

## Tier 3: Water Plants Orientation - 17

### 1. Water Plants Orientation

#### *1.1 Water Plants Orientation*



## ***1.2 Water Plants Orientation***

# **Water Plants Orientation**

Tier Three – Site Specific Access

### 1.3 Course Objectives

## Course Objectives

Upon completion of this module as a worker you will be able to:

- Follow Plant Entry Procedure
- Identify Site Specific Hazards and Controls for the Water Treatment plants.
- Follow Procedures in the event of:
  - Equipment Damage
  - Personal Injury
  - Process Upset (Emergency Preparedness)
- Complete Plant Exit Procedure Checklist



## ***1.4 Water Plants Overview***

# Introduction

Water Plants Overview

## 1.5 Water Plants Overview

### Water Plants Overview

Water treatment is any process that makes water more acceptable for a specific end use.

Vale has two processes for treating water:

#### Water Treatment for potable Water:

- Vermillion River Pumphouse
- Vermillion Water Treatment Plant

#### Water Treatment for Wastewater to the environment:

- Copper Cliff Water Treatment Plant
- Nolin Creek Water Treatment Plant

## 1.6 Water Plants Overview

# Water Plants Overview

**Vermillion River Pumphouse**  
pumps 8500-11700 gpm to the  
Vermillion Water Treatment Plant.



## 1.7 Water Plants Overview

# Water Plants Overview

### Source Water Protection Zone

The Vermilion River around the Vermilion Pumphouse is a protected municipal drinking water source.

The Source Water Protection Plan prohibits the use of Glyphosate (Roundup) near the Vermilion Pumphouse.



## 1.8 Water Plants Overview

### Water Plants Overview

The **Vermillion Water Treatment Plant** is responsible for the treatment and the distribution of potable water used by Vale Plants and by the communities of Lively, Copper Cliff, Naughton, and the Atikameksheng Anishnawbek First Nation.

The Vermillion Water Treatment Plant pumps out about 4500 - 8000 gallons per minute.





## 1.9 Water Plants Overview

### Water Plants Overview

#### Vale Vermillion Water Treatment Plant Drinking Water QMS Policy

Vale is committed to providing safe drinking water to the City of Greater Sudbury municipal drinking water distribution system, in accordance with all applicable legislative and regulatory requirements, as well as the maintenance and continual improvement of a Quality Management System.

The Vermillion Water Treatment Plant is operated in accordance with the Ministry of Environment's Drinking Water License which includes a Quality Management System (QMS.)

Anyone working at the Vermillion Water Treatment Plant, the Vermillion Pumphouse or within the plumbing works is required to be aware of the QMS and Policy.

Acknowledgement of the QMS policy is required when signing in at the Vermillion Plant.

## 1.10 Water Plants Overview

### Water Plants Overview

The **Copper Cliff** and **Nolin Creek Wastewater Treatment Plants** provide environmental protection against heavy metal and suspended solids contamination of the water discharged into the environment.



## ***1.11 Plant Entry***

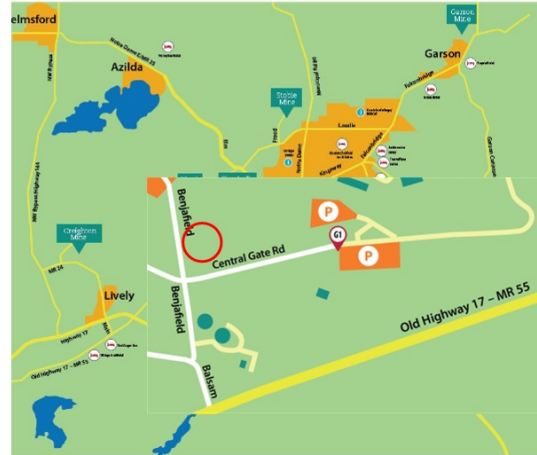
# **Plant Entry**

Driving In, Walking In

## 1.12 Approaching The Plant

# Approaching The Plant

The Copper Cliff Waste Water Treatment Plant is accessed via Benjafield Drive off Balsam Street.



### 1.13 Approaching The Plant

## Approaching The Plant

The Vermillion Water Treatment Plant is accessed via Wavell Street.

