work element includes the excavation and removal of mine rock and mine-affected materials and transportation and consolidation at the Open Pit Repository. Results of pre-design investigations will provide information to refine the extent and quantities of mine rock and mine-affected material to be removed.

Performance Standards:

- Intertidal Zone - Approximately 20 cubic yards (CY) of ore rock associated with former loading ramps and ore loading operations within the intertidal zone shall be removed and consolidated at the Open Pit Repository. The affected area around the former loading ramps within the intertidal zone is defined in the EE/CA and consists of discrete, individual ore rocks extending from the OSA to the subtidal zone.
- OSA - Mine-affected material from the OSA shall be excavated, transported and consolidated at the Open Pit Repository. The removal area boundary for mine-affected materials in the OSA is identified in the EE/CA from topographic and gamma surveys. The estimated quantity of mine-affected material to be removed is 8,250 cubic yards (CY). Visual observations and gamma radiation measurements shall be performed according to the Removal Excavation Control and Confirmation Plan (Senes, 2013) to define the final limits of excavation, provide control during material excavation and confirm that mine-affected materials have been effectively removed.

- Mine Rock Piles - Mine rock piles at the 300-Foot Level; 700-Foot Level, and 900-Foot Level (North and South piles) shall be excavated, transported and consolidated at the Open Pit Repository. The physical boundaries of the mine rock piles at the 300-Foot, 700-Foot and 900-Foot Levels are identified in the EE/CA. Scattered mine rock exists in discrete areas near the toe of the 300-Foot Level mine rock pile, as identified within the removal area boundary in the EE/CA, and beyond the physical footprints of the 700-Foot and 900-Foot mine rock piles. The estimated quantity of mine rock to be removed is 31,739 CY at the 300-Foot Level, 8,091 CY at the 700-Foot Level, and 10,111 CY at the 900-Foot Level. Visual observations and gamma radiation measurements shall be performed according to the Removal Excavation Control and Confirmation Plan (Senes, 2013) to define the final limits of excavation, provide control during mine rock excavation and confirm that mine rock has been effectively removed.
- I&L Spur Road - The I&L Spur access road materials shall be removed, transported and consolidated in the Open Pit Repository. The estimated quantity of material to be removed is 1,200 CY. The I&L Spur road shall be closed.
- Mine Road - The mine road surface embankments between the 900-Foot Level and 700-Foot Level shall be removed, transported and consolidated in the Open Pit Repository. The estimated quantity of material to be removed is 3,328 CY. The road will be closed.
- Haul Road - Mine-affected material from segments of the haul road between the 300-Foot Level and the intersection with the northern portion of the haul road identified in the EE/CA and refined during pre-design investigations shall be excavated and consolidated in the Open Pit Repository. The haul road between the 300-Foot Level and the intersection with the northern haul road will be closed to preclude future vehicle access. Mine-affected material from segments of the haul road between the OSA and the 900-Foot Level identified in the EE/CA and refined during pre-design investigations shall be excavated to a depth of one foot and replaced with one foot of borrow material to maintain vehicle access to the Open Pit Repository. Respondents shall coordinate with the USFS regarding the need for the haul road to be open to the Open Pit Repository after the removal action and site rehabilitation is completed.

e. Open Pit Repository Design and Construction

This Work element includes the design and construction of the Open Pit Repository to contain the mine rock and mine affected materials in a manner that reduces external gamma radiation and radon emanation at the surface.

Performance Standards:

- Mine rock and mine-affected materials shall be placed in the Open Pit Repository in a manner that positions materials with higher gamma radiation activity as deep in the profile as possible, and covering it with material having lower gamma radiation activity, in order to reduce external gamma radiation and radon emanation at the surface. Based on measured gamma exposure rates, the anticipated placement of materials in the Open Pit will consist of the OSA at the bottom, followed by the 900-Foot Level South mine rock pile, the 700-Foot Level mine rock pile, the mine road embankment material, the 900-

Foot Level North mine rock pile, and the 300-Foot Level mine rock pile at the top of the Open Pit Repository.

