KENO HILL SILVER DISTRICT MINING OPERATIONS

RECLAMATION AND CLOSURE PROJECT EXECUTION PLAN

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ACRONYMS AND ABBREVIATIONS

AKHM	Alexco Keno Hill Mining Corp.
CPI	Cost Performance Index
ERDC	Elsa Reclamation and Development Company
FNNND	First Nation of Na-Cho Nyäk Dun
KHSD	Keno Hill Silver District
MDMER	Metal and Diamond Mining Effluent Regulations
OMS	Operation, Maintenance and Surveillance
PEP	Project Execution Plan
QA	Quality Assurance
RCP	Reclamation and Closure Plan
SPI	Schedule Performance Index
WBS	Work Breakdown Structure

1 INTRODUCTION

This Project Execution Plan (PEP) provides the framework for implementing the Reclamation and Closure Plan (RCP) for the Keno Hill Silver District (KHSD) Mining Operations. The plan covers the systematic decommissioning and reclamation of the Onek, Lucky Queen, Bellekeno, Flame & Moth, and New Bermingham mines, along with the District Mill, Dry Stack Tailings Facility (DSTF), and associated infrastructure.

The PEP outlines detailed work packages, schedules, and cost estimates for executing closure activities over an estimated 5-year active reclamation period, followed by 15 years of post-closure monitoring.

1.1 PURPOSE AND SCOPE

This PEP serves as the implementation guide for the RCP (Revision 9, December 2025) for KHSD Mining Operations. It provides:

- Detailed work breakdown structure for all closure activities
- Implementation schedules with quarterly milestones
- Cost estimates organized by activity and timeline
- Governance structure and responsibilities
- Control plans for scope, schedule, and budget management

1.1.1 Document Structure

The PEP follows the Yukon Government's template structure with sections covering:

- Project description and objectives
- Work packages and scheduling
- Project management and governance
- Control plans
- Environmental and regulatory management
- Operations, maintenance, and surveillance requirements

1.1.2 Temporal Scope

This PEP covers active reclamation from mine closure initiation through completion of major earthworks and infrastructure removal (approximately 5 years), transitioning to long-term monitoring and maintenance.

1.2 PROJECT BACKGROUND

1.2.1 Current Status of Site

Alexco Keno Hill Mining Corp. (AKHM), doing business as (dba) Hecla Keno Hill, owns and operates the Keno Hill Silver District Mining Operations, a series of underground silver/lead/zinc mines with a centralized mill. A full description of the project can be found in the RCP (Revision 9, December 2025). As of Q4 of 2025 the following activities are underway:

- Bellekeno Mine: In temporary closure since December 2021; 625 adit discharging and being treated

- Flame & Moth Mine: Active production
- New Bermingham Mine: Active production
- District Mill: Operating at capacity of 400 tpd
- DSTF: Phase I complete with progressive reclamation, Phase II East constructed and tails being placed; Phase II West construction planned for 2026

1.2.2 Mine Development

The KHSD operations have produced over 532,000 tonnes of ore since 2011. Current proven and probable reserves support operations through 2039, after which closure activities will commence.

Table 1-1: Keno Hill Silver District mine operations timeline

2006 – 2008	Alexco Resource Corp. acquires Keno Hill mining camp and begins aggressive surface exploration programs, focus on expansion of Bellekeno resource
2009	Underground development at the Bellekeno Mine
2010	Comprehensive Cooperation and Benefits Agreement signed with FNNND AKHM constructs the mill and surface facilities, and establishes the DSTF
2011	Production at Bellekeno Mine and District Mill Surface exploration at Flame & Moth begins
2012	Development and rehabilitation of Lucky Queen adit Development of new Onek 990 decline
2013	Temporary suspension of Bellekeno Mine operations and milling AKHM monitors KHSD mine sites during care and maintenance
2014 – 2020	Permitting for Flame & Moth and New Bermingham mines Continued surface exploration, advanced underground exploration decline at New Bermingham deposit Decline development at Flame & Moth and New Bermingham mines Care and maintenance and water treatment
2021	Ore production from Bellekeno and New Bermingham mines Camp, surface facilities, and mill upgrades Mine development at Flame & Moth and New Bermingham mines Temporary suspension of Bellekeno Mine operations. Continued surface exploration and water treatment
2022	Ore production at New Bermingham and Flame & Moth mines temporarily suspended Continued mine development at Flame & Moth and New Bermingham mines Continued surface exploration and water treatment
2023 - 2025	Ore production at New Bermingham and Flame & Moth mines Continued mine development at Flame & Moth and New Bermingham mines Construction of DSTF Phase 2 (P2) Construction of Cemented Tails Batch Plant Progressive reclamation of Bellekeno Mine implemented Continued surface exploration and water treatment Expansion of, and upgrades to, Flat Creek Camp Upgrades to mill, water treatment and mine surface infrastructure Improvements to Mill Pond and DSTF water conveyance infrastructure

1.2.3 Plan for Reclamation and Closure

This PEP implements the RCP (Revision 9) as required under QML-0009, incorporating conditions from the August 21, 2025 approval letter.

2 PROJECT DESCRIPTION

2.1 PROJECT GOALS AND OBJECTIVES

AKHM's overall closure objective is to leave the mine site in a safe and stable condition which requires little maintenance or management in the long-term. This comprehensive approach addresses each mine component through systematic achievement of physical stability, chemical stability, minimal long-term active maintenance, minimal safety risks to people and wildlife, and future land use that considers the surrounding landscape, visual aesthetics, and traditional values.

Table 2-1: Fundamental mine reclamation and closure objectives (YG, 2013)

VALUE	RECLAMATION AND CLOSURE OBJECTIVE
Physical Stability	All mine-related structures and facilities are physically stable and performing in accordance with designs. All mine-related structures, facilities and processes can withstand severe climatic and seismic events.
Chemical Stability	Release of contaminants from mine related waste materials occurs at rates that do not cause unacceptable exposure in the receiving environment.
Health and Safety	Reclamation eliminates or minimizes existing hazards to the health and safety of the public, workers and area wildlife by achieving conditions similar to local area features. Reclamation and closure implementation avoids or minimizes adverse health and safety effects on the public, workers and wildlife.
Ecological Conditions and Sustainability	Reclamation and closure activities protect the aquatic, terrestrial and atmospheric environments from mine-related degradation and restore environments that have been degraded by mine- related activities. The mine site supports a self-sustaining biological community that achieves land use objectives.
Land Use	Lands affected by mine-related activities (e.g., building sites, chemical and fuel storage sites, roads, sediment ponds, tailings storage facilities, waste rock storage areas, underground workings, etc.) are restored to conditions that enable and optimize productive long-term use of land. Conditions are typical of surrounding areas or provide for other land uses that meet community expectations.
Aesthetics	Restoration outcomes are visually acceptable.
Socio-economic Expectations	Reclamation and closure implementation avoids or minimizes adverse socio-economic effects on local and Yukon communities, while maximizing socio-economic benefits. Reclamation and closure activities achieve outcomes that meet community and regulatory expectations.
Long-term Certainty	Minimize the need for long-term operations, maintenance and monitoring after reclamation activities are complete.
Financial Considerations	Minimize outstanding liability and risks after reclamation activities are complete.

