BC EAO EAC Application – Tenas Project

Section 13.0 Management Plans
Chapter 3 Chemicals and Materials, Storage, Transfer, and Handling Plan

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Submitted by:	Telkwa Coal Limited Suite 1410 – 409 Granville Street Vancouver, BC V6C 1T2

Tenas Project

Section 13.0 Management Plans
Chapter 3 Chemicals and Materials, Storage, Transfer, and Handling Plan

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ABBREVIATIONS AND ACRONYMS

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
AQMP	Air Quality Management Plan (S13.0-C2)
ANFO	Ammonia Nitrate and Fuel Oil
BC	British Columbia
BC MECCS	British Columbia Ministry of Environment and Climate Change Strategy
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)
CEPA	*Canadian Environmental Protection Act*, 1999, SC 1999, c 33
CHWSTF	Chemical and Hazardous Waste Storage and Transfer Facility
CMSTHP	Chemicals and Materials, Storage, Transfer, and Handling Plan (S13.0-C3)
Code	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)
DMP	Discharge Management Plan (S13.0-C5)
EAC	Environmental Assessment Certificate
ECCC	Environment and Climate Change Canada
EMP	Explosives Management Plan (S13.0-C6)
EMS	Environmental Management System (S13.0-C1)
FMSCP	Fuel Management and Spill Control Plan (S13.0-C7)
GovBC	Government of British Columbia
GovCan	Government of Canada
JAIR	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)
MA/EMA	*Mines Act*, RSBC 1996, c 293 and *Environmental Management Act,* SBC 2003, c 53
MERP	Mine Emergency Response Plan (S13.0-C9)
MIBC	methyl isobutyl carbinol
MOC	Management of Change
MSDS	Material Safety Data Sheet
NPRI	National Pollutant Release Inventory
OHSP	Occupational Health and Safety Program (S13.0-C13)
Orica	Orica Canada Inc.
PPE	Personal Protective Equipment

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
Project	Tenas Project
QP	Qualified Professional
S	Section
SEMP	Socio-economic Management Plan (S13.0-C16)
SEPSCP	Surface Erosion Prevention and Sediment Control Plan (S13.0-C17)
SPPs	Standard Practices and Procedures
TCL	Telkwa Coal Limited
TDG	Transportation of Dangerous Goods
VMP	Vegetation Management Plan (S13.0-C18)
WHMIS	Workplace Hazardous Materials Information System
WMPRE	Waste Management Plan for Refuse and Emissions (S13.0-C20)

UNITS OF MEASURE

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
*	multiple of
kg	kilogram
L	litre
m^3	cubic metre

EXECUTIVE SUMMARY

With proper use, storage and disposal, most chemical substances and materials pose minimal risk to people and the environment. Some chemicals and materials manufactured or used under certain conditions can lead to exposure that has either short- and/or long-term harmful effects and are therefore classified as hazardous. Risk management of chemicals and other potentially hazardous material involves preventing and/or controlling the conditions that may cause harm, such as: the use of a chemical or material, the way it is made, how it is disposed of, and/or the amount or concentration that is released to the environment and/or exposed to personnel.

The Chemicals and Materials Storage, Transfer, and Handling Plan (CMSTHP) describes the management processes and procedures associated with dealing with chemicals and materials, some of which may be hazardous to either personnel onsite and/or the surrounding environment.

This CMSTHP is designed to fulfill the guidance provided by 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), and *Mines Act*, RSBC 1996, c 293 and *Environmental Management Act*, SBC 2003, c 53 (*MA/EMA*) permits for British Columbia (BC). As such, the CMSTHP is expected to exceed the requirements for the Environmental Assessment Certificate (EAC) Application.

Management of chemicals and materials at the Tenas Project (Project) is important for the environment and the safety of personnel onsite. Through implementation of this CMSTHP and relevant SPPs that may be developed, TCL will ensure the safe transfer, handling, storage, and use of chemicals, potentially hazardous materials, and waste materials.

1. INTRODUCTION

The Tenas Project (Project) will require various chemicals and materials to allow for mining, coal processing, water management, and reclamation activities to be successfully accomplished. With the use of any substance, there is a potential for adverse effects from these chemicals and materials. The Chemicals and Materials Storage, Transfer, and Handling Plan (CMSTHP) describes the management processes and procedures associated with dealing with chemicals and materials.