- The Open Pit Repository shall be regraded to a maximum slope of 3:1 (horizontal:vertical) in order to facilitate cover placement.
- The Open Pit Repository shall be constructed with a 2-foot thick earthen cover over a synthetic geomembrane designed to accomplish the following objectives:
 1. Reduce external gamma radiation and radon emanation from the consolidated mine rock;
 2. Prevent exposure by dermal contact, inhalation, or incidental ingestion of mine rock or mine-affected soils;
 3. Prevent access of burrowing animals and root penetration;
 4. Provide geotechnical and physical stability against slope failure and erosion; and,
 5. Promote runoff and reduce surface water contact with mine rock.
- The source of cover material shall be determined from pre-design investigations. The properties of the selected cover material will be used during design to determine the final thickness of the Open Pit Repository cover in reducing radon emanation and gamma radiation from the consolidated mine rock. Approximately 11,615 CY of cover material is estimated, the final quantity will be determined during design. The surface of the repository cover at the Open Pit shall be constructed of rock armor as determined during design.
- Stormwater controls shall be designed and constructed to protect the Open Pit Repository cover.

f. Revegetation

This Work element includes revegetation of areas that previously supported vegetation and were disturbed during the Removal Action.

Performance Standards:

- Revegetation shall be performed of areas disturbed during the Removal Action. Minimal vegetation currently exists at the 700-Foot and 900-Foot Levels, and revegetation will only be performed where vegetation currently exists. Revegetation shall include use of native seed mixtures, and will follow the TNF Guidance for Invasive Plant Management Program and guidance provided in the Revegetation Manual for Alaska.

g. Physical Access Controls

Physical access controls will be implemented as defined in the Post Removal Site Control Plan.

Performance Standards:

- Physical access controls shall be implemented to reduce exposure pathways to water outflow at the 300-Foot Level portal and to protect the integrity of the cover on the Open Pit Repository. Controls will include signage and physical barriers placed at appropriate access points to the mine feature areas.

4.0 PRE-DESIGN INVESTIGATIONS

The purpose of the Pre-Design Investigations is to address existing data gaps by conducting additional field investigations to provide information necessary for design and implementation of the Removal Action.

a. Data Gaps Evaluation

Additional investigations are necessary to support engineering design and implementation of the Removal Action. Respondents shall perform an evaluation of existing data and identify data gaps prior to development of Pre-Design Investigation Work Plans. The data gaps evaluation will provide the scope for the pre-design investigations to obtain additional data and information necessary for design of the Removal Action. A Data Gaps Evaluation Report will be submitted for USFS review and approval. The Data Gaps Evaluation Report will summarize the findings of the data gaps evaluation, identify priority data needs for Removal Action Design, and define the proposed schedule for submittal of Pre-Design Investigation Work Plans.

b. Pre-Design Investigation Work Plans

Respondents will submit Pre-Design Investigation Work Plans for USFS review and approval according to the scope and schedule defined in the Data Gaps Evaluation Report, and perform the investigations. A separate Work Plan may be submitted for each investigation or for multiple investigations. The Work Plans will include, or reference existing Quality Assurance Project Plans (QAPPs), Health and Safety Plans (HASPs) and Field Sampling Plans (FSPs). The pre-design investigations are anticipated to include:

1. Civil Topographic Survey

Topographic survey data are necessary to refine estimates of the mine rock excavation volume for the 300-Foot Level pile, the mine-affected material volume at the OSA, and the area surrounding the 900-Foot Level Open Pit to support the design of the repository. Ground surveys of the haul road are needed to provide information to evaluate and support design of haul road improvements necessary to support haul truck traffic during Removal Action implementation. Ground surveys of the intertidal area are necessary to collect data to facilitate permitting of the area as a potential borrow source and developing an excavation plan, should the area be selected as the borrow material source. Topographic surveys would be conducted for the following areas: 300-Foot Level mine rock pile; OSA; haul road and mine road; open pit and surrounding area; and intertidal area.

2. Haul Road Stability Investigation

Investigations are necessary to evaluate the stability of the haul road and mine road and any improvements necessary for haul truck traffic. The investigation would consist of a geotechnical field reconnaissance to visually inspect the roads and areas of potential instability. All areas of instability would be documented with photographs and notes, and mapped during the field reconnaissance. Information recorded during the field inspection would include: location of unstable areas relative to the road surface, affected road length, dimensions of landslide and unstable features, slope angles,

description of soil and bedrock composition, evidence of saturated conditions, and relative age of unstable areas from observation of vegetation and soil conditions.