Table 2-2: Performance Objectives for Key Mine Site Features

THEME	CLOSURE OBJECTIVE	IMPLEMENTATION APPROACH
Water Retention and Sediment Control	Ensure decommissioning of structures provides stable long-term drainage	- Maintain WTP ponds until treatment no longer required -Decommission DSTF collection/diversion structures when appropriate - Dispose materials in approved facilities - Contour and stabilize slopes post-decommissioning

Water Quality	Reduce contamination risk to receiving environments	- Promote geochemical stability where waste rock remains - Manage water to meet receiving environment WQOs - Implement bioreactor and in-situ treatment at Bellekeno - Consider similar treatment for New Bermingham and Flame & Moth if required
Underground Workings	Prevent contamination and ensure safety	- Maintain treatment until WQ compliance achieved - Install rock piles/engineered caps on openings - Implement ground control monitoring - Maintain contingency plans
Acid Rock Drainage	Minimize ML-ARD potential	- Return P-AML waste rock underground - Reduce water/oxygen ingress through compaction/covering - Monitor N-AML remaining on surface - Implement performance monitoring
Tailings Management	Ensure DSTF stability	- Apply soil cover with local growth medium - Revegetate with native seed mix - Monitor cover system, water management, and stability - Continue progressive reclamation
Mine Infrastructure	Ensure safety and stability	- Remove/recycle infrastructure where practical - Identify and remove hazardous materials - Dispose materials in approved facilities
Revegetation	Establish self-sustaining vegetation	- Conduct field trials for succession monitoring - Apply EMR's Yukon Mine Site Reclamation Policy - Achieve erosion control objectives

2.2 KEY STAKEHOLDERS AND GOVERNMENTS

- Hecla Yukon (AKHM parent company)
- First Nation of Na-Cho Nyäk Dun (FNNND)
- Yukon Government - Energy, Mines and Resources
- Yukon Water Board
- Environment and Climate Change Canada
- Community of Keno City
- Community of Mayo
- Elsa Reclamation and Development Company (ERDC)

2.3 FIRST NATIONS

FNNND is the primary affected First Nation with traditional territory encompassing the entire project area. AKHM is committed to advancing closure objectives through meaningful collaboration with FNNND, recognizing that successful mine closure requires the integration of Indigenous knowledge, values, and priorities throughout the planning process.

Engagement with FNNND includes:

- Development of closure objectives aligned with FNNND priorities
- Integration of traditional knowledge in closure planning
- Development of completion criteria and monitoring requirements
- Ongoing consultation through the Technical Working Group

2.4 PROJECT SCOPE

This PEP implements closure for all AKHM-operated facilities within the KHSD Mining Operations:

Underground Mines:

- Bellekeno (East Portal, 625 Adit, 200 Level Vent Raise)
- Flame & Moth (Portal and Vent Raise)
- New Bermingham (Portal and Vent Raise)
- Lucky Queen (existing infrastructure only)
- Onek 990 (existing infrastructure only)

Surface Infrastructure:

- District Mill and crushing plant
- Dry Stack Tailings Facility (Phases I and II)
- Water treatment plants and settling ponds
- Waste rock storage facilities and disposal areas
- Roads, bridges, and power infrastructure
- Flat Creek Camp (downsizing to pre-production levels)

2.5 ASSUMPTIONS

Technical Assumptions:

- Static water levels and discharge predictions remain as modeled
- In-situ treatment effectiveness matches Silver King pilot results
- P-AML waste rock volumes allow complete underground disposal
- Progressive reclamation continues during operations

Implementation Assumptions:

- AKHM (dba Hecla Yukon) maintains financial capacity throughout closure
- Existing infrastructure utilized for closure activities where beneficial
- Care and maintenance crew transitions to closure implementation team
- QML-0009 and QZ18-044 remain primary regulatory license (Licenses are expected to be amended following an environmental assessment prior to the end of mine life; these amendments will require an update to this plan)
- ERDC district closure activities continue independently
- Local and First Nation employment prioritized for closure work
- Local and First Nation partnered contractors prioritized for closure work

Coordination Assumptions:

- Shared watershed management coordinated with ERDC
- Cumulative effects assessments consider both operations
- Technical knowledge shared between projects
- Independent financial responsibility maintained

3 PROJECT DEFINITION

3.1 WORK PACKAGES

3.1.1 Engineering Work Packages

Table 3-1 Engineering Work Packages

EWP-01: Water Management Design	Final design for in-situ treatment systems (Bellekeno, New Bermingham) Bioreactor detailed engineering Portal closure designs Cover system engineering for DSTF
EWP-02: Infrastructure Decommissioning	Mill demolition sequencing Electrical/mechanical decommissioning plans Hazardous materials assessments Salvage value determinations
EWP-03: Earthworks Design	Final grading plans for all disturbed areas Erosion control designs Road decommissioning plans Growth media placement specifications

3.1.2 Construction Work Packages

3.1.2.1 Site Operations Work Packages

Table 3-2 Site Operations Work Packages

SOP-01: Water Treatment Operations	Bellekeno 625 WTP operation New Bermingham WTP operation Flame & Moth pond management

	Water quality monitoring
SOP-02: Site Maintenance	Road maintenance Snow removal Waste Management Facilities Maintenance
SOP-03 Camp Food and Housekeeping Services	Janitorial and housekeeping services Food services

3.1.2.2 Civil Earthwork Packages

Table 3-3 Civil Earthworks Packages

CEP-01: Mine Site Earthworks	Portal closure construction WRDA recontouring Access road decommissioning Growth media placement
CEP-02: Mill Site Earthworks	Foundation removal Site grading Pond decommissioning Final contouring
CEP-03: DSTF Earthworks	Final contouring Erosion control features

3.1.2.3 Civil Infrastructures Packages

Table 3-4 Civil Infrastructure Packages

CIP-01: Water Treatment Infrastructure	In-situ treatment system installation Bioreactor construction Coffer dam installations
CIP-02: Decommissioning and Demolition	Mill building demolition Infrastructure removal Electrical substation decommissioning Bridge removal

3.1.2.4 Technical Work Packages

Each technical work package would be procured following detailed scoping, with deliverables including sealed engineering drawings, technical specifications, and construction-ready documentation meeting Yukon regulatory requirements.

Table 3-5 Technical Work Packages

TWP-01: In-Situ Mine Water Treatment Design and Testing	Detailed engineering for Bellekeno 625 in-situ treatment system Design of carbon injection infrastructure and monitoring systems New Bermingham in-situ treatment conceptual and detailed design Integration with existing mine infrastructure	IFC drawings for injection systems P&ID diagrams Operations and maintenance manuals Performance monitoring protocols
TWP-02: Bioreactor Engineering	Bellekeno 625 bioreactor detailed design (converting existing ponds) Mill pond bioreactor design (contingency for DSTF seepage)	Construction drawings Technical specifications Material requirements

	Hydraulic design and flow distribution systems Substrate selection and procurement specifications	Operating procedures
TWP-03: Portal and Adit Closure Engineering	Bellekeno East portal rock fill closure design Bellekeno 625 coffer dam final design and grate system Bellekeno 200 Level raise closure Flame & Moth portal closure (rock pile design) Flame & Moth raise closure New Bermingham portal closure with French drain New Bermingham raise closure Lucky Queen adit closure with drainage Onek adit closure	Engineered closure drawings for each opening Construction specifications
TWP-04: DSTF Cover System Design	Phase I and II cover system detailed design Growth media placement specifications Surface water conveyance structures Erosion control features Performance monitoring instrumentation design	Cover system cross-sections and grading plans Instrumentation layout and specifications Revegetation prescriptions Construction drawings
TWP-05: Waste Rock Storage Area Closure Design	WRDA recontouring and grading plans P-AML WRSF decommissioning procedures Surface water management for closed WRDAs	Final grading plans for each WRDA Construction sequencing plans