The CMSTHP 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.

2. PURPOSE AND OBJECTIVES

The purpose of the CMSTHP is to ensure compliance with federal and provincial regulations and minimize onsite risk by adopting industry best practices and applying them to specific site conditions.

With proper use, storage, and disposal, most chemical substances and materials pose minimal risk. Some chemicals and materials manufactured or used under certain conditions can lead to exposure that has harmful short- and/or long-term effects and are therefore classified as hazardous. Risk management of chemicals and materials involves preventing or controlling the conditions that may cause harm, such as: the use of a chemical and material, the way it is made, how it is disposed of, and/or the amount or concentration that is released to the environment and/or exposed to personnel.

This CMSTHP is designed to fulfill the guidance provided by 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), and *Mines Act*, RSBC 1996, c 293 and *Environmental Management Act*, SBC 2003, c 53 (*MA/EMA*) permits for British Columbia (BC). As such, the CMSTHP is expected to exceed the requirements for the Environmental Assessment Certificate (EAC) Application. .

This CMSTHP is just one (1) component of the overarching **Environmental Management System (EMS) (Section [S]13-Chapter [C] 1)** for the Project.

3. SCOPE AND SCALE

The scope of the CMSTHP 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 CMSTHP is in effect during all Project phases of the Project and ceases to be in force at the final closure of the Project as approved by regulatory authorities.

4. COMPLIANCE OBLIGATIONS

4.1 Regulatory Requirements

Several legislative requirements are applicable to chemical and hazardous materials management and disposal. A list of these requirements and their major applicable components are provided in **Table 4.1-1** below.

Table 4.1-1: Legislation Relevant to the Chemicals and Materials Storage, Transfer, and Handling Plan (CMSTHP)

Legislation, Regulation, and Guidelines	Applicable Information
Canadian Environmental Protection Act, 1999, SC 1999, c 33 (Government of Canada [GovCan] 1999) (*CEPA*)	Regulates the protection of the environment including pollution protection and related fines for non-compliance with applicable regulations. Mandates annual reporting to the National Pollutant Release Inventory (NPRI) for applicable facilities.
Environmental Management Act, SBC 2003, c 53 (Government of British Columbia [GovBC] 2003) (*EMA*)	The *EMA* 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 Act.
Explosives Act, RSC 1985, c E-17 (GovCan 1985a)	Regulates use and handling of explosives in blasting.
Fisheries Act, 1985, c F-14 (GovCan 1985b)	Prohibits the release of a deleterious substance to fish habitat.
Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988)	Addresses the proper registration, storage, handling and disposal of chemicals and hazardous wastes, under the *EMA*. Chemical wastes are to be manifested for transportation offsite as prescribed by this regulation.
Health, Safety and Reclamation Code for Mines in British Columbia (British Columbia Ministry of Energy, Mines and Low Carbon Innovation [BC MEMLI] 2021) (Code)	The Code provides direction regarding the protection of worker health and safety at mines, Workplace Hazardous Materials Information System (WHMIS) requirements for chemicals, mine permitting and reclamation.
Mines Act, RSBC 1996, c 293 (GovBC 1996)	Regulates activities on mineral claims registered to the proponent and applies to mines during exploration, development, construction, production, closure, reclamation, and abandonment.
Pest Control Products Act, SC 2002, c 28 (GovCan 2002)	Regulates use of pesticides on properties.
Public Health Act, SBC 2008, c 28 (GovBC 2008)	Provides direction on the management of health hazards.
Transportation of Dangerous Goods Act, SC 1992, c 34, Transportation of Dangerous Goods Regulations, SOR/2001-286 (GovCan 1992)	Includes a substance classification system and specifies requirements for transportation of dangerous goods.
Waste Discharge Regulation, B.C. Reg. 154/2019 (GovBC 2019)	"Prescribes" which industries and trades are regulated under the *EMA* and prescribes annual fees.
Water Sustainability Act, SBC 2014, c 15 (GovBC 2014)	Provides guidance on protecting aquatic ecosystems and handling wells and groundwater protection.