3. Mine Rock Investigation

Additional information is necessary to refine the extent and quantity of mine-affected material at the 300-Foot Level mine rock pile, OSA, and identified haul road segments. Visual inspections and gamma surveys would be conducted according to the Removal Action Excavation Control and Confirmation Plan (Senes, 2013) to refine the removal area boundaries. Further investigations would also be performed to determine the vertical extent of mine-affected material at the OSA.

4. Borrow Source Investigation

Investigations are necessary to identify and evaluate the availability and suitability of borrow sources for cover material. Physical and material properties of borrow sources would be characterized to determine if sufficient volume is available from potential borrow sources and that the materials are suitable for cover construction. The borrow source investigation would include evaluation of the proposed intertidal borrow source for suitability and permitting requirements, investigation of alternate on-site borrow locations, evaluation of potential off-site borrow sources, and a comparative analysis of potential borrow sources.

5. Surface Hydrology Investigation

A surface hydrologic investigation would be performed to support design of stormwater controls, including inspection of existing diversion structures and stormwater pathways, and development of hydrologic criteria and modeling for final design of stormwater controls to minimize run-on and control runoff for the Open Pit Repository cover.

6. Miscellaneous Waste Inventory and Site Inspection

A Site inspection would be conducted to update and verify the previous inventory of solid waste debris and petroleum products, including estimated quantities. Waste debris (abandoned vehicles, empty drums, e.g.) that are appropriate for recycling would be identified. Samples of any waste fluids (petroleum, fuels, e.g.) would be collected for laboratory analysis to determine the proper handling and disposal methods.

7. Mine Portal Investigation

Further investigations at the mine portals are necessary to support design of the mine opening closures. Field inspection of the mine portals would be performed to determine the physical conditions and dimensions of the mine openings, identify the appropriate location of the mine closures at the portals, and conduct a geologic and geotechnical inspection of the wall rock type and fracture spacing. Flow measurements of the drainage from the 300-Foot Level portal would be performed to provide additional information in determining the design basis for the water collection and piping system.

c. Field Sampling Plan

A Field Sampling Plan (FSP) shall be prepared to address all sample collection activities related to one or more Pre-Design Investigation Work Plans. At a minimum, the FSP shall identify sample media, sampling procedures, sample locations (areal extent and depths), number of samples, analytical parameters, and test methods. The FSP will include provisions to minimize the spread of invasive weeds by equipment and/or personnel, according to the TNF Guidance for Invasive Plant Management Program. The FSP will be prepared so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. The FSP shall be submitted to the USFS for review and approval.

d. Quality Assurance Project Plan

Respondents shall prepare a Quality Assurance Project Plan (QAPP) to ensure the quality of all sampling and analysis performed under this SOW. The QAPP must include a detailed explanation of Respondents quality assurance, quality control, and chain of custody procedures for all data collection activities. Respondents shall develop the QAPP in accordance with EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006); Guidance for Quality Assurance Project Plans., QA/G-5, EPA/240/R 02/009 (Dec. 2002); and Uniform Federal Policy for Quality Assurance Project Plans, Parts 1 3, EPA/505/B-04/900A though 900C (Mar. 2005). The QAPP shall be submitted to the USFS for review and approval.

e. Health and Safety Plan

A Health and Safety Plan (HASP) shall be prepared to protect on-Site personnel from physical, chemical, and all other hazards posed by Work activities. Respondents shall develop the HASP in accordance with EPA's Emergency Responder Health and Safety and Occupational Safety and Health Administration (OSHA) requirements under 29 C.F.R. §§ 1910 and 1926. The HASP shall cover activities during pre-design investigations and shall be updated, as appropriate, to cover activities during Removal Action construction. The HASP shall be submitted to the USFS for review and approval.

f. Pre-Design Investigation Reports

Following each pre-design investigation, Respondents shall submit a Pre-Design Investigation (PDI) Report for USFS review and approval that presents and evaluates pre-design investigation data and information. These reports shall include (as appropriate):

- Summary of the investigations performed;
- Summary of investigation results;
- Summary of validated data (i.e., tables and graphics);
- Data validation reports and laboratory data reports;
- Narrative interpretation of data and results;
- Results of statistical and modeling analyses;
- Photographs documenting the work conducted; and
- Conclusions and recommendations for Removal Action Design, including design parameters and criteria.