TWP-06: Infrastructure Decommissioning Engineering	Mill building demolition sequencing and methodology Crusher plant dismantling procedures Electrical substation decommissioning plans Foundation removal/burial specifications Hazardous materials assessment and abatement plans	Salvage value assessments Hazardous materials management plans Site restoration drawings
TWP-07: Water Management Infrastructure	WTP decommissioning sequences Pond closure designs and procedures Pipeline decommissioning procedures Post-closure water conveyance design	Final grading plans Long-term drainage plans
TWP-08: Roads and Bridges Decommissioning	Lightning Creek bridge removal engineering Culvert removal procedures and bank stabilization Road decommissioning cross-sections Water bar (cross-ditch) placement design Erosion control specifications	Bridge removal plans and procedures Road reclamation typical sections Drainage feature designs Scarification specifications
TWP-09: Geotechnical Investigations and Design	Crown pillar stability assessments DSTF stability analysis for closure configuration Waste rock pile stability evaluations Permafrost assessment beneath key structures Subsidence risk evaluation	Geotechnical investigation reports Stability analyses Risk assessments Monitoring recommendations

TWP-10: Environmental Site Assessment	Phase II ESA for contaminated soil delineation Remediation design for identified contamination Land treatment facility design (if required) Verification sampling plans	ESA reports Remediation action plans Closure verification protocols
TWP-11: Revegetation Program Design	Native seed mix specifications Growth media characterization Metal uptake assessment protocols Field trial design and monitoring plans Progressive reclamation prescriptions	Revegetation specifications by area Monitoring protocols Success criteria definitions Adaptive management procedures
TWP-12: Long-term Monitoring System Design	Surface water monitoring network optimization Groundwater monitoring well network design Geotechnical monitoring instrumentation	Monitoring network drawings Update instrumentation specifications Data management systems Reporting templates
TWP-13: Closure Water Quality Modeling	Predictive water quality modeling for mine pools DSTF seepage quality predictions Receiving environment impact assessments Treatment system performance modeling Climate change sensitivity analysis	Water quality models Impact assessment reports Treatment design basis Uncertainty analysis

3.1.2.5 Project Controls and Administration Work Packages

These work packages provide the management framework and administrative systems essential for successful closure implementation. AKHM will execute these packages internally using Hecla staff, leveraging existing corporate systems and site-specific expertise.

Pre-Execution Gap Analysis:

Prior to PEP implementation, AKHM will conduct a gap analysis to:

- Evaluate existing operational systems against closure requirements
- Identify necessary adaptations for the transition from operations to reclamation
- Update procedures for closure-specific needs (contractor management, milestone tracking, long-term documentation)

Key Adaptations:

- Financial systems: From production to project-based cost tracking
- Progress measurement: From operational metrics to closure milestones
- Stakeholder engagement: Enhanced consultation tracking
- Document control: Expanded retention for long-term stewardship

Minimal effort is expected to be required to adapt the current systems for closure activities.

Table 3-6 Project Controls and Administration Work Packages

PCA-01: Project Management Office (PMO) Setup	Establish project governance structure Develop project charter and execution strategy Create project management procedures and templates Set up project communication protocols Establish document control system
PCA-02: Project Controls System Implementation	Implement earned value management system Establish WBS and cost coding structure Set up schedule management tools

	Create progress measurement system Develop change management procedures
PCA-03: Procurement Management	Develop procurement strategy for all work packages Create contractor prequalification criteria Establish tender evaluation procedures Set up contract administration processes Develop local/First Nation procurement targets
PCA-04: Financial Management and Reporting	Establish cost accounting procedures Set up invoice processing systems Create financial reporting templates Develop cash flow management procedures Establish security drawdown protocols
PCA-05: Stakeholder Engagement Program	Develop comprehensive engagement plan Create consultation tracking system Establish grievance mechanism Plan public information sessions Coordinate FNNND technical meetings
PCA-06: Regulatory Compliance Management	Create regulatory requirements register Establish permit tracking system Develop compliance calendar Set up inspection readiness procedures Create non-compliance response protocols
PCA-07:	Develop project quality management plan

Quality Assurance/Quality Control Program	Create inspection and test plans Establish material approval procedures Set up non-conformance reporting Define acceptance criteria
PCA-08: Health, Safety and Environmental Management	Develop project-specific HSE plan Create safe work procedures Establish incident reporting system Set up environmental monitoring protocols Plan emergency response procedures
PCA-09: Risk Management Program	Conduct comprehensive risk assessment Develop risk register and matrices Create risk mitigation strategies Establish contingency management Set up risk monitoring procedures
PCA-10: Information Management System	Establish document management system Create data management protocols Set up collaboration platforms Develop records retention procedures Plan knowledge transfer process
PCA-11: Contractor Management	Develop contractor orientation program Create performance measurement system Establish dispute resolution procedures Set up contractor coordination protocols

	Plan demobilization procedures
PCA-12: Progress Monitoring and Reporting	Establish progress measurement criteria Create reporting templates and dashboards Set up photography/drone documentation Develop milestone tracking system Plan executive reporting
PCA-13: Transition Planning	Develop operations to closure transition plan Create knowledge transfer protocols Plan workforce transition Establish asset disposition procedures Set up long-term monitoring transition
PCA-14: Project Closeout Administration	Develop project closeout procedures Create lessons learned process Plan final documentation packages Establish warranty management Set up post-project reviews
PCA-15: Local Employment and Training	Develop local hire program Create training needs assessment Establish skills development programs Set up employment tracking Plan succession strategies
PCA-16:	Coordinate monitoring programs Establish data quality procedures

Environmental Monitoring Coordination	Set up laboratory contracts Create reporting schedules Plan adaptive management reviews

3.1.3 Work Breakdown Structure

Table 3-7: Work breakdown structure Level 1 cost codes

LEVEL 1 CATEGORY	LEVEL 1 ACTIVITY
1	Site Operations
2	Consultation
3	Regulatory
4	Investigation, Assessment and Engineering
5	Remediation (all construction work packages)
6	Monitoring
7	Project Management (includes administration, procurement, reporting, invoicing and project controls)

3.2 RECLAMATION AND CLOSURE SCHEDULE

Table 3-8: Annual project summary

YEAR	YEAR SUMMARY OF MINING ACTIVITIES
2040	Execute Site Operations Work Packages to ensure water treatment plant operations, site maintenance and camp food and housekeeping services are in place. Complete the scope of all the Technical Work Packages and initiate completion of the engineering followed by the construction work packages. Complete plans for demobilizing infrastructure not required for final closure project activities.
2041	Continue to manage water treatment plant operations, site maintenance and camp food and housekeeping services. Complete engineering and construction work plans for projects which the necessary documentation is available for. (Plans requiring as-built drawings from earlier phases will be completed once those as-builts become available) Initiate demobilization of infrastructure and demolition of the mill and crushing plant.
2042	Continue to manage site maintenance and camp food and housekeeping services. Initiate the transition of water treatment to passive systems. Complete portal closures at Lucky Queen and Onek. Recontour Lucky Queen, Onek and Bellekeno waste rock disposal areas. Complete infrastructure removal and demolition and remove mill and other foundations associated with infrastructure. Complete DSTF final contouring, erosion control features and growth media placement. Construct water management infrastructure at Bellekeno, Flame & Moth and Bermingham.
2043	Continue to manage water treatment plant operations, site maintenance and camp food and housekeeping services. Recontour Flame and Moth and Bermingham waste rock disposal areas. Initiate growth media placement. If required construct the Mill Pond Bioreactor. Initiate update to closure water quality modelling.
2044	Complete the transition of water treatment systems to passive treatment systems. Decommission or close up camp facilities following completion of projects. Complete final portal and raise closure activities at Bellekeno, Flame and Moth and New Bermingham. Decommission access roads and bridge as defined in the RCP. Final contouring and placement of growth media. Final infrastructure removal, electrical substation removal.
2045-2060	Implement the long term monitoring system design.

