



BC EAO EAC Application – Tenas Project

Section 13.0 Management Plans

Chapter 20 Waste Management Plan for Refuse and Emissions

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Tenas Project

Section 13.0 Management Plans

Chapter 20 Waste Management Plan for Refuse and Emissions

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ABBREVIATIONS AND ACRONYMS

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
AQMP	Air Quality Management Plan (S13.0-C2)
BC	British Columbia
BC MEMLI	British Columbia Ministry of Energy, Mines and Low Carbon Innovation
BMPs	best management practices
C	Chapter
CEMP	Construction Environmental Management Plan (S13.0-C4)
CHWSTF	Chemical and Hazardous Waste Storage and Transfer Facility
CMSTHP	Chemicals and Materials, Storage, Transfer, and Handling Plan (S13.0-C3)
CO	carbon monoxide
Code	Health, Safety and Reclamation Code in British Columbia (British Columbia Ministry of Energy, Mines and Low Carbon Innovation [BC MEMLI 2021])
CPP	Coal Processing Plant
DMP	Discharge Management Plan (including selenium management) (S13.0-C5)
EAC	Environmental Assessment Certificate
EMA	<i>Environmental Management Act, SBC 2003, c 53</i> (Government of British Columbia [GovBC] 2003)
EMP	Explosives Management Plan (S13.0-C6)
EMS	Environmental Management System (S13.0-C1)
FMSCP	Fuel Management and Spill Control Plan (S13.0-C7)
GHGs	greenhouse gases
HRMP	Heritage Resources Management Plan (S13.0-C8)
JAIR	Joint Application Information Requirements
MA/EMA permit	<i>Mines Act</i> , RSBC 1996, c 293 permit and <i>Environmental Management Act</i> , SBC 2003, c 53 permit
MERP	Mine Emergency Response Plan (S13.0-C9)
ML/ARDMP	Metal Leaching (ML)/Acid Rock Drainage (ARD) Management Plan (S13.0-C12)
MOC	Management of Change
MSDS	Material Safety Data Sheet
MTCP	Minesite Traffic Control Plan (S13.0-C10)
MWMP	Minesite Water Management Plan (S13.0-C11)
NO _x	nitrogen oxides
OHSP	Occupational Health and Safety Program (S13.0-C13)
PAG	potentially acid generating
PAMP	Public Access Management Plan (S13.0-C14)
PM	particulate matter

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
Project	Tenas Project
RCP	Reclamation and Closure Plan (S13.0-C15)
ROM	run-of-mine
S	Section
SEMP	Socio-economic Management Plan (S13.0-C16)
SEPSCP	Surface Erosion Prevention and Sediment Control Plan (S13.0-C17)
SO ₂	sulphur dioxide
SPP	Standard Practices and Procedures
TAC	Tenas Access Corridor
TCL	Telkwa Coal Limited
TDG	Transportation of Dangerous Goods
VMP	Vegetation Management Plan (S13.0-C18)
VRMP	Visual Resources Management Plan (S13.0-C19)
waste	non-mining waste
WHMIS	Workplace Hazardous Materials Information System
WMP	Wildlife Management Plan (S13.0-C21)
WMPRE	Waste Management Plan for Refuse and Emissions (S13.0-C20)

UNITS OF MEASURE

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
%	percent

EXECUTIVE SUMMARY

The Waste Management Plan for Refuse and Emissions (WMPRE) documents the Telkwa Coal Limited (TCL) approach to non-mining waste management. This WMPRE defines “non-mining waste” (waste) as any material that can no longer be used for its original purpose and is not generated from mining activities. As such, potentially acid generating (PAG), non-PAG, overburden, run-of-mine (ROM) coal, processed rock, processed coal and soil is not covered in this plan. Those materials are addressed in the **Metal Leaching (ML)/Acid Rock Drainage (ARD) Management Plan (Section [S] 13.0-Chapter [C] 12) (ML/ARDMP)** and in **S1.0-1.13 Material Storage Piles and Backfills** of the **Environmental Assessment Certificate (EAC) Application**.

This WMPRE outlines strategies that will be used to process the various waste streams to ensure protection of personnel and the environment. Minesite wastes require appropriate management to ensure the long-term stability of storage, handling, and disposal infrastructure and procedures, and to minimize potential adverse effects to air, water, and land.

The overall waste management philosophy at the Project is based on the following principles:

- ▶ The health and safety of Minesite employees, contractors, the community, and visitors is paramount;
- ▶ The Waste Management Hierarchy will be implemented;
- ▶ Adherence to applicable regulations is required;
- ▶ Treatment, disposal, and management of waste will be performed onsite to the maximum practical and economic extent to minimize the volume of waste shipped offsite;
- ▶ An Inspection Program will be in place with corrective actions to regulate the storage of waste onsite;
- ▶ The generation of wastes that may attract wildlife will be stored in suitable receptacles;
- ▶ Measures will be implemented to reduce waste generation at the source;
- ▶ TCL will use licensed contractors for the handling and disposal of waste materials when it is required for materials to leave site.
- ▶ A Materials Procurement Policy will stipulate which types of materials are prohibited onsite, such as known unacceptable waste products, and will prioritize the use of products which generate minimal waste over alternatives where economic and practical; and
- ▶ Waste management principles and procedures will form a fundamental component of personnel site induction and education.

Management of waste materials at TCL is important for the safety of personnel onsite and for the protection of the environment. Through implementation of this WMPRE and relevant SPPs, TCL will ensure the safe storage, transfer, reuse, recycling, and disposal of waste materials from the Project.

1. INTRODUCTION

The Waste Management Plan for Refuse and Emissions Plan (WMPRE) describes the management processes and procedures in place at the Tenas Project (Project) to manage non-mining waste. This WMPRE defines “non-mining waste” (waste) as any material that can no longer be used for its original purpose and is not generated from mining activities. As such, potentially acid generating (PAG), non-PAG, overburden, run-of-mine (ROM) coal, processed coal, processed rock and soil is not covered in this plan. Those materials are addressed in the **Metal Leaching (ML)/Acid Rock Drainage (ARD) Management Plan (Section [S] 13.0-Chapter [C] 12) (ML/ARDMP)** and in **S1.0-1.13 Material Storage Piles and Backfills** of the **Environmental Assessment Certificate (EAC) Application**. This WMPRE focuses on the management of waste generated by Project activities associated with maintenance, material deliveries, and food wastes. The WMPRE describes the management processes and procedures associated with handling, storing, and disposal of waste materials.

The WMPRE will remain in place during the Construction, Operation, Decommissioning and Reclamation, and Post-closure phases of the Project and will be subject to ongoing management review and revisions as required.

The WMPRE will mitigate potential safety issues related to the management of refuse and emissions and other non-mining waste.

2. PURPOSE AND OBJECTIVES

This WMPRE documents the Telkwa Coal Limited (TCL) approach to waste management and outlines strategies that will be used to process the various waste streams to ensure protection of personnel and the environment. Minesite wastes require careful management to ensure the long-term stability of storage and disposal facilities, and to prevent and minimize air, water, and soil contamination.

This WMPRE is designed to fulfill the guidance provided by the provincial and federal statutes and best management practices (BMPs), the Joint Application Information Requirements for *Mines Act* and *Environmental Management Act* Permits (British Columbia Ministry of Energy, Mines and Petroleum Resources [BC MEMPR] and British Columbia Ministry of Environment and Climate Change Strategy [BC MECCS] 2019) (JAIR) for *Mines Act*, RSBC 1996, c 293 and *Environmental Management Act*, SBC 2003, c 53 (MA/EMA) permits. As such, it is expected that the WMPRE will exceed the requirements of an Environmental Assessment Certificate (EAC) Application.