5.0 REMOVAL ACTION DESIGN

The Removal Action Design shall include the construction plans, specifications, drawings, and supporting plans to implement the Removal Action at the Site as defined in the Action Memorandum. The Removal Action Design shall be developed in phases and submitted to the USFS for review and approval in accordance with the schedule provided in Section 10.0.

a. Preliminary (30%) Removal Action Design

Respondents shall submit a Preliminary (30%) Removal Action Design for USFS review and approval. The Preliminary Design shall address the basic technical requirements of the Removal Action. The Preliminary Design shall include:

1. Design Criteria and Analysis Report – Parameters, assumptions, criteria and analysis used for design;
2. Preliminary Drawings and Plans;
3. Outline of Design Specifications;
4. Preliminary Construction Schedule; and
5. Supporting Deliverables – Analyses and investigation results that support the design.

b. Pre-Final (95%) Removal Action Design

Respondents shall submit the Pre-Final (95%) Removal Action Design for USFS review and approval. The Pre-Final Design must be a continuation and expansion of the previous design submittal and must address USFS's comments on the Preliminary Removal Action Design. The Pre-Final Design will serve as the approved Final (100%) Design if the USFS approves the Pre-Final Design without comments. The Pre-Final Design will include:

1. A complete set of construction drawings and specifications that are: (1) certified by a registered professional engineer; and (2) suitable for procurement;
2. Survey and engineering drawings showing existing Site features, including the Removal Action elements, configurations, and boundaries;
3. Pre-Final versions of the same elements and deliverables as are required for the Preliminary Design;
4. A specification for photographic documentation of the Removal Action; and
5. Updates of all supporting deliverables required to accompany the Preliminary Design.

c. Final (100%) Removal Action Design

Respondents shall submit the Final (100%) Removal Action Design for USFS review and approval. The Final Removal Action Design must address USFS's comments on the Pre-Final Removal Action Design and must include final versions of all Pre-Final Removal Action Design deliverables.

6.0 REMOVAL ACTION

a. Removal Action Work Plan

Respondents shall submit a Removal Action Work Plan (RAWP) for USFS review and approval. The RAWP outlines the schedule for the specific components to coordinate and implement the Removal

Action and describes the activities to construct the specific design components. The RAWP shall include:

1. Project Communications Plan – Identifies names, organizational chart, duties and responsibilities of the construction management and oversight team;
2. Construction Management Plan – Describes and provides detailed plan for implementing the Removal Action and the process for documenting work accomplished and any modifications to the design;
3. Construction Schedule – Provides schedule for completion of major activities and milestones for critical path items;
4. Construction Quality Assurance/Quality Control Plan – Provides inspection and testing procedures to ensure work is completed according to the design and specifications;
5. Excavation Control and Confirmation Plan – Defines procedures for visual inspection and gamma surveys to define removal area boundaries and confirmation of mine rock removal;
6. Offsite Solid Waste Transportation and Disposal Plan – Defines plan for offsite disposal/recycling of miscellaneous waste debris, including transportation requirements and disposal facility acceptance and agreements;
7. ARARs Compliance Plan – Provides summary of Work elements for meeting the substantial requirements of ARARs;
8. Construction Contingency Plan – Defines procedures and responsibilities for unexpected conditions and incidents;
9. Worker Health and Safety Plan, inclusive of Radiation Safety Plan;
10. Specific Work Control Plans (site access, Stormwater Pollution Prevention Plan (SWPPP) inclusive of TNF erosion control requirements, dust control, invasive plant management plan (according to TNF guidance), and Spill Prevention, Control, and Countermeasure (SPCC) Plan); and
11. Emergency Response Plan.

b. Implement Removal Action Construction

Respondents shall construct the Removal Action in accordance with the Final Removal Action Design and RAWP.

c. Design Changes During Construction

During construction, unforeseen site conditions, significant changes in estimated quantities of materials, or other design changes or modifications that materially affect the Final Removal Action Design shall be presented to the USFS in a timely manner and fully documented with a summary of required changes or modifications provided to the USFS in monthly progress reports.

d. Meetings and Periodic Construction Inspections

1. Preconstruction Conference

Respondents shall hold a preconstruction conference with the USFS and others as directed or approved by the USFS. Respondents shall prepare minutes of the conference and shall distribute the minutes to all parties.

2. Periodic Meetings

During construction of the Removal Action, Respondents shall meet regularly with the USFS, and others as directed or determined by the USFS, to discuss construction status. Respondents shall distribute an agenda and list of attendees to all parties prior to each meeting. Respondents shall prepare minutes of the meetings and shall distribute the minutes to all parties.