Table 3-9: Quarterly project schedule

Planning and engineering activities
Project execution

		Pre-Closure	2040				2041				2042				2043				2044				2045-2060
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Project Controls and Administration Work Packages																							
PCA-01	Project Management Office (PMO) Setup																						
PCA-02	Project Controls System Implementation																						
PCA-03	Procurement Management																						
PCA-04	Financial Management and Reporting																						
PCA-05	Stakeholder Engagement Program																						
PCA-06	Regulatory Compliance Management																						
PCA-07	Quality Assurance/Quality Control Program																						
PCA-08	Health, Safety and Environmental Management																						
PCA-09	Risk Management Program																						
PCA-10	Information Management System																						
PCA-11	Contractor Management																						
PCA-12	Progress Monitoring and Reporting																						
PCA-13	Transition Planning																						
PCA-14	Project Closeout Administration																						
PCA-15	Local Employment and Training																						
PCA-16	Environmental Monitoring Coordination																						
Technical Work Packages																							
TWP-01	In-Situ Mine Water Treatment Design and Testing																						
TWP-02	Bioreactor Engineering																						
TWP-03	Portal and Adit Closure Engineering																						
TWP-04	DSTF Cover System Design																						
TWP-05	Waste Rock Storage Area Closure Design																						
TWP-06	Infrastructure Decommissioning Engineering																						
TWP-07	Water Management Infrastructure																						
TWP-08	Roads and Bridges Decommissioning																						
TWP-09	Geotechnical Investigations and Design																						
TWP-10	Environmental Site Assessment																						
TWP-11	Revegetation Program Design																						
TWP-12	Long-term Monitoring System Design																						
TWP-13	Update Closure Water Quality Modeling																						
Engineering Work Packages																							
EWP-01	*Water Management Design*																						
	Engineering Scopes and RFPs																						
	Engineering																						
EWP-02	*Infrastructure Decommissioning*																						
	Mill Demolition Sequencing																						
	Electrical/mechanical decommissioning plans																						
	Hazardous Materials Assessment																						
	Salvage Value Determinations																						
EWP-03	*Earth Works*																						
	Engineering Scopes and RFPs																						
	Engineering																						

Table 3-10: Quarterly project schedule (continued)

Planning and engineering activities
Project execution

		Pre-Closure	2040				2041				2042				2043				2044				2045-2060
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Construction Work Packages																							
Site Operations Work Packages																							
SOP-01	Water Treament Plant Operations																						
SOP-02	Site Maintenance																						
SOP-03	Camp Food and Housekeeping Services																						
Civil Earth Works Packages																							
CEP-01	Mine Site Earthworks																						
	Portal and Raise Closure Construction																						
	Lucky Queen																						
	Onek																						
	Bellekeno																						
	Flame and Moth																						
	Bermingham																						
	Waste Rock Disposal Area Recontouring																						
	Lucky Queen																						
	Onek																						
	Bellekeno																						
	Flame and Moth																						
	Bermingham																						
	Access Road Decommissioning																						
	Growth Media Placement																						
CEP-02	Mill Site Earthworks																						
	Foundation Removal																						
	Site Grading																						
	Pond Decommissioning																						
	Final Contouring																						
CEP-03	DSTF Earthworks																						
Civil Infrastructures Packages																							
CIP-01	Water Treatment Infrastructure																						
	Bellekeno																						
	Flame & Moth																						
	Bermingham																						
	Mill Pond Contingency Bioreactor																						
CIP-02	Decommissioning and Demolition																						
	Mill Building Demolition																						
	Instrastructure Removal																						
	Final Infrastructure Removal																						
	Electrical Substation Decommissioning																						
	Bridge Removal																						

3.3 PROJECT COST AND CASH FLOW

The cost estimate is developed based on equipment, labor, and materials costs to conduct earthwork, revegetation, demolition, water treatment, monitoring, and other reclamation activities designed and authorized to create a physically and chemically stable post-mining environment. All costs are assumed for the Life-of-Mine disturbance footprints and facility configurations. Cost bases were developed from unit costs quotes provided by local third-party vendors where possible. Where practicable, including employee transport, camp operating costs, and electrical power, current (average same year) rates paid by AKHM were assumed. Published ratings for equipment productivity (Caterpillar, 2022) were used to calculate costs per unit area and timeframes needed for each reclamation task such as grading or hauling. Sizes of areas or facilities to be reclaimed are based on field survey of disturbance, authorized design drawings, and georeferenced mapping as appropriate. Where needed, adjustments for inflation are included pending vintage of available vendor quotes (Statista, 2025; TD Economics, 2025). Accommodations are also included for Net Present Value of projected costs (Bank of Canada, 2025).

Table 3-5 presents a summary of expenses for components of Project reclamation. Listing and explanation of each of the activities calculated within each component are included in Sections 3.3.1 through 3.3.7, inclusive. Comprehensive calculations detailing source data and methods for each component are included in the RCP (Revision 9, December 2025) for KHSD Mining Operations.

3.3.1 Site Operations

Reclamation costs included in the Site Operations component category include supervisory staff time, heavy equipment mobilization and demobilization, employee transport, flights, electric power and heat, supplies, tools, and equipment, and general administrative expenses.

3.3.2 Consultation

Costs include allocation for First Nation and community consultation.

3.3.3 Regulatory

Regulatory costs include inspections, updating of plans for authorization, reporting, communications, and projected inflation.

3.3.4 Investigation, Assessment and Engineering

Investigation, Assessment, and Engineering components include engineered designs for bioreactor, reclamation specifics, and water treatment systems. Research to complete the closure plan is also included.

3.3.5 Remediation

Remediation includes demolition and loading and hauling of associated debris, earthwork (grading, ripping, cover placement), revegetation, signage, plugs for underground openings, equipment removal, hazardous materials handling and disposal, service disconnection, stormwater diversion structure construction, culvert removal, erosion control, water treatment expenses, and all associated labor and equipment time. Remediation costs include indirect and contingency costs.

3.3.6 Monitoring

Monitoring costs include sampling, laboratory analyses and material characterization. Monitoring includes biological, groundwater, geotechnical, and foundation monitoring for up to 15 years post-closure. Monitoring costs include associated indirect and contingency costs. Schedules for monitoring are determined by licence.

3.3.7 Project Management

Project Management includes pre-, active, and post-closure project management and associated labor.

Table 3-11: Summary of the total expected cost of reclamation

COMPONENT	EXPECTED COST ($CDN)
Site Operations	$2,868,521.97
Consultation	$90,000.00
Regulatory	$442,370.75
Investigation, Assessment and Engineering	$421,615.93
Remediation	$6,774,387.50
Monitoring	$1,858,345.95
Project Management	$1,054,829.64
Total Expenditure	$13,510,071.74

Table 3-12: Project capital cost estimate ($CDN)

COMPONENT	2040	2041	2042	2043	2044	2045-2060
Site Operations	$87,522	$268,152	$746,085	$727,428	$770,479	$268,857
Consultation	$16,000	$16,000	$16,000	$16,000	$16,000	$10,000
Regulatory	$71,091	$16,327	$48,061	$16,327	$53,830	$236,735
Investigation, Assessment and Engineering	$99,621	$275,405	$9,545	$20,122	$6,924	$10,000
Remediation	-	$415,832	$657,668	$495,807	$9,602	-
Civil Earthworks						
Bellekeno Facilities	-	-	$62,238	-	$59,704	-
Onek Facilities	-	-	$26,992	-	-	-
Lucky Queen Facilities	-	-	$10,176	-	$14,662	-
Flame and Moth Facilities	-	-	$17,327	-	$240,100	-
Bermingham Facilities	-	-	-	$42,528	$189,691	-
Borrow Areas	-	-	$10,539	-	-	-
Coarse Ore Pad	-	-	$1,028	-	-	-
Mill Pad	-	$28,285	$28,285	-	-	-