The JAIR for *MA/EMA* provides direction on the objectives for a chemical and hazardous materials storage and handling plan. This CMSTHP is designed to fulfill the JAIR objectives quoted below as well as EAC Application requirements.

- *List and provide descriptions of potential chemicals and substances classified as or deemed to be potentially hazardous (including toxic chemicals/substances) and that will be used and produced during any mine/project phase (e.g., construction, development, operation).*
- *Describe storage, transfer, and handling plans and procedures for the identified chemicals and substances. Clearly indicate how compliance with Sections 2.3.3, 2.3.4, 2.3.6, 2.3.8, and 2.13.1 through 2.13.20 of the Code will be achieved.*
- *Given that the hazardous products utilized during construction and operation are likely to be adjusted over the life of the project, outline a policy or procedure for product procurement that identifies and assigns responsibility and a process for assessing storage, emergency/spill response, potential worker exposure, and general health and safety considerations, prior to bringing a new product on site.*
- *Refer to the Hazardous Waste Regulation of the EMA for further information on hazardous materials.*

4.2 Standard Practices and Procedures (SPPs)

Telkwa Coal Limited (TCL) Standard Practices and Procedures (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 CMSTHP has a relationship with other management plans that also present mitigation measures. Those management plans and their relationship to the CMSTHP are listed in **Table 5-1**.

Table 5-1: Management Plans with Relationship to the Chemicals and Materials, Storage, Transfer, and Handling Plan (CMSTHP)

Management Plans	Nature of Relationship
Air Quality Management Plan (S13.0-C2) (AQMP)	Dust control chemicals will be stored, handled, and disposed of in accordance with this plan.
Construction Environmental Management Plan (S13.0-C4) (CEMP)	Any chemicals and materials used during Tenas Project (Project) Construction Phase will be handled in accordance with the CEMP.
Discharge Management Plan (S13.0-C5) (DMP)	Flocculant products will be handled in accordance with the DMP.
Environmental Management System (S13.0-C1) (EMS)	All management plans are part of the EMS.
Explosives Management Plan (S13.0-C6) (EMP)	Handling of any chemicals used at the Explosive Facility or Magazine and/or during the blasting process will be handled in accordance with the EMP and this Chemicals and Materials, Storage, Transfer, and Handling Plan (S13.0-C3) (CMSTHP).
Fuel Management and Spill Control Plan (S13.0-7) (FMSCP)	Handling of spills of chemicals and materials onsite or during transport will be dealt with in accordance with the FMSCP.
Mine Emergency Response Plan (S13.0-C9) (MERP)	Response to emergencies from storage, use or disposal of chemicals are addressed in the MERP.
Occupational Health and Safety Program (S13.0-13) (OHSP)	Workplace Hazardous Materials Information System (WHMIS) labelling of containers and reporting incidents of improper handling of chemicals are addressed in the OHSP.
Surface Erosion Prevention and Sediment Control Plan (S13.0-17) (SEPSCP)	Flocculant products will be handled in accordance with the SEPSCP and the CMSTHP.
Vegetation Management Plan (S13.0-18) (VMP)	Invasive plants are managed by this plan. Proper handling of pesticides to manage invasive plants.
Waste Management Plan for Refuse and Emissions (S13.0-20) (WMPRE)	Hazardous waste is managed by this plan. Chemical waste disposal to follow regulations and standards for hazardous waste.

6. DETAILS OF THE CHEMICALS AND MATERIALS, STORAGE, TRANSFER, AND HANDLING PLAN (CMSTHP)

6.1 Introduction

Project construction and operations require materials to be transported and stored onsite. Where possible, agreements will be made with suppliers to ensure 'just in time' delivery of materials and chemicals to ensure minimum quantities are stored by TCL.

Substances transported, handled, used, stored, or disposed of for the Project will be identified as being hazardous or non-hazardous to human health and/or the environment. Hazardous chemicals and materials in BC will be identified in accordance with federal *Hazardous Products Act*, RSC 1985c, c H-3 (Government of Canada [GovCan] 1985), Hazardous Waste Regulation, BC Reg. 63/88 (GovCan 1988),Transportation of Dangerous Goods Regulations, SOR/2001-286 (GovCan 2001), Workplace Hazardous Materials Information System (WHMIS), Code, and the *Mines Act*, RSBC 1996, c 293 (GovBC 1996).