The purpose of the WMPRE is:

- ▶ to protect workers and the public from any potentially adverse effects associated with wastes produced by Project-related activities;
- ▶ to minimize potentially adverse effects to the biophysical environment, particularly fish and wildlife and their associated habitat, while ensuring compliance with regulatory requirements, permit and license obligations, and TCL's **Environmental, Social, and Governance Policy (ESGP) (Appendix 13.1-A of S13.0-C1 Environmental Management System [EMS] of the EAC Application)**; and
- ▶ to minimize the risk and cost associated with the recycling, storage, handling, removal, and disposal of waste from aspects of the Project.

The objectives for waste management at the Project include:

- ▶ to comply with applicable federal, municipal, and provincial legislation, regulations, or permit conditions;
- ▶ to ensure employees and contractors onsite receive task appropriate training in waste management practices and are informed of updates to procedures on a timely basis;
- ▶ to ensure work areas have designated waste collection or disposal areas, and that waste collection or disposal areas will have designated and secure areas or containers for disposal of specific waste types; and
- ▶ to use data on waste generation to inform reduction policies that will improve the efficiency of the use of Project resources.

To ensure the efficacy of the WMPRE and its associated procedures, personnel onsite must be made aware of the WMPRE and their corresponding responsibilities. Project personnel, including contractors, need to be active participants in implementation of the WMPRE.

3. SCOPE AND SCALE

The scope of this WMPRE is defined within the Project Area, and includes all activities, as well as any operation and/or construction activities that are directly associated with the Project and exist outside of the Project Area. This WMPRE is in effect during the Construction, Operation, Decommissioning and Reclamation, and Post-closure phases, and ceases to be in force at the final closure of the Project as approved by regulatory authorities.

4. COMPLIANCE OBLIGATIONS

This subsection summarizes the relevant compliance approvals and requirements that the WMPRE needs to address.

4.1 Regulatory Requirements

Several legislative requirements are applicable to WMPRE. A short list of these requirements and their major applicable components are provided in **Table 4.1-1** below.

Table 4.1-1: Legislation and Regulations Relevant to Waste Management Plan for Refuse and Emissions (WMPRE)

Legislation and Regulations	Applicable Information
<i>Environmental Management Act</i> , SBC 2003, c 53 (Government of British Columbia [GovBC] 2003) (<i>EMA</i>)	Prohibits the introduction of waste into the environment in a way that will cause pollution, except in accordance with a regulation, permit, approval, or code of practice issued under the <i>EMA</i> .
<i>Fisheries Act</i> , 1985, c F-14 (Government of Canada [GovCan] 1985)	Prohibits the release of a deleterious substance to fish habitat.
<i>Hazardous Products Act</i> , R.S.C., R.S.C., 1985, c. H-3 (GovCan 1985)	Enables the Hazardous Products Regulation, SOR/2015-17 (GovCan 2015).
Hazardous Products Regulations, SOR/2015-17 (GovCan 2015)	Through this regulation, material or substances are evaluated as to a category or subcategory of a hazard class.
Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988)	Addresses the proper handling and disposal of chemicals and hazardous wastes, under the <i>EMA</i> .
Health, Safety and Reclamation Code for Mines in British Columbia (BC Ministry of Energy, Mines and Low Carbon Innovation [BC MEMLI] 2021) (Code)	Provides direction regarding the protection of worker health and safety at mines and exploration sites. Workplace Hazardous Materials Information System (WHMIS) is also detailed in the Code which outlines appropriate labelling of containers of hazardous substances or waste, requirement for Material Safety Data Sheets (MSDSs), and worker education and training.
<i>Metal Dealers and Recyclers Act</i> , SBC 2011, Chapter 22 (GovBC 2011)	Scrap metal recycling by licenced companies.
<i>Mines Act</i> , RSBC 1996, c 293 (GovBC 1996a)	Regulates activities on mineral claims registered to the proponent.
<i>Public Health Act</i> , SBC 2008, c 28 (GovBC 2008)	Provides direction on the management of sewage waste systems and related health hazards.
Sewerage System Regulation, B.C. Reg. 191/2018 (GovBC 2018)	Sewage waste systems permitting.
<i>Transportation of Dangerous Goods Act</i> , SC 1992, c 34, Transportation of Dangerous Goods Regulations, SOR/2001-286 (GovCan 2001)	Includes a substance classification system and specifies requirements for transportation of dangerous goods.

Legislation and Regulations	Applicable Information
Waste Discharge Regulation, B.C. Reg. 320/2004 (GovBC 2004)	Prescribes which industries and trades are regulated under the <i>EMA</i> .
<i>Water Protection Act, RSBC 1996, c 484</i> (GovBC 1996b)	Provides guidance on wells and groundwater protection.

The JAIR for *MA/EMA* permits provides direction on the objectives for a waste handling plan in Section 9.17 of the JAIR document. This WMPRE fulfills the JAIR objectives as listed below.

This WMPRE describes waste management strategies to be followed during Construction, Operation, Decommissioning and Reclamation, and Post-closure phases. The WMPRE outlines discharges through the Construction and Operation phases of the Project, including the following:

- ▶ air contaminants:
 - ▶ potential sources such as spills, dust, fugitive emissions from processes (including cooling), emissions from ponds and yards, and emissions from electrical generation (depending on the mining process, an air discharge permit may be required);
- ▶ effluents:
 - ▶ sources, including spills, exfiltration, spray irrigation, other losses from processes (including cooling), and sewage and stormwater discharges;
- ▶ refuse:
 - ▶ sources, including spills and other losses of materials such as leachate, materials from landfilling or soil treatment (land farming), or recyclable materials;
- ▶ contaminated soil management including:
 - ▶ plans to remediate or manage soils impacted by spills onsite;
 - ▶ detailed descriptions of any proposed pollution control and/or water management necessary during construction and operations to manage existing contamination;
 - ▶ remedial strategies to be used to mitigate and/or remediate contamination;
 - ▶ a monitoring proposal to aid in characterising potential groundwater contamination; and
 - ▶ information on proposed site decommissioning or planned site remedial activities, including information required for the completion of a site profile as described in the *Environmental Management Act*, SBC 2003, c 53 (GovBC 2003) (*EMA*).

4.2 Standard Practices and Procedures (SPPs)

TCL SPPs will conform to the British Columbia Health, Safety and Reclamation Code for Mines in British Columbia (British Columbia Ministry of Energy, Mines and Low Carbon Innovation [BC MEMLI] 2021) (Code).

In addition to regulatory requirements, the Project will implement SPPs that meet or exceed the required laws and regulations.

5. RELATIONSHIP TO OTHER MANAGEMENT PLANS

The Project is governed by an **EMS**, an overarching management plan strategy comprising a set of processes and practices which enable TCL to manage its environmental and safety performance in a holistic way, within an integrated framework. While the management plans are part of the **EMS**, the **EMS** is not just a collection of management plans.

In addition to the overall guidance of the **EMS**, this WMPRE has a relationship with other management plans that also present mitigation measures. Those management plans and their relationship to this WMPRE are listed in **Table 5-1**.

Table 5-1: Management Plans with Relationship to the Waste Management Plan for Refuse and Emissions (WMPRE)

Management Plans	Nature of Relationship
Environmental Management System (S13.0-C1) (EMS)	Management plans are part of the EMS.
Air Quality Management Plan (S13.0-C2) (AQMP)	Dust control chemical wastes will be stored, handled, and disposed of in accordance with the AQMP. Waste emissions will be handled through the AQMP.
Chemicals and Materials, Storage, Transfer, and Handling Plan (S13.0-C3) (CMSTHP)	Chemical and material storage and handling plans relate to wastes will be addressed through the CMSTHP.
Construction Environmental Management Plan (S13.0-C4) (CEMP)	Waste, refuse and emissions during the Construction Phase will be handled using both the CEMP as well as the Waste Management Plan for Refuse and Emissions (S13-C20) (WMPRE).
Explosives Management Plan (S13.0-C6) (EMP)	Wastes associated with the explosive will be addressed by the EMP due to the special nature of these waste materials.
Fuel Management and Spill Control Plan (S13.0-C7) (FMSCP)	Soil treatment from spills will be ensured through the FMSCP. Related waste materials will be dealt with via the WMPRE.
Mine Emergency Response Plan (S13.0-C9) (MERP)	Emergency response related to wastes, refuse and emissions will be addressed through the MERP.
Occupational Health and Safety Program (S13.0-C13) (OHSP)	Handling of waste, refuse and emissions with respect to employee and public health and safety will be addressed through the OHSP.
Vegetation Management Plan (S13.0-C18) (VMP)	Wastes associated with invasive plant control will be addressed through the VMP.