3. Permits and Manifests

Respondents shall provide to the USFS copies of any approvals obtained from any other agencies associated with implementing the Removal Action and copies of all waste manifests for waste removed from the Site as part of the Removal Action.

4. Periodic Construction Inspections

The USFS or its representative shall conduct periodic inspections of the Work. At the USFS's request, the Respondents' Supervising Contractor or other designee shall accompany the USFS or its representative during inspections. Upon notification by the USFS of any deficiencies in the Removal Action construction, Respondents shall take all necessary steps to correct the deficiencies and/or bring the Removal Action construction into compliance with the approved Final Removal Action Design, any approved design changes, and/or the approved RAWP. If applicable, Respondents shall comply with any schedule provided by the USFS in its notice of deficiency. At Respondents' request, the USFS will conduct a pre-final inspection of the Work after Respondents' submittal of the Draft Final Construction Completion Report to assist Respondents in confirming that the Work has been completed.

7.0 FINAL CONSTRUCTION COMPLETION REPORT

Following completion of the Removal Action construction, a Draft Final Construction Completion Report will be prepared and submitted to the USFS for review and approval to document the work completed and any approved design changes; provide as-built drawings; present data and/or information to demonstrate that Performance Standards have been achieved; list the quantities and types of materials removed off-site or handled on-Site, and the ultimate destination and copies of manifests for those materials; and, to the extent not provided in prior reports, provide the results of data, monitoring, testing and information generated during construction, including confirmation gamma survey and sampling results. A proposed Post Removal Site Control Plan will also be included in the Draft Final Construction Completion Report, which will include proposals for post removal site control, including appropriate institutional controls that would be implemented by the USFS. The Draft Final Construction Completion Report will be submitted to the USFS according to the schedule specified in Section 10.0, or as otherwise agreed to by the USFS and Respondents. The USFS will

approve or require revisions to the Draft Final Construction Completion Report. Respondents shall submit a Final Construction Completion Report that addresses USFS comments.

The Post Removal Site Control Plan will also describe post-construction monitoring, maintenance and inspection activities, including inspections of the Open Pit Repository cover, stormwater and erosion controls, mine portal closures, invasive plant management, and any necessary maintenance. Respondents shall perform inspections, any required maintenance, and monitoring annually for the first three years following completion of construction of the Removal Action. Respondents will also perform post-removal water quality monitoring in Kendrick Creek at a location downstream of the confluence with Mine Fork Creek and the drainage from the 300-Foot Level portal twice a year for the first three years following construction. Thereafter, the USFS will be responsible for any further Site inspections, maintenance, and monitoring.

8.0 ACCEPTANCE OF REMOVAL ACTION COMPLETION

After Respondents have completed the three year post-construction monitoring period, a Final Completion Report will be submitted to the USFS and Respondents shall schedule a Final Site inspection with the USFS for purposes of obtaining Notice of Completion. The inspection must be attended by Respondents and the USFS and/or their representatives. When USFS determines, after its review of the Final Completion Report and the Final Site Inspection, that all Work has been fully performed in accordance with the ASAOC and this SOW, the USFS will provide a written Notice of Completion to Respondents. If the USFS determines that any Work requirements of this SOW have not been completed by Respondents, the USFS will notify Respondents in writing and specify the deficiencies. Respondents shall correct the deficiencies and submit a modified Final Completion Report, in accordance with the provisions of the ASAOC.

9.0 PROGRESS REPORTING

Commencing with the first month following lodging of the ASAOC and until the USFS approves the Removal Action Completion, Respondents shall submit monthly progress reports to the USFS. Monthly progress reports may be submitted by email. The monthly progress reports shall describe activities that took place during the prior reporting period, including:

- a. A description of the work performed;
- b. A summary of all results of sampling, tests, and other data received or generated by Respondents, unless otherwise reported in other deliverables or to be reported in Pre-Design Investigation Reports;
- c. A description of all deliverables that Respondents submitted to the USFS;
- d. A description of all activities relating to Removal Action construction that are scheduled for the next month;
- e. An updated construction schedule, together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule, and a description of efforts taken to mitigate those delays;
- f. A description of any changes or modifications to the Removal Action or schedules, including consultation with the USFS and approval by the USFS, when necessary; and,

- g. A description of activities undertaken by Respondents in support of the Community Involvement Plan during the reporting period and those to be undertaken, as requested by the USFS, if any, in the next month.