Hazardous substances will be classified and labelled according to requirements as specified under these statutes and other legislation as appropriate. For example, explosives under the *Explosives Act,* RSC 1985, c E-17 (GovCan 1985); pesticides under the *Pest Control Products Act*, SC 2002, c 28 (GovCan 2002).

Each class of hazardous material is associated with at least one (1) supplier label, and potentially multiple labels, depending on the number of divisions and sub-divisions under the class of product. One (1) or more labels are attached to the material's storage container or transport vehicle to provide a quick means of communicating the possible hazards associated with the material. Each hazardous material storage container will also have an appropriate "WHMIS label", if and where required.

Containers with materials will be labelled in accordance with relevant acts and regulations and will comply with requirements of WHMIS including labelling and provision of Material Safety Data Sheets (MSDS). A binder of MSDS will be maintained for the Project at appropriate areas, from the commencement of the Construction Phase through to the Post-closure Phase of the Project. These binders will be reviewed regularly and will be updated as necessary whenever a new hazardous material comes to or is encountered at the Minesite.

6.2 Chemicals and Materials Identification

Chemicals and materials will be required at the Project from the onset of the Construction Phase through to the Post-closure Phase of the Project. A MSDS will be required for each chemical/material prior to delivery onsite. Most products will be consumed onsite, but some (i.e., reagent wastes) will need offsite disposal after use. **Appendix 13.7-A** provides the MSDSs for materials to be used for the Project. This will be expanded on and updated on a periodic basis and as new materials are brought onsite.

Chemicals and materials that will be used during mining can be grouped into the following categories:

- hydrocarbons;
- explosives; and
- chemicals.

A list of chemicals and materials that may be stored and/or used by the Project and are hazardous or potentially hazardous is provided in **Table 6.2-1** below. The list is approximate and will be subject to change during the Project life.

Table 6.2-1: Hydrocarbons, Chemicals, Lubricants and Materials List for the Tenas Project

Material	Site Category	Location	Stored Amount
Diesel	Hydrocarbons	Pit Fueling Station	1 * 100,000 L
		Rail Infrastructure Fueling Station	1 * 20,000 L
Gasoline	Hydrocarbons	Light Vehicle Fueling Station	1 * 20,000 L
DEF	Hydrocarbons	Pit Fueling Station	4 * 5,000 L
		Rail Infrastructure	1 * 1,000 L
Lubricants and Used Oil	Hydrocarbons	Pit Fueling Station	5 * 3,000 L, 1 * 2,200 L
		Maintenance Lubricant Storage Facility	4 * 8,000 L, 4 * 3,000 L
		Rail Infrastructure Fueling Station	3 * 3,000 L, 1 * 2,200 L
Glycol and Used Glycol	Hydrocarbons	Pit Fueling Station	1 * 3,000 L; 1 *2,200 L
		Maintenance Lubricant Storage Facility	1 * 8,000 L, 1 * 8,000 L
		Rail Infrastructure Fueling Station	1 * 1,000 L, 1 * 2,200 L
Grease	Hydrocarbons	Pit Fueling Station	1 * 1,000 L
		Maintenance Lubricant Storage Facility	1 * 1,000 L
		Rail Infrastructure	1 * 1,000 L
Diesel (Process Reagent)	Hydrocarbons	Process Reagent Storage Facility	1 * 20,000 L
Methyl Isobutyl Carbinol (MIBC) (Process Reagent)	Chemicals	Process Reagent Storage Facility	1 * 20,000 L
Ammonia Nitrate and Fuel Oil (ANFO)	Explosives	Explosive Facility	50,000 kg
Emulsion	Explosives	Explosive Facility	30,000 kg
Packaged Emulsion	Explosives	Explosive Magazine	14,000 kg
Acetylene	Gas	Maintenance Facility	2 * 30,000 L
Oxygen	Gas	Maintenance Facility	2 * 50,000 L
Paint	Chemicals	Maintenance Lubricant Storage Facility	1 * 100 L, 1 * 50 L
Solvents	Chemicals	Maintenance Lubricant Storage Facility	3 * 200 L
Flocculants (Magnafloc 10)	Chemicals	Maintenance Lubricant Storage Facility	1,000 kg
Flocculants (IPACFLOC 16)	Chemicals	Process Reagent Storage Facility	1,000 kg
Envirocrust 829C	Chemicals	Rail Infrastructure Fueling Station	24,000 L
Enviromelt SCR1	Chemicals	Rail Infrastructure Fueling Station	16,000 L