6. DETAILS OF WASTE MANAGEMENT PLAN FOR REFUSE AND EMISSIONS (WMPRE)

The WMPRE focuses on the efficient use of resources, which includes using the Waste Management Hierarchy provided below in **Figure 6-1**. It can also be thought of the "5 R's"

- ▶ reduce;
- ▶ reuse;
- ▶ recycle;
- ▶ repurpose/recover; and
- ▶ refuse/rot.

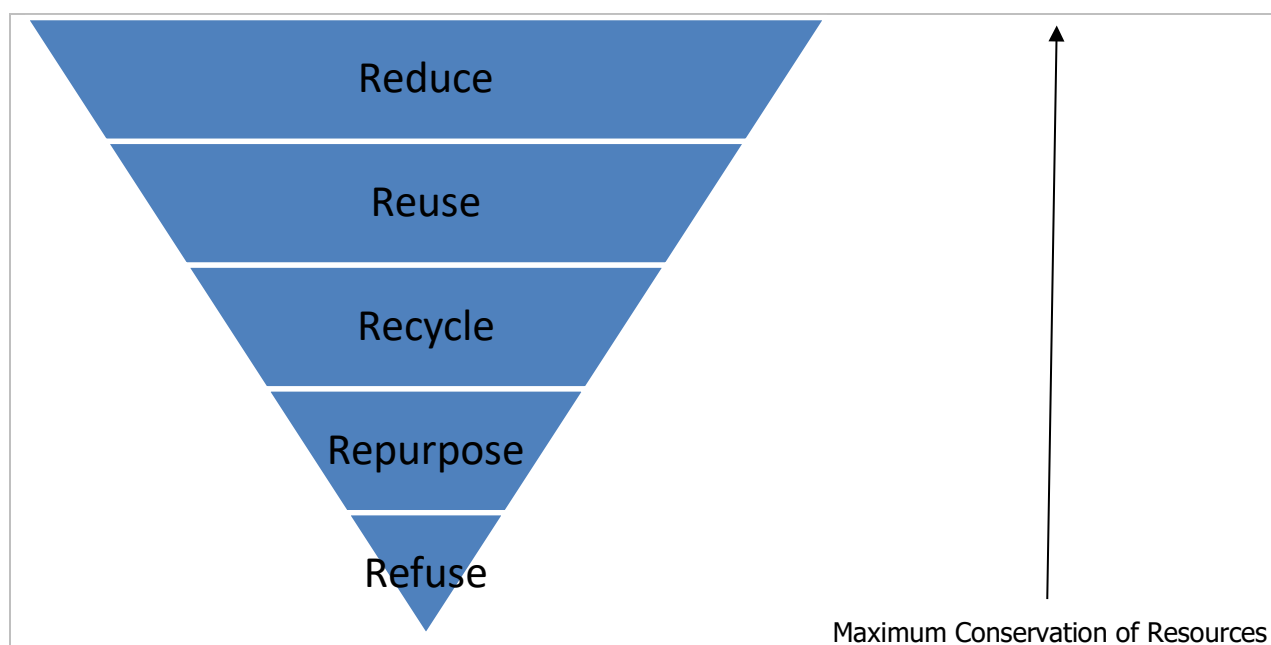


Figure 6-1: Waste Management Hierarchy for the Tenas Project

Where possible, methods will be used to minimize the quantity of waste materials to be disposed of by the Project. The following subsection contains an overview of the anticipated types and sources of waste that will be generated over the life of the Project, a description of general actions incorporating the Waste Management Hierarchy. Where possible, methods will be exhausted before disposing of materials.

The overall waste management philosophy for the Project is based on the following principles:

- ▶ The health and safety of Minesite employees, contractors, community, and visitors is paramount;
- ▶ The Waste Management Hierarchy will be implemented;
- ▶ Adherence to applicable regulations is mandatory;

- ▶ Treatment, disposal, and management of waste will be performed onsite to the extent practical and economic to minimize the volume of waste shipped offsite;
- ▶ The generation of wastes that may attract wildlife and the interaction between humans and wildlife will be minimized;
- ▶ Measures will be implemented to reduce waste generation at the source;
- ▶ A Materials Procurement Policy will stipulate which types of materials are prohibited onsite, such as known unacceptable waste products, and will prioritize the use of products which generate minimal waste over alternatives where economic and practical; and
- ▶ Waste management principles and procedures will form a fundamental component of personnel site induction and education.

6.1 Purchasing

Before a new product and/or material can be brought onsite, the TCL Buyer must request a product MSDS, and technical sheet if it exists, and circulate this to the Environmental Coordinator, and the Health, Safety, and Human Resources Superintendent for review and approval. If the product is not approved for use by these personnel, an alternate product must be found.

6.2 Identification and Classification of Waste

To effectively manage waste materials, the product supplier and/or Environmental Coordinator must properly identify and classify waste materials to ensure that appropriate management practices are employed in the storage, handling, and disposal of waste. Unclassified waste may result in the improper handling and disposal, leading to health and safety or environmental risks.

The Project will generate several forms of industrial and domestic waste throughout the life of the Project. The types of waste that will typically be generated during Construction, Operation, Decommissioning and Reclamation, and Post-closure phases of the Project are listed in **Table 6.2-1** below.

Table 6.2-1: List of Possible Waste Materials Associated with the Tenas Project

Material	General Disposal	Transport	Regulatory Documents
Absorbent Pads	Items are placed in a 180-litre (L) open head steel drum with securing lid, labelled and stored for shipment in the Chemical and Hazardous Waste Storage and Transfer Facility (CHWSTF).	Items are transferred offsite by a licensed contractor for disposal.	▪ Hazardous Waste Regulation, BC Reg. 63/88 (Government of British Columbia [GovBC 1988]) ▪ <i>Transportation of Dangerous Goods Act</i>, SC 1992, c 34 (Government of Canada [GovCan] 1992) (TDGA)
Aerosol Cans	Items are safely punctured, and remaining metal is placed in 180-L open head steel drums with securing lids. Drums are labelled and stored for shipment in the CHWSTF.	Items are transferred offsite by a licensed contractor for disposal.	▪ Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1998) ▪ TDGA.