COMPONENT	2040	2041	2042	2043	2044	2045-2060
Dry Stack Tailings Facility	-	-	$239,845	-	-	-
Landfill	-	-	-	-	$9,966	-
Roads	-	-	-	-	$58,727	-
Diversion Ditches	-	-	-	$13,660		-
Civil Infrastructure						
Bellekeno Facilities	-	-	$143,517	-	$55,863	-
Onek Facilities	-	-	$6,094	-	-	-
Lucky Queen Facilities	-	-	$30,039	-	-	-
Flame and Moth Facilities	-	-	$2,250	$64,911	$34,377	-
Bermingham Facilities	-	-	-	$80,681	$34,377	-
Coarse Ore Pad Infrastructure	-	-	$18,702	-	-	-
Mill and Ancilliary Facilities Demolition	-	$263,472	$263,472	-	-	-
Warehouse Demolition	-	$28,488	$28,488	-	-	-
Mixing Plant Demolition	-	$23,347	$23,347	-	-	-
Camp Downsize	-	-	-	-	$28,849	-
Implementation Indirect Costs	$41,135	$200,296	$358,454	$221,620	$237,473	$48,433
Implementation Contingency Costs	$71,301	$347,180	$621,321	$384,141	$411,619	$68,480
Monitoring	$349,115	$73,827	$92,440	$81,858	$67,475	$1,193,630
Project Management	$112,871	$222,990	$222,990	$222,990	$222,990	$50,000
TOTAL EXPENDITURE	$848,656	$2,179,599	$3,684,901	$2,388,073	$2,522,708	$1,886,134

4 PROJECT MANAGEMENT AND GOVERNANCE

4.1 SCOPE

This section defines the governance structure, roles, and responsibilities for RCP implementation.

4.2 KEY DOCUMENTS

- Reclamation and Closure Plan (Rev 9)
- QML-0009, and associated permits
- Hecla corporate policies and procedures
- Yukon mining regulations
- Project-specific management plans

4.3 CONSTRUCTION EXECUTION MANAGEMENT STRATEGY

AKHM will implement a hybrid execution strategy that leverages both internal operational expertise and specialized external contractors to deliver the closure program efficiently and safely. This approach recognizes that while AKHM possesses deep site knowledge and operational experience, certain closure activities require specialized expertise and equipment not maintained during regular operations. The strategy prioritizes continuity by retaining the key engineering firms that developed the RCP, ensuring seamless knowledge transfer from planning through implementation. These firms, including Tetra Tech Canada Inc. as the Engineer of Record, bring established understanding of site conditions, design intent, and regulatory requirements that will minimize rework and accelerate project delivery.

Central to the execution strategy is maximizing local and First Nation employment opportunities, building on the existing relationships established through the Comprehensive Cooperation and Benefits Agreement with FNNND. This commitment extends beyond direct employment to include preferential contracting opportunities for First Nation-partnered businesses and comprehensive skills development programs that create lasting economic benefits for local communities. The strategy recognizes that local workers bring valuable site familiarity, reduce project costs through lower mobilization expenses, and strengthen community support for closure activities.

Quality assurance will be maintained through engagement of an independent review engineer who will provide third-party verification of design implementation, construction quality, and performance criteria achievement. This independent oversight, combined with AKHM's internal technical review processes, ensures that closure objectives are met while maintaining the flexibility to adapt to changing field conditions. The review engineer will participate in key milestone reviews, witness critical construction activities, and provide certification necessary for progressive security reduction applications, thereby protecting both environmental outcomes and AKHM's financial interests throughout the closure implementation.

4.4 PROJECT GOVERNANCE ROLES AND RESPONSIBILITIES

4.4.1 Project Execution Roles and Responsibilities

Table 4-1: Project Execution Team Roles and Responsibilities

ROLE	ACTIVE RECLAMATION PHASE KEY FUNCITIONS
Hecla Director of Closed Operations	*Responsible for the overall delivery of the project and funding approval*
Project Manager	*Owner of the PEP* *Operation level scope and budget Coordination* *Contract management including administrative management of contracts, management of workloads and delivery* *Project budget and scope tracking (life of project) Regulatory authorizations* *Responsible for water treatment operations, managing camp and maintenance services.*
Technical Services Manager	*Engineer oversight, design approval* *Review and approve or recommend technical scope changes Technical resource and guidance as required by project team Interface with SFN technical group, other stakeholders as required* *Providing IFC designs for implementation of closure plan, technical specifications for contracting* *QA/QC* *Contract completion (field turnover), post construction operating, maintenance, and surveillance*
Health Safety and Environment Manager	*Overall responsibility for site including all regulatory requirements* *Compliance and commitments, monitoring and reporting, future regulatory requirements, coordination of technical studies, liaison with Regulators and First Nations for information sharing, incident management.* *Overall responsibility for security of site* *Regulatory, First Nations, management, project team, communities, public and media*
Construction Manager	*Reports to Project Manager* *Overall site-based construction project leadership* *Planning and execution of construction work packages, contracts, contractor management, field activities* *Delivery to project scope, schedule, budget, forecasting, close out reporting Oversight of quality assurance and quality control*
Financial Controller	*Ensuring annual budgets are secured and available for the project Provide financial reporting* *Providing project level reporting of expenditures and variances and projections (monthly reporting)*
Engineer on Record **(engineering consultant)**	*Stamps, seals, and assumes professional liability for all engineering designs, ensuring compliance with codes, standards, and regulations.* *Reviews and approves design modifications, field changes, and provides authoritative interpretation of design intent during construction* *Establishes inspection requirements, reviews contractor submittals, and certifies construction conformance with approved designs* *Identifies technical risks, develops mitigation measures, and recommends corrective actions based on performance monitoring*
Environmental Consultant(s)	*Provide scientific environmental support for environmental assessments, monitoring programs, and revegetation programs.*

ROLE	ACTIVE RECLAMATION PHASE KEY FUNCITIONS
FNNND Technical Consultant	*Participate in review of projects and environmental monitoring.*

4.4.2 Engineer of Record and Responsible Engineer

Tetra Tech Canada Inc. is the engineer of record for all geotechnical works associated with this project as of this documentation publication date.

4.4.3 Quality Management

Quality Assurance (QA) requirements and procedures shall be specifically defined within each technical work package to ensure deliverables meet project specifications and industry standards. The Technical Services Engineer holds primary responsibility ensuring QA requirements are implemented and maintained throughout the project lifecycle. This includes package-specific QA plans, establishing inspection and testing protocols, conducting regular quality reviews, documenting compliance with applicable codes and standards, and coordinating with discipline leads to verify that all technical deliverables undergo appropriate quality checks before submission. The Technical Services Engineer will also maintain the project QA register, tracking all quality-related activities, non-conformances, and corrective actions to ensure continuous improvement and adherence to the project's quality objectives.

4.5 OTHER COMMITTEES AND REVIEWS

4.5.1 Project Management Steering Committee

The KHSD Closure Project Management Steering Committee (CPSC) will serve as the senior governance body overseeing closure implementation. This committee provides strategic direction, ensures alignment with corporate objectives, and maintains oversight of technical, financial, and stakeholder commitments throughout the project lifecycle.