Notes: **=multiple of; kg=kilogram; L=litre; m^3=cubic metre; MIBC=methyl isobutyl carbinol.*

6.3 Chemical and Material Storage

Management practices for storing chemical and materials will include the following measures:

- Hazardous substances will be stored in containers appropriate for their hazard classification, and in accordance with any other information contained in their respective MSDS (and in accordance with regulatory requirements as appropriate. For example, explosives under the *Explosives Act,* RSC 1985, c E-17 (GovCan 1985a);
- Hazardous substances will be stored in compliance with WHMIS procedures;
- Substances will be clearly labelled to indicate the product identifier, the safe handling instructions, and the MSDS availability;
- MSDS will be accessible and available in the First Aid Room, Health, Safety, and Human Resources Superintendent's office, (CPP) Control Room, and the TCL office in the Village of Telkwa's office building;
- Hazardous and other substances and equipment will not be stored in evacuation routes. Evacuation routes will be kept clear;
- Storage areas will be designed to ensure the safety of workers and the environment;
- Storage areas will be provided with adequate ventilation and lighting;
- Storage areas will not be located in areas normally occupied by employees;
- Process reagents will be stored inside at the Process Reagent Storage Site near the CPP and will be equipped with level indicators and instrumentation to ensure that spills do not occur during normal operation. Appropriate ventilation, fire, and safety protection, and MSDS information for the process reagents will be provided at the CPP;
- Storage areas appropriate for the containers will be used;
- Storage areas will be designed to safely store a sufficient quantity of the hazardous material over a prescribed period of time;
- Storage areas will be designed to contain and minimize the effect of a potential spill to personnel and mitigate contamination of the environment;
- Incompatible chemicals or materials which may result in chemical reactions will be stored in separate areas;
- Storage areas will be protected from weather and other environmental hazards where necessary;
- Hazardous materials in drums or packages will be stored on pallets to prevent contamination of runoff;
- Storage area floors, bunding (constructed retaining wall around storage for the purposes of containing any unintended escape), walls and roofs will adequately contain spills;
- All necessary equipment to clean and mitigate spills, including fire prevention equipment, will be stored in or near the storage area;
- Smoking will be prohibited in chemical and material storage areas as smoking anywhere onsite is prohibited;
- Containers will be made for hazardous materials that are comprised of non-reactive materials;
- Only containers that are in good condition will be used for the storage of chemicals and materials; and

- Explosive components will be stored in separate secure, designated facilities, located safe distances from other facilities as recommended by qualified professionals and regulatory requirements.

There will be chemical storage locations at the Project as summarized in **Table 6.2-1**.

The Chemical and Hazardous Waste Storage and Transfer Facility (CHWSTF) will be established at one (1) central location for ease of transport offsite. It will be located adjacent to the Maintenance Facility in the southeast corner. The hazardous waste materials stored in this area will include non-hydrocarbon-based waste materials (e.g., chemicals) and hydrocarbon-based waste materials requiring offsite disposal. These wastes will be temporarily stored in appropriate bins or open head drums located in the Maintenance Facility and will be transferred to the CHWSTF as required. Process reagent waste will be stored temporarily in appropriate bins in the CPP prior to transfer to the CHWSTF for ultimate disposal of items required to go offsite.

Bulk liquid materials will have dedicated tankage; empty lubricant drums, lubricant cubes, and other bulk product containers will also be stored in a central location. There will be separate depository bins and/or drums for oil filters and used batteries within the CHWSTF. Bins for other hazardous materials requiring offsite disposal will be provided at required locations and then transferred to the CHWSTF. Other than used coolant, filters, used oil, grease, and batteries, chemicals, minimal hazardous waste materials requiring offsite disposal are expected to be generated from the Project. Specialized bins and/or containers may also be used where required. The **Waste Management Plan for Refuse and Emissions** (**S13.0-C20**) **(WMPRE)** is also pertinent to the CMSTHP.