Material	General Disposal	Transport	Regulatory Documents
Air Filters	Items are disposed of in a black waste bin.	Wastes are transferred offsite by licensed contractor or Telkwa Coal Limited (TCL) personnel to the nearest municipal landfill.	▪ <i>Environmental Management Act</i>, SBC 2003, c 53 (GovBC 2003) (EMA)
Ammonium Nitrate Prill	Material is placed in a 180-L open head steel drum with securing lid, labelled and stored for shipment at the Explosives Infrastructure sites.	Items are transferred offsite by a licensed contractor for disposal or mixed with emulsion for use in blast patterns.	▪ Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) ▪ TDGA
Automotive Wet-Cell Batteries	Items are placed upright in a containment bin for shipment in the CHWSTF.	Items are transferred offsite by a licensed contractor for disposal.	▪ Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) ▪ TDGA
Other Batteries	Items are collected in designated pails throughout the Minesite, and when full are returned to the warehouse for shipment offsite.	Items are transferred offsite by TCL personnel for recycling.	▪ Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) ▪ TDGA
Beverage Cans, Bottles or Boxes	Items are placed in a blue recycle bin.	Items are transferred offsite by TCL personnel for recycling.	▪ n/a
Cardboard Products	Items are disposed of in appropriate industrial size recycling bins.	Items are transferred offsite by a licensed contractor or by TCL personnel for disposal.	▪ n/a
Compressed Cylinders	Cylinders in good condition will be refilled onsite. Damaged tanks are sent offsite for recycling.	Items are transferred offsite by a licensed contractor for disposal.	▪ Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) ▪ TDGA
Crushed Oil Filters	Items are placed in a 180-L open head steel drum with securing lid, labelled and stored for shipment in the CHWSTF.	Items are transferred offsite by a licensed contractor.	▪ Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) ▪ TDGA
Domestic Waste (food waste, etc.)	Waste from offices, lunchrooms, and other work areas will be contained in bear-proof bins or containers until it is shipped offsite.	Wastes are transferred offsite by licensed contractor or TCL personnel to the nearest municipal landfill.	▪ EMA
Electronics including Cables	Items are stored in the warehouse for shipment to an electronic waste transfer facility.	Items are transferred offsite by a licensed contractor or by TCL personnel for disposal.	▪ n/a
Diesel Fuel	Items are placed in waste lubricant tank for the onsite boiler for waste to heat generation.	Items are transferred onsite by TCL personnel.	▪ Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) ▪ TDGA

Material	General Disposal	Transport	Regulatory Documents
Domestic Sewage	Sewage is discharged to the onsite Sewage Treatment Facility.	Sewage is treated and disposed of onsite into the Wastewater Storage Pond.	- Public Health Act, SBC 2008 (GovBC 2008) - Sewerage System Regulation, B.C. Reg. 191/2018 (GovBC 2018)
Light Bulbs	Items are stored in the light bulb waste transfer facility location in the Maintenance Facility.	Items are transferred offsite by a licensed contractor for disposal.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Lubricants (used)	Used oil will be used in the water boiler at the maintenance facility to provide infloor heating versus directing this to an offsite landfill	Items are transferred offsite by a licensed contractor for disposal, if required.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Lubricant Containers (Empty)	Items are stored for shipment in the lubricant storage sea containers for shipment back to suppliers.	Items are transferred offsite by a licensed contractor for disposal.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Gasoline	Liquids are placed in a 180-L open head steel drum with securing lid, labelled and stored for shipment in the CHWSTF.	Items are transferred offsite by a licensed contractor for disposal.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Glycol/Antifreeze	Liquid is placed in a 180-L open head steel drum with securing lid, labelled and stored for shipment in the CHWSTF. Larger quantities will be stored in an 8,000 L tank onsite.	Items are transferred offsite by a licensed contractor for disposal.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Grease	Items are placed in a 180-L open head steel drum with securing lid, labelled and stored for shipment in the CHWSTF.	Items are transferred offsite by a licensed contractor for disposal.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Hydrocarbon Contaminated Soils	Items are transported to the Soil Treatment Facility for treatment, and if exceeding regulatory criteria, material is placed in a 45-gallon open head steel drum, labelled and stored for shipment in the CHWSTF.	Depending on level of contamination, items are either treated onsite or transferred offsite by a licensed contractor.	Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988)
Laboratory Chemical Waste	Items are placed in a 180-L open head steel drum with securing lid, labelled, and stored for shipment in the CHWSTF.	Items are transferred offsite by a licensed contractor for disposal.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Lubricant	Material is placed in waste lubricant tank for offsite disposal.	Items are transferred offsite by a licensed contractor for recycling.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA

Material	General Disposal	Transport	Regulatory Documents
Lubricant Contaminated Water	Contents are vacuumed and transferred to the Coal Processing Plant (CPP) thickener or oil: water separator in Maintenance Facility.	Lubricant skim is transferred offsite by a licensed contractor for disposal and is transferred offsite by a licensed contractor for disposal.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Lubricant Covered Plastics, Rags, Towels, Cardboard, and Wood	Items are placed in a 180-L open head steel drum with securing lid, labelled, and stored for shipment in the CHWSTF.	Items are transferred offsite by a licensed contractor for disposal.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Metal	Items are placed in labelled containers.	Items are transferred offsite by a licensed scrap metal contractor for disposal.	<i>Metal Dealers And Recyclers Act</i>, SBC 2011, Chapter 22 (GovBC 2011)
Office Paper Products	Items are placed in recycling bins.	Items are transferred offsite by a licensed contractor or by TCL personnel for recycling.	n/a
Paint Cans	Items are placed in a 180-L open head steel drum with securing lid, labelled and stored for shipment in the CHWSTF.	Items are transferred offsite by a licensed contractor for disposal.	- Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) - TDGA
Pallets	Items will be stored in the warehouse for use onsite	If suppliers take clean pallets back, they are stored in warehouse for later transfer offsite	n/a
Plastics	Items are disposed of in a recycling bin.	Items are transferred offsite by a TCL personnel for recycling.	n/a
Sewage from Satellite Trailers	Contents are transferred to the onsite Sewage Treatment Plant.	Items are treated and disposed of onsite into the Wastewater Storage Pond	<i>Public Health Act</i>, SBC 2008 (GovBC 2008) - Sewerage System Regulation, B.C. Reg. 191/2018 (GovBC 2018)
Tires	Items are stockpiled for storage in the scrap tire yard.	Items are transferred offsite by a licensed contractor for recycling.	n/a
Vehicles and Equipment	Items are stored in the used equipment laydown yard.	Items are sold for use or disposed of by scrap metal dealers	Sewerage System Regulation, B.C. Reg. 191/2018 (GovBC 2018)
Wood Waste and Unusable pallets	Contents will be transferred to designated (permitted) burning area onsite.	Items are burned and ash is placed in topsoil stockpiles	- EMA - Waste Discharge Regulation B.C. Reg. 154/2019 (GovBC 2019)

6.3 Management of Waste by Licensed Contractors

Handling and disposal of waste materials by unlicensed or unqualified contractors may lead to inappropriate disposal, unsafe transportation methods and handling practices, potentially compromising the health and safety of personnel and the environment. TCL will use licensed contractors for the handling and disposal of waste materials when it is required for materials to leave site.

6.4 Waste Segregation

Segregating waste so it can be handled, transported, and disposed of separately is important to prevent mishandling, improper disposal, and contamination. Handling methods and precautions may vary considerably among waste types. Segregated waste can be transported offsite or onsite safely and efficiently if proper standards are employed, with little to no effect on public highways, communities, or the environment.

6.5 Tracking and Monitoring

Proper tracking (manifesting) and reporting of waste materials by TCL personnel and contractors will ensure that the materials are disposed at approved disposal sites. It also offers the opportunity to ensure compliance with proper handling and transportation procedures under the Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) and *Transportation of Dangerous Goods Act*, SC 1992, c 34 (GovBC 1992).

6.6 Waste Reduction

Reducing the amount of material that is consumed is the most effective way of reducing the amount of waste that is generated by the Project. Consumption will be assessed by evaluating procedures, processes, and consumed materials for possible reductions in raw material usage, as well as possible reductions in generated waste volumes. Examples of waste reduction that will be implemented include:

- ▶ product review, selection, and substitution of recyclable/reusable and non-hazardous materials instead of using non-recyclable/non-reusable and hazardous materials;
- ▶ ordering chemicals or lubricant products in bulk/returnable containers;
- ▶ keeping a workable minimum inventory to prevent expiration of products and resulting generation of waste;
- ▶ decreasing the amount of solid waste by reducing the use of disposable items through a review of processes;
- ▶ training personnel on waste minimization and reuse; and
- ▶ decreasing the amount of packaging on supplies by requesting that the suppliers provide less packaging materials on over-packaged products.

6.7 General Actions to Avoid, Control, and Mitigate Waste Materials

6.7.1 Material Reuse

Materials brought to the Project Minesite should be used to the extent possible, and where applicable, reused onsite. Examples of reusable materials include:

- ▶ scrap metal, conveyor belt parts, pallets, and wood;
- ▶ chemical containers that can be returned to the supplier to be refilled; and
- ▶ waste lubricants, glycols, and solvents that can be reused.