10.0 DELIVERABLES AND SCHEDULES

All deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the Schedules set forth below. Respondents shall submit all deliverables to the USFS in the electronic form specified by the USFS. If any deliverable includes maps, drawings, or other exhibits that are larger than 8.5" by 11", Respondentss shall also provide the USFS with paper copies of such exhibits.

Respondents may submit proposed revised Schedules for USFS approval. Upon USFS approval, the revised Schedules supersede the Schedules set forth below, and any previously approved Schedules.

Removal Design Schedule

	Description of Deliverable, Task	Deadline
1	Progress Reports	Monthly, on the 10 th day of each month
2	Data Gaps Evaluation Report	60 days after USFS's Authorization to Proceed under ASAOC
3	USFS Review of Data Gaps Evaluation Report	30 days after submittal of Data Gaps Evaluation Report
4	Pre-Design Investigation Work Plans	Schedule as defined in final approved Data Gaps Evaluation Report
5	USFS Review of Pre-Design Investigation Work Plans	30 days after submittal of each Pre-Design Investigation Work Plan
6	Pre-Design Investigation Reports	Schedule as defined in the Pre-Design Investigation Work Plans
7	USFS Review of Pre-Design Investigation Reports	30 days after submittal of each Investigation Report
8	Preliminary (30%) Removal Design (RD)	120 days after submittal of last Pre-Design Investigation Report
9	USFS Review of Preliminary RD	60 days after submittal of Preliminary RD
10	Pre-final (90/95%) RD	90 days after USFS comments on Preliminary RD
11	USFS Review of Pre-final RD	60 days after submittal of Pre-final RD
12	Final (100%) RD	60 days after USFS comments on Pre-final RD
13	USFS Review of Final RD	30 days after submittal of Final RD

Removal Action Schedule

	Description of Deliverable / Task	Deadline
1	Progress Reports	Monthly, on the 10 th day of each month
2	Removal Action Work Plan	90 days after USFS approval of the Final RD
3	USFS Review of Removal Action Work Plan	60 days after submittal of Removal Action Work Plan
4	Pre-Construction Conference	Schedule as defined in Removal Action Work Plan
5	Start of Construction	Schedule as defined in Removal Action Work Plan
6	Periodic Meetings During Construction	Periodically at USFS request
7	Periodic USFS Site Inspections	Periodically at USFS request.
8	Draft Construction Completion Report Including Post Removal Site Control Plan	90 days after completion of Removal Action Construction
9	USFS Pre-Final Inspection	60 days after submittal of Draft Construction Completion Report
10	USFS Review of Draft Construction Completion Report	60 days after submittal of Draft Construction Completion Report
11	Final Construction Completion Report	90 days after completion of outstanding items identified in Pre-Final inspection and USFS comments on Draft Construction Completion Report
12	Post-Removal Monitoring, Maintenance and Inspection	Schedule as defined in Post Removal Site Control Plan
13	Annual Monitoring, Maintenance and Inspection Reports	45 days after end of reporting year for three years after completion of Removal Action Construction
14	USFS Review and Approval of Draft Annual Reports	30 days after submittal of Draft Annual Reports
15	Draft Final Completion Report	Third and final Annual Report will comprise the Draft Final Completion Report
16	Final USFS Inspection	30 days after submittal of Draft Final Completion Report
17	USFS Comments on Draft Final Completion Report	30 days after Final Inspection
18	Final Completion Report	30 days after completion of any outstanding items identified in Final Inspection and USFS comments on Draft Final Completion Report.
19	USFS Notice of Completion	10 days after submittal of Final Completion Report

11.0 REFERENCES

Senes Consultants Limited (Senes). 2013. Removal Action Excavation Control and Confirmation Plan, Ross-Adams Mine Site, Tongass National Forest, Prince of Wales Island, Alaska. Prepared for Dawn Mining Company and Newmont USA Limited. May 13.

United States Forest Service (USFS). 2018. Non-Time-Critical Removal Action Memorandum.

Worthington Miller Environmental, LLC (WME). 2015. Engineering Evaluation/Cost Analysis, Ross-Adams Mine Site, Tongass National Forest, Prince of Wales Island, Alaska. Prepared for Dawn Mining Company and Newmont USA Limited. April.