Committee Composition:

- Hecla Director of Closed Operations (Chair)
- FNNND designated representative(s)
- Hecla Director of Finance
- Hecla Corporate VP of Sustainability
- Project Manager (Secretary, non-voting)
- Technical Services Manager (non-voting)

Primary Responsibilities:

Financial Oversight:

- Review and approve annual budgets and quarterly forecasts
- Monitor project expenditures against approved budgets
- Authorize security drawdowns in compliance with regulatory requirements
- Approve change orders exceeding Project Manager authority limits

- Review financial risk exposure and mitigation strategies

Project Performance:

- Review monthly progress reports and key performance indicators
- Assess schedule performance and critical path activities
- Evaluate contractor performance and dispute resolutions
- Monitor compliance with regulatory commitments and permit conditions
- Review quality assurance audit results and corrective actions

Risk Management:

- Quarterly review of project risk register
- Assess emerging risks and approve mitigation strategies
- Review incident reports and lessons learned
- Oversee implementation of corrective action plans
- Monitor insurance and bonding adequacy

Stakeholder Relations:

- Ensure FNNND engagement commitments are met
- Review community feedback and grievance resolution
- Approve external communications strategies
- Monitor socio-economic performance indicators

Meeting Frequency:

- Quarterly during active construction phases
- Bi-Annually during monitoring and maintenance phases
- Ad-hoc meetings for critical decisions or incidents

Reporting: The CPSC reports quarterly to the Hecla Board of Directors and provides regular updates to:

- Yukon Government (EMR) as required under QML-0009
- Yukon Water Board for major scope changes
- FNNND Chief and Council through established protocols

Decision Authority: The Committee maintains authority to:

- Approve annual work plans and budgets
- Authorize major scope changes
- Direct corrective actions for non-conformances
- Approve contractor selection for major work packages
- Endorse regulatory submissions affecting closure strategy

This governance structure ensures integrated decision-making that balances technical requirements, financial constraints, regulatory compliance, and stakeholder interests while maintaining clear accountability for project success.

4.5.2 Other Consultation

Beyond the formal governance structure, AKHM will maintain a comprehensive consultation program throughout closure implementation to ensure meaningful engagement with affected communities and rights holders.

First Nation of Na-Cho Nyäk Dun (FNNND) Engagement:

AKHM will conduct regular consultation with FNNND through multiple forums:

- **Technical Working Group:** Monthly meetings during active closure to review technical plans, monitoring results, and adaptive management decisions
- **Community Information Sessions:** Quarterly presentations in Mayo to provide updates on closure progress and gather community input
- **Elder and Traditional Knowledge Holders:** Seasonal meetings to incorporate traditional knowledge into revegetation planning and end land use objectives

Keno City Community Consultation:

Recognizing Keno City's proximity to the District Mill and specific interest in the DSTF visual amenity, AKHM will establish:

- **Community Advisory Committee:** Meetings to be held during DSTF cover design and construction to review design options and visual impact mitigation
- **Public Information Sessions:** Quarterly updates at the Keno City Community Centre on overall project progress
- **Site Tours:** Semi-annual opportunities for residents to observe reclamation progress

Consultation Objectives:

These engagement activities will:

- **Information Sharing:** Provide regular updates on closure progress, upcoming activities, and monitoring results through accessible formats and plain language
- **Design Input:** Seek feedback on closure designs that affect community interests, particularly visual aspects, recreational access, and traditional use areas
- **Early Warning:** Notify communities of activities that may cause temporary disruptions (blasting, heavy traffic, dust generation)
- **Adaptive Management:** Gather input on material changes to closure plans or unexpected conditions requiring modified approaches
- **Knowledge Exchange:** Share technical information and learn from local observations of environmental conditions
- **Grievance Resolution:** Address concerns promptly through established feedback mechanisms

Consultation Tools and Methods:

- Community newsletters distributed to all Keno District mailboxes
- Social media updates for time-sensitive information

- Open houses with visual displays and interactive materials
- Small group meetings for detailed technical discussions

Feedback Integration:

All consultation input will be:

- Documented in a consultation database
- Reviewed by the project team for incorporation into designs
- Responded to within 30 days with rationale for decisions
- Reported annually to demonstrate how community input shaped outcomes

Material Change Consultation:

When material changes to the closure plan are required, AKHM will:

- Provide 30-day advance notice to FNNND and Keno City
- As required hold special information sessions explaining the change rationale
- Document feedback and concerns
- Submit consultation summaries with any regulatory amendment applications

This comprehensive consultation program ensures that closure implementation remains responsive to community needs and values while building long-term relationships essential for successful site relinquishment.

5 CONTROL PLAN

5.1 SCOPE

The Control Plan establishes the framework for managing project delivery to approved scope, schedule, and budget while maintaining quality, safety, and regulatory compliance. This integrated control system ensures transparent decision-making, proactive issue resolution, and continuous performance improvement throughout the closure implementation.

The Project Manager owns this Control Plan, with support from the Project Controls Manager and technical discipline leads.

5.2 KEY DOCUMENTS

The control framework is anchored by:

- RCP (Revision 9, December 2025)
- QML-0009 Schedule C conditions
- QZ-018 Water Licence conditions
- Project charter and execution strategy
- Detailed engineering packages (as developed)
- Hecla project and contractor management standards
- Hecla safety critical risk controls and environmental standards
- Yukon regulatory guidelines for closure

5.3 RESPONSIBILITIES

The Hecla General Manager is responsible for the overall implementation of a control plan and ensuring appropriate delegation.

Project Manager

- Overall system implementation, performance measurement, change management, and reporting
- Schedule maintenance, critical path analysis, and resource leveling

Financial Controller

- Budget tracking, variance analysis, and forecast updates

Technical Services Manager

- Scope definition, technical change evaluation, and quality oversight
- Configuration management, version control, and records retention

Health, Safety and Environment (HSE) Manager

- Ensuring all regulatory obligations are met and required records retained

- Engagement tracking

Construction Manager

- Ensuring all regulatory obligations are met and required records retained

5.4 WORK BREAKDOWN STRUCTURE

Table 5-1: Work breakdown structure – Level 1 and 2

WORK BREAKDOWN STRUCTURE AREA	SCOPE OF WORK	RESPONSIBLE PARTY	ACCOUNTABLE PARTY
Site Operations (100 series)			
Task 110	Water treatment operations	Operations Supervisor	Project Manager
Task 120	Environmental monitoring	Environment Coordinator	HSE Manager
Task 130	Site security and access control	Health and Safety Coordinator	HSE Manager
Task 140	Equipment maintenance	Maintenance Supervisor	Construction Manager
Task 150	Utilities and camp services	Operations Supervisor	Project Manager
Task 160	Emergency preparedness and response	Health and Safety Coordinator	HSE Manager
Consultation (200 Series)			
Task 210	FNNND engagement activities	HSE Manager	Project Manager
Task 220	Keno City consultation	HSE Manager	Project Manager
Task 230	Regulatory liaison	HSE Manager	Project Manager
Regulatory (300 Series)			
Task 310	Compliance monitoring	Environmental Coordinator	HSE Manager
Task 320	Regulatory reporting	Environmental Coordinator	HSE Manager
Task 330	Permit applications and amendments	Environmental Coordinator	HSE Manager
Investigation, Assessment and Engineering (400 Series)			
Task 410	Geotechnical investigations	Engineer Consultant	Technical Services Manager
Task 420	Environmental site assessments	HSE Manager	Project Manager
Task 430	Engineering design packages	Engineer Consultant	Technical Services Manager
Task 440	Technical studies and modeling	Engineer Consultant	Technical Services Manager
Remediation (500 Series)			
Task 510	Underground closure works	Construction Supervisor	Construction Manager
Task 520	Surface earthworks	Construction Supervisor	Construction Manager

Task 530	Infrastructure demolition	Construction Supervisor	Construction Manager
Task 540	Water treatment systems	Construction Supervisor	Construction Manager
Task 550	Revegetation works	Construction Supervisor	Construction Manager
Monitoring (600 Series)			
Task 610	Surface and ground water quality monitoring	Environmental Coordinator	HSE Manager
Task 620	Geotechnical monitoring	Engineer	Technical Services Manager
Task 630	Biological monitoring	Environmental Coordinator	HSE Manager
Project Management (700 Series)			
Task 710	Project controls	Project Manager	General Manager
Task 720	Procurement and contracts	Procurement Coordinator	Project Manager
Task 730	Quality management	Engineer	Technical Services Manager
Task 740	HSE management	Health and Safety Coordinator	HSE Manager

5.4.1 Scope Management

The closure project scope baseline encompasses all activities defined in the approved RCP (Revision 9) and forms the foundation for project control throughout implementation. This baseline is formally locked upon PEP approval through the Project Management Steering Committee, establishing clear boundaries for what constitutes in-scope work versus changes requiring formal evaluation. The scope management framework recognizes that closure projects inherently face uncertainties—from variable subsurface conditions to evolving regulatory interpretations—requiring a structured yet flexible approach to scope control. All proposed changes undergo rigorous evaluation against four critical criteria: alignment with fundamental closure objectives, regulatory compliance implications, impact on long-term liability, and effects on other project elements through the integrated Work Breakdown Structure (WBS) structure.