6.7.2 Material Recycling

A recycling program will be incorporated at the Project to minimize waste streams. The Project will recycle as many products as possible onsite (e.g., salvageable lumber, scrap metal, and salvageable parts from vehicles).

Other recyclable materials will be shipped offsite to the nearest recycling facility. Products that will be shipped offsite include:

- ▶ office paper, cardboard, plastic, beverage containers,
- ▶ used lubricant filters (oil removed, crushed, and recycled separately);
- ▶ used automotive and small batteries;
- ▶ plastic hydrocarbon pails;
- ▶ used/damaged auto parts;
- ▶ haul truck and light vehicle tires;
- ▶ oil-based and latex paints; and
- ▶ empty drums.

6.7.3 Material Recovery

Recovery is the final level of waste minimization and involves extracting usable material or energy as a by-product for other uses. Opportunities for recovery will be evaluated throughout the life of the Project. An example for this Project is the burning of used lubricant products in the Maintenance Facility boilers to produce heated water for in-floor heating.

6.8 Waste Collection Areas

The Waste Collection Area(s) will function as a temporary storage area for waste until it is recycled/reused, processed, or transferred to the appropriate approved recycling or disposal locations. The waste collection areas will be properly designed to contain and prevent contamination of the environment.

Waste Collection Area(s) will be designed to store a sufficient quantity of waste adequately and safely over a prescribed time limit of one (1) to three (3) months and under permit for hazardous wastes per the Hazardous Waste Regulation, BC Reg. 63/88. Where required, waste collection areas will be covered and fenced to prevent attraction of wildlife, prevent leaching of material into soils or waterways, and to provide protection from weather. Additionally, temporary hazardous waste disposal facilities will be adequately designed to contain spills by using constructed berms and liners.

There will be three (3) designated areas in the main Waste Collection Area:

1. Recycle/Reuse Area: This area will contain the items that can be recycled/reused onsite. Inert materials to be stored in this area include: scrap metals, paper, cardboard, glass, and wood. These items will be placed in separate designated containers or areas within the recycle/reuse area of the

waste collection area. This method will allow personnel to search the recycle/reuse area of the waste collection area for materials to reuse. Once these containers or areas become full, the contents will be either disposed of in a designated onsite facility or shipped offsite for recycling at an approved facility;

2. Chemical and Hazardous Waste Storage and Transfer Facility (CHWSTF): The CHWSTF will contain chemical and hazardous waste that is required to be shipped offsite in accordance with the **Chemicals and Materials, Storage, Transfer, and Handling Plan (S13-C3) (CMSTHP)**. Hazardous waste, including used glycol, acids, solvents, lubricants, oily rags, absorbent pads, and any other hazardous chemicals, will be stored in this facility, which has an integrated secondary containment area. Hazardous waste will not be permitted to accumulate to excessive volumes and will be shipped offsite periodically to avoid crowding; and
3. Removal Area: This area will contain inert waste that will be disposed of in an offsite facility or in the onsite landfill. Waste temporarily stored for removal will include domestic and industrial waste that is not hazardous or recyclable. Bear-proof containers will be used for domestic food wastes to deter wildlife.

The waste in the waste collection area will be segregated, bermed, and stored using accepted management practices including, but not limited to, the following:

- ▶ Fire prevention systems will be adequately designed for the materials being stored will be used;
- ▶ Spill kits, protective equipment, and other necessary equipment to clean and mitigate spills will be used;
- ▶ Only containers in good condition will be used to store items;
- ▶ Containers and liner materials will be compatible with the waste being disposed;
- ▶ Containers and drums will be labelled to identify the waste content and initial date of storage;
- ▶ Sufficient storage space between containers will be provided to allow for safe access and handling of containers; and,
- ▶ Incompatible waste will not be stored in the same containers and will be stored at a safe distance from each other.

Secondary containment areas will be in staging areas, vehicle maintenance shops, and any other areas required for temporary storage of waste before being moved to the waste collection area or being moved offsite to minimize transportation of waste around site.

6.9 Transporting Waste

Reputable certified waste transportation contractors will be used for the transport of goods and materials to and from the Minesite. Project personnel will periodically inspect the transporters' performance and compliance with British Columbia (BC) and federal transport regulations, contract requirements, and overall performance.

6.10 Management of Hazardous Waste

Hazardous waste will be produced and includes materials such as waste lubricants, solvents, lead-acid batteries, oil filters, and used oily rags and absorbent pads. The Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) under the *EMA* provides the relevant definition of hazardous waste.

Hazardous waste requires special handling and training procedures. Employees, contractors, and subcontractors who are handling hazardous waste for the Project will be provided with Workplace Hazardous Materials Information System (WHMIS) training or required under contract to have that training, so they can identify hazardous waste and know how to handle it appropriately.

Transportation of Dangerous Goods (TDG) training will be provided, or required of employees, contractors, and sub-contractors who are receiving, off-loading, and storing potentially hazardous materials, or involved in the storage and shipment offsite of hazardous waste.

Hazardous waste will be transported to and stored in the **CHWSTF**, and the manifesting requirements in the Hazardous Waste Regulation BC Reg. 63/88 (GovBC 1988) will be followed. Periodic audits of this facility to ensure proper handling and destruction of hazardous waste will be considered.

Hazardous materials and dangerous goods will be stored in clearly labelled containers or vessels and handled in accordance with regulations appropriate to their hazard characteristics. Hazardous waste that needs to be disposed of offsite will be transferred to an approved hazardous waste facility using compliant waste manifesting processes.

Table 6.10-1 below provides an overview of hazardous waste types, treatment, and disposal plans. Hazardous waste management is then described in more detail.

Table 6.10-1: Hazardous Waste Materials

Type	Treatment	Storage
Hydrocarbon Wastes		
Used Lubricants	Offsite recycling at an approved facility or use in the onsite boiler for heating water for in-floor heating	Lubricant storage tank at vehicle maintenance areas
Oily Rags and Absorbent Pads	Offsite disposal at an approved facility	Drums in Waste Collection Area
Lubricant and Fuel Filters	Offsite recycling at an approved facility	Bins in Waste Collection Area
Chemical Wastes		
Glycol	Offsite recycling at an approved facility	Drums in Waste Collection Area
Acids	Offsite recycling at an approved facility	Drums in Waste Collection Area
Solvents	Offsite recycling at an approved facility	Drums in Waste Collection Area
Waste Batteries	Offsite recycling at an approved facility	Bins in Waste Collection Area
Aerosol Cans	Offsite disposal at an approved facility	Can puncher/ Waste Collection Area
Paints	Offsite recycling at an approved facility	Drums in Waste Collection Area
Biological Waste		
Biological Waste	Offsite disposal in an approved facility or local pharmacy and/or hospital if sharp objects are present	First Aid room in hygienic closed containers

For further information regarding management of hazardous materials onsite, please refer to the **CMSTHP**.