6.4 Chemical and Material Transfer

Hazardous substances will be transported in containers and vehicles appropriate for their Transportation of Dangerous Goods (TDG) hazard classification. Management practices for hazardous materials transportation will include the following:

- Containers appropriate for the material will be used;
- Containers will be labelled to communicate the hazard the material represents;
- Container material will be compatible and non-reactive with the transported hazardous substance;
- Only containers that are in good condition will be used;
- Incompatible or reactive materials will not be transported in the same container;
- Keep hazardous materials separate from each other during transport;
- Incompatible materials will be transported in separate shipments;
- Explosives components will be transported separately;
- Design vehicles and transportation plans to minimize the chance of a potential spill;
- Containers will be properly secured during transport;
- Containers will be sufficiently spaced in the transport vehicle to allow safe access and handling of containers;
- Design vehicles and transportation plans to minimize the effect of a potential spill, should one occur;
- All necessary equipment to clean and mitigate spills, including fire prevention equipment, will be kept in or near the vehicle; and

- Smoking in and/or around hazardous substances, materials or chemical transport vehicles will be prohibited. Smoking anywhere onsite is prohibited.

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

Chemical and hazardous material waste that needs to be disposed of offsite will be manifested as required in accordance with Hazardous Waste Regulation, BC Reg. 63/88 (GovBC 1988) and transported to an approved hazardous waste facility that will issue a certificate of destruction. Periodic audits of this facility to ensure proper handling and destruction of hazardous waste will be considered.

6.5 Chemical and Material Handling

Management practices for chemical and materials handling and use will include the following measures:

- Hazardous substances will be handled and used in accordance with information in their respective MSDS and in accordance with regulatory requirements as appropriate. A MSDS is a comprehensive but concise source of health and safety information for workers and emergency personnel;
- Process reagent lines and addition points will be labelled in accordance with WHMIS standards;
- Appropriate Personal Protective Equipment (PPE) will be made available and worn by employees involved in hazardous substance handling operations;
- Employees will use extreme caution if the container of a product being handled ruptures and starts giving off gases/odours. If the material's properties are unknown, the area will be evacuated until the MSDS can be referenced to confirm the management of hazards for that substance;
- Each process reagent will be prepared in its own contained area to limit spillage effects and facilitate return to its respective tank;
- Explosives will be handled by Orica Canada Inc. (Orica) and not manufactured onsite. Orica will be contracted to supply, deliver, and load required explosives into the blast holes;
- Smoking will be prohibited in and around explosive, oxidizing, reactive, or flammable hazardous materials, and material handling areas and signed as such. Furthermore, smoking is prohibited onsite; and
- Fire-fighting equipment will be kept at explosive, oxidizing, reactive, or flammable hazardous substance handling areas.

Chemical and hazardous material wastes will be handled using the same guidelines as above.

7. MONITORING

TCL will conduct regular inspections of the CHWSTF to ensure proper procedures are being followed and there is no potential for spills. Inspection and inventory of response supplies and equipment will also be undertaken. An inspection schedule will be developed for each storage site, considering the volume of material stored at each site and the respective risks related to that storage location. Inspections will include tanks, pipelines, chemical waste storage areas, bunding, connections, valves, gauges and meters, sumps and separators, and inventory records. Inspections will be recorded and provided to the Mine Manager.

Monitoring will also include investigating reports of non-compliance with acts, regulations, community agreements, and/or EAC or *MA/EMA* permit conditions, once authorized, and any reported health and safety incidents and spill reports from the Project. These will be compiled and included in the Annual Environmental Management Summary Report and after permitting, the Annual Environmental Reports as required by *MA/EMA* permits or EAC conditions.

Some components of inspection and monitoring programs that apply to all Project phases are listed below:

- quarterly inspection of hazardous substance storage facilities;
- inspection of spill kits and protective equipment (and reorder and replacement as necessary);
- periodic review of transportation procedures (including TDG procedures, training, equipment, spill kits, waste manifest records and employee awareness);
- review inspection results with personnel, transporters, and offsite contractors to correct deficiencies, and maintain awareness and communication;
- review of training records to ensure that relevant personnel are trained in the use and maintenance of protective equipment, hazardous materials handling and storage (including WHMIS); and
- inventory of hazardous substances at the Project site.