Technical change requests originate from multiple sources including field conditions differing from design assumptions, regulatory clarifications, stakeholder input through consultation, or opportunities for improved performance identified during implementation. Each change follows a defined evaluation pathway beginning with discipline lead assessment of technical merit, followed by cost-benefit analysis incorporating life-cycle considerations, and stakeholder consultation where changes affect commitments or end land use objectives. The approval hierarchy reflects both financial thresholds and strategic importance, with material changes—defined as those exceeding $50,000 in cost impact or creating schedule delays greater than 14 days on the critical path—requiring Steering Committee approval to ensure alignment with corporate objectives and available funding.

Scope verification occurs through multiple checkpoints throughout project execution. Monthly reviews assess progress against the approved WBS, identifying any scope creep or unauthorized work expansion. Quarterly baseline assessments examine the cumulative impact of approved changes on project objectives and overall closure strategy. Independent technical reviews at 30%, 60%, and 90% completion milestones provide external validation that executed work meets design intent and regulatory requirements. This multi-layered verification process ensures early detection of scope deviations while maintaining sufficient flexibility to incorporate lessons learned and optimize closure outcomes. The system particularly emphasizes verification at regulatory milestone points, where

non-compliance with scope requirements could trigger enforcement action or delay security reduction, making rigorous scope control essential to both environmental and financial project success.

5.4.2 Cost Management

5.4.2.1 Internal Cost Management and Reporting

Cost Control Framework:

The cost management system adapts AKHM's established financial controls for closure-specific requirements including long-term liability tracking and regulatory financial assurance compliance. By integrating earned value management with traditional cost accounting, the system provides real-time project visibility while maintaining detailed documentation for security drawdown applications. Cost certainty is critical given the fixed funding envelope established through financial assurance mechanisms.

Budget Structure:

Annual budgets approved by the Steering Committee establish spending authority aligned with planned work packages and seasonal execution windows. Quarterly allocations to Level 2 WBS elements provide tactical flexibility while maintaining strategic control, recognizing Yukon's compressed construction seasons. Monthly commitment tracking to Level 4 detail enables early trend identification and proactive adjustments. Base contingency of 15% of remaining work value balances adequate risk buffer with efficient capital deployment.

Performance Measurement:

Earned Value Management applies to all work packages exceeding $100,000 (approximately 85% of project value), calculating monthly Cost Performance Index (CPI) and Schedule Performance Index (SPI) metrics. Variance thresholds of ±10% trigger detailed analysis while ±15% requires formal corrective action. The system distinguishes quantity variations from rate variations to enable targeted responses. Rolling forecasts incorporate performance trends and forward-looking risk assessments, with particular attention to location-based escalation factors.

5.4.2.2 Cost Estimate

The cost estimate is developed based on equipment, labor, and materials costs to conduct earthwork, revegetation, demolition, water treatment, monitoring, and other reclamation activities designed and authorized to create a physically and chemically stable post-mining environment. Cost bases were developed from unit costs quotes provided by local third-party vendors where possible. Where practicable, including employee transport, camp operating costs, and electrical power, current (average same year) rates paid by AKHM were assumed. Published ratings for equipment productivity (Caterpillar, 2022) were used to calculate costs per unit area and timeframes needed for each reclamation task such as grading or hauling. Sizes of areas or facilities to be reclaimed are based on field survey of disturbance, authorized design drawings, and georeferenced mapping as appropriate. Where needed, adjustments for inflation are included pending vintage of available vendor quotes (Statista, 2025; TD Economics, 2025). Accommodations are also included for Net Present Value of projected costs (Bank of Canada, 2025).

5.4.3 Schedule Management

Schedule Control Process:

The hierarchical schedule structure enables management at appropriate levels while maintaining integrated logic throughout the project. Level 1 milestone schedules, approved by the Steering Committee, establish major phase gates aligned with regulatory submissions, seasonal constraints, and security reduction targets. Level 2 summary schedules updated monthly provide management visibility of critical path evolution and resource conflicts. Level 3 detailed schedules maintained weekly drive day-to-day execution decisions, while Level 4 short-term look-ahead schedules (3-week rolling) enable field coordination and constraint removal. This structure balances strategic control with tactical flexibility essential for northern project execution.

Critical Path Management:

Monthly critical path analysis identifies schedule drivers and float consumption trends across interdependent work streams. The analysis particularly focuses on weather-sensitive activities, regulatory approval dependencies, and resource-constrained operations. Float consumption tracking provides early warning of schedule compression, triggering mitigation actions when total float drops below 10 working days. Resource leveling addresses key constraints including specialized equipment availability, technical specialist scheduling, and seasonal workforce limitations. Weather window optimization drives activity sequencing, recognizing that certain work must occur within specific temperature or precipitation constraints.

Schedule Performance:

Weekly progress measurement by WBS element uses objective completion criteria rather than subjective assessments, incorporating physical measurements, milestone achievement, and deliverable completion. Monthly schedule health metrics include float trends, milestone achievement rates, and critical path stability to provide comprehensive performance visibility. Milestone tracking emphasizes regulatory submittal dates, seasonal work completion, and prerequisites for subsequent phases. Recovery planning automatically initiates for delays exceeding 10 days on the critical path, evaluating acceleration options including extended work hours, additional resources, or scope re-sequencing while maintaining safety and quality standards.

5.4.4 Progress Monitoring and Change Control

Change Management Authority Matrix:

Change Type	Cost Impact	Schedule Impact	Approval Authority
Minor	<$25,000	<3 days	Discipline Lead
Moderate	$25,000-$100,000	3-10 days	Project Manager
Major	$100,000-$500,000	10-30 days	Director of Closed Operations
Critical	>$500,000	>30 days	Steering Committee

Change Control Process:

1. Change identification and documentation
2. Technical evaluation and impact assessment
3. Cost-benefit analysis
4. Stakeholder consultation (if required)
5. Approval per authority matrix
6. Implementation planning
7. Baseline update and communication
8. Effectiveness monitoring

Contingency Management:

- Base contingency: 10% of direct costs
- Risk-based contingency: Additional 5% for high-risk activities
- Contingency drawdown requires risk retirement demonstration
- Monthly contingency adequacy assessment

Performance Dashboards:

- Weekly visual management performance postings
- Monthly dashboard for management team
- Quarterly dashboard for Steering committee and stakeholders

Quality Control Gates:

- Design reviews at 30%, 60%, 90%
- Pre-construction readiness reviews
- Completion test protocols
- Final acceptance criteria verification

This comprehensive control framework ensures disciplined project execution while maintaining flexibility to address changing conditions and stakeholder needs throughout the closure implementation.

6 ENVIRONMENT AND REGULATORY MANAGEMENT PLAN

6.1 SCOPE

This plan establishes the framework for environmental performance management and regulatory compliance throughout closure implementation, leveraging existing operational systems and procedures that have successfully managed environmental obligations during active mining operations.