6.10.1 Hydrocarbon Wastes

Hydrocarbon products will be used at the Project. Waste generated from the use of hydrocarbon products will include oil, diesel fuel, lubricants, gasoline, kerosene, oily rags, absorbent pads, and solvents. These products must be handled with caution because they can have potentially adverse effects on the environment and personnel. The handling, storage, and spill contingency for hydrocarbon products are outlined in the **CMSTHP** and the **Fuel Management and Spill Control Plan (S13.0-C7) (FMSCP)**. To properly manage the hydrocarbon waste stream and make the individual waste streams easier to reuse/recycle or recover, the waste will be segregated into the following classes:

- ▶ Hydraulic fluid: Hydraulic fluid that is not reused will be stored in marked drums in secondary containment in the vehicle maintenance shops or within the CHWSTF, until it is shipped offsite to a licensed disposal facility for recycling.
- ▶ Hydrocarbon-contaminated soil, overburden, and process rock: The amount of hydrocarbon-contaminated soil, overburden, and process rock will be minimized by procedures outlined in the **FMSCP**. These procedures include precautionary principles such as lining of storage facilities and using secondary containment for fuel storage areas, regular inspection and maintenance of equipment, strategically placed spill kits and absorbent matting, etc. Even with precautions, soil and rock contamination can still occur. Hydrocarbon contaminated soil will be removed to the designated Soil Treatment Facility for onsite treatment and use or shipped offsite for disposal depending on testing. Coal will also be used to help soak up large spills and then fed into the Coal Processing Plant (CPP) where the hydrocarbon products will help with the recovery of fine coal particles within the CPP.
- ▶ Lubricant filters and fuel filters: Used lubricant filters and fuel filters will be crushed and the oil collected for recycling, and filters stored in open head marked drums with sealable lids. These drums will be inventoried and stored in the CHWSTF until they are shipped offsite to a licensed disposal facility for recycling. Oily rags and absorbent pads will also be shipped offsite to a licensed disposal facility.
- ▶ Used lubricants including hydraulic fluid and hydraulic fluid: Lubricants will be used for every vehicle, piece of equipment, and generator on the Project Minesite. Used lubricants will be generated from regular maintenance of these sources. The used lubricants will be collected and stored in used lubricant storage tanks located in the vehicle maintenance areas with secondary containment areas. From the used lubricant tank, the material will either be transferred to an approved waste dealer tank for recycling offsite or burned onsite in the boiler to produce hot water for in-floor heating system. Fluids will be strained of particulates for use in the onsite boiler for heating the Maintenance Facility. Used lubricants generated during the Construction Phase will be collected in drums in secondary containment areas at staging areas for shipment offsite. The used lubricants will be reused where possible, such as for fueling shop heaters, shop boilers, or shipped offsite to a licensed disposal facility for recycling.

6.10.2 Chemical Wastes

Typical chemical waste will comprise glycol, acids, and solvents. Materials or containers that contain chemical waste include spent batteries, aerosol cans, and paints.

- ▶ Acids: Used lead acid batteries from vehicles will be labelled, inventoried, and stored in the CHWSTF in a dedicated area, until they are shipped offsite to a licensed disposal facility for recycling;
- ▶ Aerosol cans: Pump bottles will be used as much as possible in place of aerosol cans to reduce the amount of waste produced. Separate waste containers for aerosol collection can be placed

around the facilities and then stored in the CHWSTF. Cleaning staff will be trained to separate aerosol cans that make it into the waste stream. Empty aerosol cans will be shipped offsite to a licensed disposal facility for disposal;

- ▶ Glycol: Glycol (antifreeze) is used in vehicles and various types of equipment. It is a substance that has a negative effect on the environment and can be a wildlife attractant if spilled because of its sweet smell and taste. Used glycol will be stored in a used glycol tank onsite, which will be inventoried and stored in the secondary containment area of vehicle maintenance areas until it can be shipped offsite to a licensed disposal facility for recycling. Used glycol generated during the Construction Phase will be collected in drums in secondary containment areas at staging areas for shipment offsite;
- ▶ Paints: When the paint cans are completely emptied and dried, they will be disposed of in an offsite facility. Residual paint from latex-based paints will be dried before disposal. Residual paint from oil-based paints will be collected for offsite recycling. The cans from oil-based paints will be properly sealed and stored in a crate in the CHWSTF of the Waste Collection Area until they are shipped offsite to a licensed disposal facility for recycling;
- ▶ Solvents: Solvents are used as degreasing agents for vehicle and equipment parts. Non-toxic citrus based alternatives, detergents, and jet-streams will be used as much as possible in lieu of hydrocarbon-based solvents. Where hydrocarbon-based solvents are required, they will be recycled to the extent possible until they no longer have their desired cleaning properties before being considered waste. Waste solvents will be stored in labelled containers, which will be inventoried and stored in the CHWSTF until they are shipped offsite to a licensed disposal facility for recycling; and
- ▶ Waste batteries: Rechargeable batteries will be used where practicable to minimize the amount of waste produced. Containers will be placed in buildings around the Project site to collect old batteries. These containers will be emptied periodically and spent batteries will be stored in the CHWSTF warehouse until they are shipped offsite to a licensed disposal facility for recycling.

6.10.3 Biological Waste

The First Aid room will generate small amounts of biological waste in the form of needles, syringes, scalpel blades, and blood- and tissue-contaminated materials. This waste will be properly contained in biohazard containers in the First Aid room under the supervision of the First Aid staff and will be shipped offsite to an approved disposal facility.

6.11 Management of Non-hazardous Waste

Non-hazardous waste will be produced in phases of the Project. It includes materials such as domestic garbage, food waste, paper materials, beverage containers, glass, plastics, and inert bulk waste.

Table 6.11-1 below provides an overview of non-hazardous waste types, treatment, and disposal.

Table 6.11-1: Summary of Non-hazardous Materials

Type	Treatment	Storage/Disposal
Inert Solid Wastes		
Paper and Corrugated Cardboard	Reuse/offsite recycling	Waste Collection Area
Plastics	Reuse/disposal in onsite landfill/at approved facility	Waste Collection Area

Type	Treatment	Storage/Disposal
Tires and Conveyor Belts	Reuse/recycle offsite at an approved facility/disposal at an approved facility	Scrap tire yard and removal periodically by rubber recycling firm.
Vehicles	Reuse/recycle offsite at a approved metal scrap yard	Used Vehicle Laydown Yard
Scrap Metal	Offsite recycling at approved facility	Waste collection area with periodic removal by licenced scrap dealer
Waste Lumber	Recycling onsite/disposal via burning onsite	Waste Collection Area
Electrical Equipment	Recycle at approved facility	Waste Collection Area
Solid Domestic Waste		
Lunchroom and office waste etc.	Disposal at either a local municipal landfill or onsite landfill or composting facilities	Offsite disposal or onsite at landfill
Sewage		
Sewage	Sewage Treatment Plant	Treatment and discharge to Wastewater Storage Pond and then to environment
Sewage Sludge	Disposal offsite at approved facility	Offsite disposal or for use during reclamation

6.11.1 Inert Solid Waste

Inert solid waste includes the following waste types:

- ▶ Air filters: Air filters will be collected in secondary containment bins in the Maintenance Facility and disposed of offsite.
- ▶ Corrugated cardboard: Corrugated cardboard waste will be generated mainly from packaging of materials. Cardboard will be collected along with the paper for recycling and will be stored in a crate in a dry location in the Recycle/Reuse portion of the Waste Collection Area to be shipped offsite to a paper recycling facility;
- ▶ Electrical equipment: Waste electrical equipment will consist of generators, transformers, and distribution lines that have reached the end of their service. When they are no longer functional or re-buildable; usable parts will be extracted for reuse and the rest of the parts will be stored in the Recycle/Reuse area until shipped offsite to a licensed disposal facility for recycling;
- ▶ Paper: Paper waste consists of office paper, newspaper, general packaging, and food packaging. Paper waste will be reduced in a number of ways, such as minimizing the use of paper, recycling, and reusing. Minimizing the use of paper will be achieved by using voice message devices, telephone or verbal messaging, emails, and printing and photocopying on both sides of the paper. Recycling will be achieved by placing paper recycling boxes in the buildings where paper will be used. The recycle boxes will be emptied into a crate in the Recycle/Reuse portion of the Waste Collection Area adjacent to the CHWSTF to be shipped by TCL employees or contractor offsite to a paper recycling facility. Reusing paper waste will be achieved by such approaches as using shredded paper as packaging material and reusing paper from the recycling bins for notepads. Paper packaging from food products will be transported offsite to a disposal facility;