7.1 Performance Objectives

The performance objectives and targets TCL will use to ensure proper implementation of the CMSTHP are shown in **Table 7.1-1**:

Table 7.1-1: Performance Objectives

Objective	Target
Number of non-reportable chemical or material spills	Continual improvement
Number of reportable chemical and material spills	Zero
Number of chemical storage inspections and if necessary, need for improvement	Regular quarterly reports or more frequent inspections and continual improvement
Proper maintenance of Material Safety Data Sheets (MSDS) for chemical products	MSDS are up to date
Number employees and contractors with valid Workplace Hazardous Material Information System (WHMIS) training	All employees required to deal with chemicals and potentially hazardous materials
Annual Environmental Management Summary Reports	Completed and distributed to Indigenous groups and made available to the public as per Community Engagement Plan

8. REPORTING

8.1 General Reporting

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

An Inspection Program will be developed to ensure that chemical and material storage, transfer and handling practices are compliant with both relevant legislation and this CMSTHP. The Inspection Program will be carried out by the Environmental Coordinator and/or other senior management, supervisory personnel, and employees from the user area. The Inspection Program will be based on monitoring plans and performance objectives.

8.2 Compliance Reporting

Compliance reporting will be subject to EAC and *MA/EMA* permit conditions. The information 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.

As mandated by the *Canadian Environmental Protection Act*, 1999, SC 1999, c 33 (GovCan 1999) (*CEPA*), TCL will also report required emissions data annually to the National Pollutant Release Inventory (NPRI) (Environment and Climate Change Canada [ECCC] 2020).

8.3 Internal Reporting

Details of the monitoring and inspection results 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 where applicable, and any other pertinent information.

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

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. 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 a system and resources are in place to track the purchase, delivery, use, and disposal of chemical and hazardous materials;
- ensure designated employees have the knowledge and the resources available to safely handle chemicals and hazardous materials used on the Minesite;
- ensure the resources are in place to respond to emergencies involving chemicals and hazardous materials;
- provide final approval of purchase orders of hazardous materials and chemicals;
- review performance objectives monthly to ensure this CMSTHP is meeting its purpose and objectives; and
- report non-compliance reportable Incidents to the appropriate agency.

9.2 Mine Superintendent

The Mine Superintendent will oversee the implementation of the CMSTHP and support the Environmental Coordinator regarding chemical material procurement, inspections, and reporting processes.

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:

- be notified and approve purchase orders of chemicals and hazardous materials;
- act as a resource by providing guidance relating to permit conditions, commitments, regulations, acts, and interpretation of legislation during all phases of the Project;
- be responsible for the completion and implementation of the EMS and related management plans;
- coordinate the completion and submission of the annual NPRI report;
- report on monitoring, performance objectives, and NPRI results;
- be the liaison for government agencies for permitting and non-compliance environmental incidents;
- be the liaison for Indigenous groups, through their designated representatives;

- be the liaison for permitting and for chemical and hazardous material storage or handling issues; and
- report to the Mine Manager any incident which results in a spill, potential spill, or non-compliance incident.

9.4 Health, Safety, and Human Resource Superintendent

The Health, Safety, and Human Resources Superintendent is responsible for the day-to-day management of onsite health and safety, and human resources. The Health, Safety, and Human Resources Superintendent reports to the Mine Manager.

The Health, Safety, and Human Resources Superintendent will:

- be notified and approve purchase orders of chemicals and hazardous materials;
- act as a resource to departments and construction teams by providing occupational health and safety guidance relating to regulations, acts, interpretation of legislation, company policy, and safe work procedures;
- liaise with a third-party Qualified Professional (QP) in occupational safety to ensure that use of chemical and hazardous materials is considered in the implementation of the **Occupational Health and Safety Program (S13.0-C13) (OHSP);**
- report on the results of workplace monitoring and performance objectives with regard to safe chemical and hazardous materials storage and handling;
- be the liaison for government agencies for health and safety related non-compliance incidents;
- ensure that employees have received current training on the safe use of chemical and hazardous materials with which they may come into contact, and in spill response procedures and reporting requirements;
- ensure designated employees responsible for the transport of dangerous goods have appropriate training and tickets in place; and
- ensure the emergency response plan identifies risk and the appropriate response to incidents involving chemicals and hazardous waste.