The Environmental and Regulatory Management Plan ensures:

- Seamless transition from operational to closure-phase environmental management
- Continued compliance with all regulatory instruments
- Adaptation of existing systems to closure-specific requirements
- Integration of lessons learned from operational phase

6.2 KEY DOCUMENTS

- Water Licence QZ18-044 and associated conditions
- QML-0009 Schedule C approved plans
- Metal and Diamond Mining Effluent Regulations (MDMER)
- Other permits (Type B Water Licence, Commercial Dump Permit, etc)

Existing Operational Systems include:

- Hecla Environmental Management System (EMS)
- AKHM Environmental Monitoring Database
- Regulatory Obligations Register
- Incident Management System
- Laboratory quality assurance programs

Existing Management Plans include:

- Monitoring, Surveillance and Reporting Plan
- Spill Contingency Plan
- Wildlife Protection Plan
- Adaptive Management Plan
- Waste Management Plan

6.3 RESPONSIBILITIES

HSE Manager (Overall Environmental Compliance)

- Adapts operational environmental management systems for closure phase
- Maintains regulatory compliance registry
- Oversees transition of monitoring programs
- Ensures continuity of environmental data management
- Coordinates regulatory inspections and audits

- Oversees environmental coordinators who:
    - Executes monitoring programs using existing protocols
    - Maintains compliance calendar in current tracking system
    - Prepares regulatory submissions and reports
    - Manages environmental incident response
    - Coordinates with laboratory services
    - Collect environmental samples and record detailed field notes
    - Maintain equipment and supplies required
    - Update environmental databases

Technical Services Manager

- Reviews environmental performance data
- Approves modifications to monitoring programs
- Ensures technical compliance with design criteria
- Oversees water treatment optimization

Existing Support Systems:

- Hecla corporate sustainability team
- Accredited laboratory services (maintain existing contracts)
- FNNND environmental monitors (through existing agreements)
- Environmental consultants

6.4 AUDITING AND INSPECTION

Internal Program

The internal audit program builds upon AKHM's established operational inspection protocols, adapting frequency and focus to address closure-specific risks. Monthly inspections continue throughout active closure, providing consistent oversight of environmental compliance and contractor performance.

Monthly Inspections:

- Environmental compliance walkdowns using standardized checklists
- Contractor work area assessments for permit adherence
- Waste management verification including segregation and disposal records
- Spill kit inventory and emergency equipment functionality checks
- Photo documentation of identified issues for tracking resolution

Quarterly audits provide deeper assessment of systemic compliance and performance trends. These comprehensive reviews examine not only current conditions but also the effectiveness of corrective actions and emerging risks requiring proactive management.

Quarterly Audits (Enhanced for Closure):

- Closure activity compliance verification against approved designs
- Progressive reclamation effectiveness measurement
- Corrective action closeout verification with root cause analysis

- Permit condition compliance sampling beyond routine monitoring

External Inspections

The external inspection program maintains readiness for regulatory oversight while leveraging third-party expertise to validate closure performance. Established protocols ensure efficient inspections that build regulatory confidence in closure execution.

Regulatory Inspections:

- Real-time documentation retrieval systems
- Finding tracking with response deadlines in compliance database
- Corrective action implementation tracking through closure

Independent third-party audits provide objective assessment of closure progress and compliance, supporting both continuous improvement and regulatory submissions for security reduction.

Third-Party Audits:

- Compliance audit by qualified environmental auditors (continuing from operations)
- Financial assurance reconciliation validating cost projections (annual)
- FNNND participation as per the CCBA
- Technical peer review of performance against design criteria

7 OPERATION, MAINTENANCE AND SURVEILLANCE MANAGEMENT PLAN

7.1 SCOPE

This plan establishes the framework for ongoing operation, maintenance, and surveillance activities during the transition from active mining to full closure implementation and into the post-closure monitoring period. The plan addresses the critical need to maintain environmental protection and site safety while systematically decommissioning facilities and transitioning to passive management systems.

The OMS Management Plan will cover:

- Active water treatment operations until passive systems are proven effective
- Transition protocols for converting active to passive treatment systems
- In-situ treatment system operation and optimization
- DSTF cover system performance monitoring and maintenance
- Critical infrastructure maintenance during closure activities
- Long-term monitoring and surveillance requirements
- Emergency response capabilities throughout all phases

This plan builds upon operational experience at KHSD, adapting proven systems and procedures to meet closure-specific requirements while ensuring continuity of environmental protection.

7.2 KEY DOCUMENTS

Operational Documents (To Be Adapted):

- Water Treatment Plant Operations Manuals
- DSTF Operations, Maintenance and Surveillance Manual
- Keno Hill Emergency Response Plan
- Preventive Maintenance Program
- Environmental Monitoring Procedures
- Health and Safety Management System

Closure-Specific Documents (To Be Developed):

- In-Situ Treatment System Operations Manual (to be finalized)
- Bioreactor Operations and Maintenance Manual (to be finalized)
- Cover System Monitoring and Maintenance Manual
- Progressive Decommissioning Procedures
- Post-Closure Surveillance Plan
- Long-term Data Management Protocol

Regulatory Requirements:

- QML-0009 Schedule C OMS requirements
- QZ18-044 Water Licence monitoring conditions
- Yukon Mine Site Reclamation and Closure Policy
- Workers' Compensation Health and Safety Regulations

7.3 RESPONSIBILITIES

Project Manager

Primary Accountability: Safe and compliant operation of all active systems during closure

Key Responsibilities:

- Oversee daily operations across all active facilities
- Manage transition from active to passive systems
- Oversee preventive maintenance program implementation
- Lead emergency response coordination
- Ensure regulatory compliance for all operating systems
- Manage operations budget and resource allocation
- Report to Director of Closed Operations on performance

Transition Planning:

- Ensure development of standard operating procedures and training for new closure systems
- Create knowledge transfer protocols for long-term stewardship
- Establish performance benchmarks for passive systems

Health, Safety and Environmental Manager

Primary Accountability: Ensure all OMS activities comply with health, safety, and environmental regulations while protecting workers, communities, and the environment

Key Responsibilities:

- Develop and maintain closure-specific health and safety procedures
- Oversee environmental compliance for all operating systems
- Coordinate regulatory inspections and reporting requirements
- Manage incident investigation and corrective action programs
- Lead risk assessment processes for changing site conditions
- Maintain environmental licenses and permits during transition
- Interface with regulators on OMS performance standards

Closure-Specific Duties:

- Adapt existing HSE management systems for closure activities
- Develop safe work procedures for decommissioning activities
- Create exposure monitoring programs for closure work
- Establish protocols for managing changing hazards as facilities close
- Coordinate FNNND environmental monitor participation
- Oversee contaminated materials handling and disposal
- Maintain workers compensation and regulatory compliance
- Prepare HSE components of closure completion reports

Technical Services Manager

Primary Accountability: Ensure technical integrity of all closure systems and provide engineering oversight for OMS activities

Key Responsibilities:

- Review and approve all technical modifications to operating systems
- Oversee engineering aspects of system transitions (active to passive)
- Manage technical consultants and engineering contractors
- Ensure as-built documentation accuracy for long-term records
- Coordinate technical peer reviews of closure performance
- Maintain engineering standards and specifications
- Provide technical guidance for troubleshooting and optimization

OMS-Specific Engineering Duties:

- Review performance criteria for passive treatment systems
- Review and approve operating parameter changes
- Oversee geotechnical monitoring data interpretation
- Coordinate crown pillar stability assessments
- Ensure QA/QC for all technical deliverables
- Approve maintenance procedures affecting system performance

Closure Transition Support:

- Lead technical evaluation of system performance data
- Develop trigger criteria for transitioning between treatment methods
- Create technical basis documents for regulatory submissions
- Oversee development of long-term monitoring technologies
- Coordinate integration of new monitoring instrumentation
- Review and approve decommissioning sequences
- Ensure technical knowledge transfer to operations team

Long-term Stewardship Planning:

- Develop inspection criteria for long-term infrastructure
- Create predictive maintenance models for critical systems
- Establish technical performance benchmarks
- Plan for technology upgrades and modernization
- Support development of institutional knowledge preservation

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