- ▶ **Plastics:** Plastic waste will mainly be generated from food packaging, cleaning products, and lubricants. To reduce the amount of waste produced, the maximum practical package size will be purchased for product, and disposable plastic dishes will not be used. Some of the plastics, such as pails and containers, will be reused and/or recycled. Clean materials of appropriate plastic types will be collected at waste the recycling collection area for offsite recycling. Plastics that contained non-hazardous materials will be sent offsite for disposal. Plastics that contained hazardous materials will be fully drained and stored in the waste collection area before being shipped offsite to an approved disposal facility;
- ▶ **Scrap metal:** Scrap metal will be generated during the construction and maintenance processes and from equipment (siding, piping, equipment parts, etc.) and will contain ferrous and nonferrous types of metal. Scrap metal will be minimized by prompt maintenance of equipment and will be reused wherever possible for onsite needs and projects. The scrap metal will be segregated and placed in designated laydown areas and bins for reuse or salvage. The unused scrap metals will be shipped offsite to a licensed disposal facility for recycling;
- ▶ **Tires and conveyor belts:** Tires will be re-treaded and repaired as many times as feasible. When they are no longer safe to use, they will be reused for different purposes such as for storing material in the parts laydown area, or as impact barriers at road intersections. The tires that are not reused in some part of the Project will be inventoried and stored in the used tire yard for transport to a tire recycling facility. Conveyor belts have a finite life. When they can no longer be used, the belts, along with other large rubber items from the mining operation, will be assessed for other uses such as floor pads and protective material in loading docks, etc. If not used, conveyor rubber can be stored with tires for recycling and/or disposal at a licenced offsite facility;
- ▶ **Vehicles and equipment:** Regular maintenance will prolong the life of vehicles and equipment. When they are no longer usable for the Project, they will be driven or shipped offsite to be reused or recycled. The unusable vehicles and equipment will be stored in a designated laydown area until they are shipped offsite; and
- ▶ **Waste lumber:** Waste lumber will be generated during the Construction Phase and throughout the Project life from building by-products. Waste lumber will be reused as much as possible on the Project site. Waste lumber not immediately reused will be placed in designated bins in the Recycle/Reuse area for eventual burning at a permitted location onsite.

6.11.2 Solid Domestic Waste

Solid domestic waste will include putrescible food waste, food packaging, and inert non-combustible domestic waste. The domestic waste will be contained in bear-proof bins or recycle containers until it is shipped offsite for disposal at a local municipal landfill or for disposal in the landfill onsite or at composting facilities.

- ▶ **General waste:** General waste will consist of waste from offices, lunchrooms, and other work areas. Personnel will be informed of the items that are recyclable and that need to be placed in the recycling containers. The remainder of the materials will be stored in bear-proof bins and shipped offsite to a local municipal landfill or for disposal in the landfill on site.

6.11.3 Sewage and Sewage Sludge

The domestic sewage generated onsite will be treated in the Sewage Treatment Plant prior to being discharged to the Wastewater Storage Pond. Any small quantities of sludge that accumulates in this pond will be shipped offsite for disposal or used as fertilizer during reclamation activities.

6.12 Emissions and Airborne Contaminants

The main source of emissions from the Project will be from Minesite equipment and will include carbon monoxide (CO), nitrogen oxide (NO_x), sulphur dioxide (SO₂), particulate matter (PM), and other greenhouse gases (GHGs). Efforts will be made to reduce these emissions, and the BMPs can be found in the **Air Quality Management Plan (S13.0-C2) (AQMP)**.

Methane stored within coal seams and the surrounding strata are liberated when pressure above or surrounding the coal bed is reduced. For this Project, methane released from coal mining will be vented directly to the atmosphere. The following measures will be used to reduce methane release:

- ▶ Limit the amount ROM coal exposed in the open pit; and
- ▶ Minimize the time it takes for processed coal to travel through the mining and logistic stages.

6.12.1 Dust

The main source of fugitive dust will be from vehicles travelling on unpaved roads. Fugitive dust from processed and ROM coal will be generated from coal processing and handling. Efforts will be made to reduce these emissions and the related BMPs can be found in the **AQMP**. In summary, two (2) main types of dust emissions will be generated from the Project which are:

1. Coal dust: Dust emissions may be generated by wind erosion when stockpiled materials have small particle sizes. Dust from stockpiles will be mitigated using water, chemical agent additions, conveyor drop heights and pile shape optimization. Dust from the conveyors will be controlled by partially covering the conveyors and encasing the drop points; and
2. Road dust: Mitigation controls for unpaved roads include vehicle speed restrictions, minimizing volume, surface improvement, and surface treatment. TCL will be responsible for maintenance of the Tenas Access Corridor (TAC) including dust mitigation. Vehicle operators will be required to minimize their stopping and starting and adhere to posted speed limits.

6.13 Site Contamination

There are currently no known contaminated sites in the Project Area; however, during the Construction and Operation, Decommissioning and Reclamation phases, there is the potential for spills of hydrocarbons and glycol from mobile equipment and fuel stations. As per **6.10 Management of Hazardous Waste** spills will be prevented, contained, and cleaned up with spill response products, as per the **FMSCP**. The contaminated soil or snow will be moved to the Soil Treatment Facility for treatment, or based on criteria in the Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) placed in specified containers and sent offsite for treatment by a licenced contractor. This will also be the process for treatment of contaminated overburden and soils in the Reclamation and Decommissioning Phase of the Project.

7. MONITORING

Monitoring, reporting, and enforcement of waste management procedures is fundamental to ensuring the efficacy of the WMPRE. A monitoring program will alert management when corrective action is necessary to ensure compliance with the WMPRE, procedures, and permit requirements.

The Mine Manager (or delegate) and Environmental Coordinator will ensure the following is completed:

- ▶ Inspection of waste collection and disposal areas for proper segregation, storage, and disposal;
- ▶ perform periodic reviews of the waste collection areas including procedures, training, equipment, records, and employee awareness; and
- ▶ review the inspection findings with area supervisors, operation personnel, transporters, and contractors to correct deficiencies, improve procedures, maintain awareness and communication, and recognize positive or negative performance.

Inspection reports will be delivered to the managers responsible for the inspected sites with copies provided to the Environmental Coordinator and Mine Manager (or delegate).

Waste will be monitored by each department, and sites with potential for procedural non-compliance will be inspected on a regular basis as defined by the level of the risk. Offsite and onsite disposal will be documented by tracking offsite transport manifests, waste type, volume, method of disposal, and location.

Tracking of the waste streams by each department will show where changes can be made to continually improve the waste management system over the life of the Project. Tracking will also alert management to areas or departments that may require new procedures or particular attention.

A summary of the tracking will be reported annually by each department head to the Environmental Coordinator and Mine Manager (or delegate), along with an analysis of the effectiveness of the existing systems and any proposed improvements.

7.1 Performance Objectives

The performance objectives for the proper implementation of this WMPRE are shown in **Table 7.1-1**.

Table 7.1-1: Performance Objectives

Indicator	Target
Monitoring of waste streams to identify incorrect waste storage/disposal	100% correct identification
Documenting soil and/or water contamination caused by incorrect disposal	zero incidences of incorrect disposal

8. REPORTING

8.1 General Reporting

Reporting completed by TCL will ensure consistent implementation of the WMPRE. Summary reports of monitoring activities and results will be compiled and reviewed annually.

Routine reporting according to a schedule of monitoring inspections will be undertaken in a structured manner such that the management of waste can be accurately tracked. Inspections will cover onsite facilities (e.g., waste collection and disposal areas) and documentation such as inventories, waste manifests and logbooks. The frequency of scheduled inspections will be dictated by the relevant policies, plans, and procedures.

Reports will be reviewed internally by the responsible Supervisor and the Environmental Coordinator, to identify necessary improvements in the monitoring system. Where required, reports will be forwarded to relevant government agencies and Indigenous groups as stipulated by regulations, licenses, and permit conditions.

Any emergency or spill incidents will be reported per the requirements of the **FMSCP** and **Mine Emergency Response Plan (S13.0-C9) (MERP)**.