The Health, Safety, and Human Resources Superintendent will also have specific chemical and hazardous material storage, or handling management responsibilities as follows:

- track safety Incidents including Dangerous Occurrences, medical and First Aid incidents and employee feedback;
- maintain MSDS binders for the Project including expiry notifications, removing older versions, replacing updated MSDSs, and adding new product MSDSs;
- develop a chemical and hazardous materials inventory tracking system;
- develop chemical and hazardous materials storage and handling procedure training specific to each department and area of the Project;
- review and update spill response procedures in the **Fuel Management and Spill Control Plan (FMSCP)** (**S13.0-C7**) for chemicals and hazardous materials for each department and area of the Minesite;
- ensure employee reporting requirements are followed to capture incidents or potential incidents involving spills or injury;

- ensure employees are trained in safe operating procedures and incident reporting requirements; and
- report to the Mine Manager any Incident which results in injury, potential injury, property damage, spills, or non-compliance.

9.5 Supervisors

Supervisors will:

- comply with and enforce the requirements of the CMSTHP and the Code;
- provide available resources to workers so that safe operating procedures, and reporting requirements of the management plan are adhered to; and
- report Incidents or Dangerous Occurrences and spills involving chemicals and hazardous materials to the Mine Superintendent or Mine Manager.

9.6 Employees and Contractors

Employees and contractors will:

- comply with the requirements of the CMSTHP and the Code;
- follow safe storage and handling procedures as approved by the Mine Manager; and
- report Incidents or Dangerous Occurrences and spills involving chemicals and hazardous materials to their Supervisor.

10. COMMUNICATION

Communication of the CMSTHP at TCL will be based on the internal requirements of this CMSTHP and relevant SPPs. Any significant change to a chemical and hazardous material or training requirement 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.

10.1 Training and Awareness

Chemical and hazardous materials require special handling and training procedures. All employees, contractors, and subcontractors who are handling chemical and hazardous materials for the Project will be provided with WHMIS training or be required under contract to have that training, so they can identify chemical and hazardous materials and know how to handle them appropriately.

10.2 Employee and Contractor Training

The training of personnel involved in Construction, Operation, and Decommissioning and Reclamation phase activities on the Project is a critical factor in achieving the objectives outlined in this CMSTHP. Those responsible for the management, implementation, and operation of any aspect of this CMSTHP will be competent for their role. Prior to the commencement of work onsite, employees and contractors, 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 PPE;
- receive WHMIS training; and,
- review and understand the requirements of the CMSTHP and the Code.

In addition, workers will receive additional training in chemicals and materials storage and handling appropriate for the work they are undertaking.

10.3 Visitor Training

Visitors will not be required to be knowledgeable of this CMSTHP as they will be under the direction of TCL employees and will not be allowed to be in a situation involving chemical and material storage.

11. EVALUATION AND ADAPTIVE MANAGEMENT

11.1 Evaluation

A review of the CMSTHP 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 stakeholders.

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 CMSTHP and the results of monitoring programs.

11.3 Continual Improvement

TCL will work towards continual improvement at the Minesite to reduce waste and ensure appropriate handling of materials. The Mine Manager or delegate 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 Mine Manager or their delegate will implement a suitable corrective action.

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
- additional supervisory oversight.

TCL will amend the CMSTHP as required based on annual evaluations and feedback from relevant stakeholders. Any proposed changes will be sent out for review by relevant stakeholders before being finalized and implemented into the CMSTHP.

12. CHANGE MANAGEMENT

Changing any part of this CMSTHP requires a formalized process to be used. If significant changes to objectives, management plan 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 CMSTHP will be controlled through version control and content approval functions.

13. CONCLUSION

Management of chemicals and materials at TCL is important for the safety of personnel onsite and the environment. Through implementation of this CMSTHP and relevant SPPs, TCL will ensure the safe transfer, storage and use of chemical and materials.

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