8.2 Compliance Reporting

Compliance reporting will be subject to EAC and *MA/EMA* permit conditions. The data gathered during monitoring practices will be summarized with information from other management plans into an Annual Environmental Management Summary Report and upon permitting completion, the Annual Environmental Reports as required by *MA/EMA* permits. Community engagement activities will be an aspect of the **Socio-economic Management Plan (S13.0-C16) (SEMP)**. The **SEMP** will have requirements related to reporting on community engagement programs.

8.3 Internal Reporting

Details of the monitoring will be reported internally on an annual basis according to the adaptive management framework of the EMS. The report will provide results of monitoring, assessment of performance objectives, and including but not necessarily limited to volume of waste produced by the site and TDG inspection failures.

TCL staff or contractors will be strongly encouraged to report any inefficiency to management for evaluation consideration.

9. ROLES AND RESPONSIBILITIES

Primary responsibilities have been assigned to the following roles or groups:

9.1 Mine Manager

The Mine Manager bears overall responsibility for the construction and operation of the Project, and responsibility for onsite environmental monitoring and compliance relating to Construction, Operation Decommissioning and Reclamation, and Post-Closure phase activities. The Mine Manager reports to the executive steering committee for TCL and will coordinate with this group to ensure that Project objectives are being met.

The Mine Manager will:

- ▶ ensure that the requirements of the WMPRE are implemented and maintained;
- ▶ facilitate the annual review of the WMPRE;
- ▶ allocate resources to implement this WMPRE for continued compliance;
- ▶ allocate and designate required people to effectively apply necessary controls;
- ▶ ensure appropriate corrective actions identified through inspections, Incident Investigation Reports, and reviews are implemented and verified in a timely fashion; and
- ▶ submit regulatory reports to the appropriate authority.

9.2 Mine Superintendent

The Mine Superintendent reports to the Mine Manager. The Mine Superintendent will:

- ▶ ensure that the requirements of the WMPRE are implemented and maintained;
- ▶ allocate resources to the Environmental Coordinator to conduct inspections and manage the Project environmental programs and permits, and
- ▶ facilitate the annual review of the WMRPE.

9.3 Environmental Coordinator

The Environmental Coordinator is responsible for the day-to-day management of Project environmental programs and permits. The Environmental Coordinator reports to the Mine Superintendent.

The Environmental Coordinator will:

- ▶ maintain the waste materials inventory and registry;
- ▶ ensure temporary hazardous waste storage permits and hazardous waste manifesting requirements or licencing are in place and provide a resource to other Project departments on these legislative requirements;
- ▶ coordinate the dissemination of information to various departments, including waste segregation procedures and colour coding and labelling requirements;

- ▶ identify and coordinate required training of personnel, including contractors; and ensure training is conducted through the appropriate training process;
- ▶ prepare procedures, guidelines and forms for the efficient storage, handling, and transfer of waste material;
- ▶ conduct appropriate inspections and monitoring required by the WMPRE;
- ▶ prepare corrective actions when necessary and investigate deteriorating trends, assess whether the practices can be applied to other areas of the Project and report the actions to the Mine Manager;
- ▶ review the WMPRE on an annual basis or earlier whenever relevant circumstances change or when incidents occur that necessitate a revision, and update the plan as necessary;
- ▶ prepare required reports to the Mine Superintendent regarding inspections and audits; and
- ▶ conduct other tasks and duties to ensure the MSDS inventory and the WHMIS program operate effectively.

9.4 Supervisors

Supervisors will:

- ▶ ensure workers receive appropriate training on the WMPRE and various specific requirements related to waste removal and housekeeping within the workplace, including obtaining TDG training;
- ▶ ensure workers are aware of the relevant health, safety, and environmental requirements for waste materials in the workplace; and
- ▶ ensure workers comply with the relevant legislated requirements and environmental approval requirements regarding waste materials in the workplace.

9.5 Employees and Contractors:

Employees and contractors will:

- ▶ comply with the relevant legislated requirements and environmental requirements regarding waste materials in the workplace; and
- ▶ participate in and cooperate with training, inspections, corrective actions, and reviews related to the WMPRE.

10. COMMUNICATION

Communication of the WMPRE at TCL will be based on internal requirements and will primarily take place through this WMPRE and relevant SPPs. Any significant change to WMPRE will be communicated to Minesite employees and contractors through a site-wide email, announcements over radio channels by Minesite supervision and bulletins posted around the Minesite. When effective to do so, maps will be marked with changes.

10.1 Training and Awareness

Waste materials sometimes include hazardous materials and require special handling and training procedures. Employees, contractors, and subcontractors who are handling waste materials for the Project will be provided with WHMIS and TDG training or be required under contract to have that training, so they can identify waste materials including hazardous materials and know how to handle and transport them appropriately.

10.2 Employee and Contractor Training

The environmental awareness and training of personnel involved in Construction, Operation, and Decommissioning and Reclamation, and Post-closure phase activities on the Project is a critical factor in achieving the objectives outlined in this WMPRE. Those responsible for the management, implementation, and operation of any aspect of this WMPRE will be competent for their role. Prior to the commencement of work onsite, employees and contractors, including those responsible for moving equipment to site, will:

- ▶ attend an induction session that will provide a brief overview of the types of hazardous materials and dangerous goods used and stored on the Project, the hazards associated with the materials, and the use and maintenance of protective equipment and gear;
- ▶ receive WHMIS and TDG training; and
- ▶ review and understand the requirements of this WMPRE.

In addition, workers will receive additional training in waste handling appropriate for the work they are undertaking.

10.3 Visitor Training

Visitors will not be required to be knowledgeable of this WMPRE as they will be under the direction of TCL employees and will not be allowed to be in a situation involving waste handling.

11. EVALUATION AND ADAPTIVE MANAGEMENT

11.1 Evaluation

A review of the WMPRE will be completed by the Environmental Coordinator on an annual basis to compare data, trends, and implementation of the management plans and their objectives. This process will include a review of the management plan deliverables and input received from Indigenous groups and stakeholders through community engagement programs.

11.2 Adaptive Management

A philosophy of adaptive management will be adopted to ensure that management plans and mitigation measures are consistently meeting or exceeding performance targets. This will be achieved through periodic reviews of the WMPRE and the results of monitoring programs.

TCL will work towards continual improvement to reduce waste and ensure appropriate handling of materials at the Project. The Environmental Coordinator will investigate improvements in any trend and assess whether the practices responsible for the improvements can be applied to other areas of the Project. This includes decreasing waste volumes and looking for potential reductions in materials.

Deteriorating trends will be studied to determine the root cause. When the cause is identified, the Environmental Coordinator will propose a suitable corrective action to the Mine Manager or delegate. Examples of corrective actions could include:

- ▶ finding alternate forms of materials to reduce waste or increase reusability;
- ▶ additional training of employees and contractors on procedures;
- ▶ enhancement of maintenance or monitoring measures; and/or
- ▶ additional supervisory oversight.

11.3 Continual Improvement

TCL will amend the WMPRE as required based on annual evaluations and feedback from relevant stakeholders and Indigenous groups. Any proposed changes regarding management of waste and concerns from the public or Indigenous groups will be sent out for review by these groups as needed before being finalized and implemented into the WMPRE.

12. CHANGE MANAGEMENT

Changing any part of this WMPRE requires a formalized process to be used. If significant changes to objectives, structure, operational milestones, communication and/or information management are being planned, it is required that the Management of Change (MOC) procedure in the **EMS** be followed. Minor edits and/or updates to this WMPRE will be controlled through version control and content approval functions.

13. CONCLUSION

Management of waste materials at TCL is important for the safety of personnel onsite, the community, and for the protection of the environment. Through implementation of this WMPRE and relevant SPPs, TCL will ensure the safe storage, transfer, reuse, recycling, and disposal of waste materials at the Project.

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