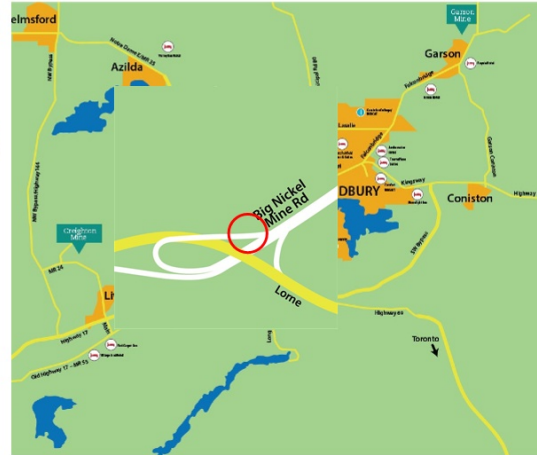
The Vermillion River Pumphouse is accessed via Creighton Mine Road, turning off following River Pumphouse roadway.



## 1.14 Approaching The Plant

### Approaching The Plant

Nolin Creek Waste Water Treatment Plant can be accessed via Big Nickel Mine Road during the day shift once signed in, otherwise access through the Smelter Complex through the Central Gate towards the slag dump area.



## 1.15 Parking

# Parking

**All of the buildings associated to the Water Treatment Plants have parking areas in front or beside the building.**

- Always park in an area where you won't disturb the regular operation of the plant
- Do not block any equipment or supplies situated around the buildings
- Do not obstruct any loading areas or docks
- If in doubt as to where to park, ask your Vale Contact Person



Inform your Vale contact person when you are on site so that you may start your job.

## 1.16 Approaching Sign in Location

# Approaching Sign in Location

All contractors and visitors to the Water Treatment Plants must sign in and sign out at the Control Room of the plant being entered.

There are two main sign in locations:

- **Copper Cliff Water Treatment Plant (CCWTP) Control Room:**
  - Copper Cliff Waste Water Treatment Plant
  - Nolin Creek Pumphouse



Inform your Vale contact person when you are on site so that you may start your job.



## 1.17 Approaching Sign in Location

# Approaching Sign in Location

All contractors and visitors to the Water Treatment Plants must sign in and sign out at the Control Room of the plant being entered.

There are two main sign in locations:

- **Vermillion Water Treatment Plant (VWTP) Control Room:**
  - Vermillion Water Treatment Plant
  - Vermillion River Pumphouse



Inform your Vale contact person when you are on site so that you may start your job.

# Plant Hazards and Controls

## 1.19 Site Specific Hazards

### Site Specific Hazards

Using the tools that you learned in Tier 1 Orientation, ensure you apply the necessary operation controls to mitigate risk associated to the identified hazards.



#### **Be Aware**

Be aware of your surroundings and the risks around you.



#### **Follow Policies & Procedures**

Our internal policies and procedures guide us in doing our work in a manner that reduces risk.

**The following section lists identified hazards that may be encountered in the work you're doing. Knowing if these hazards apply to your work can be found through:**

- Vale Contact Person
- PHA/PHR (or other Risk Assessment Tools)
- SLAM

## 1.20 Water and Waste Water Treatment Plant Chemicals

### WWWTP Chemicals – Hazard

#### Water and Waste Water Treatment Plant Chemicals

**An essential stage in the treatment of water is the physical and chemical process to remove particles or contaminants harmful to either humans or the environment.**

For the most part, this is done through the use of chemicals or additives. Although each individual chemical has its own inherent set of risks, they are managed by the Water Treatment Plant Operators, who are certified stationary engineers.

Workers who may be assigned to work in this area and potentially exposed to these chemical hazards need specific training, identified in a PHR/JHA risk assessment.



## 1.21 Water and Waste Water Treatment Plant Chemicals

# WWWTP Chemicals – Hazard

### Water and Waste Water Treatment Plant Chemicals

The chemicals used at Vale's Water and Waste Water Treatment Plants are:

- Chlorine
- Hydrofluosilicic Acid
- Aluminum Sulphate
- Caustic Soda
- Sodium Aluminate
- Zinc Phosphate
- Polymer(8171)
- Lime
- Metclear
- Polymer (Percol 338)
- Sulphuric Acid



## 1.22 Water and Waste Water Treatment Plant Chemicals

# WWWTP Chemicals – Control

### Water and Waste Water Treatment Plant Chemicals

**Having effective communication with the Control Room Operator is essential to mitigating risk. Other key controls to follow are:**

- Participate in any risk assessments, informal or formal that pertain to the work you're doing.
- Request Safety Data Sheets for any chemicals you may be exposed to and abide by instructions provided.
- Ensure that are wearing all prescribed PPE.



## 1.23 Water and Waste Water Treatment Plant Chemicals

# Waste Water – Hazard

### Waste Water

**Vale's waste water treatment plants serve two purposes:**

- Provide treatment to remove solid material and to digest dissolved and suspended organic material and disinfect to kill bacteria.
- Take industrial process water and comply with environmental regulations before discharging back to the local water table.

Vale's Waste Water may contain bacteria, fungi, parasites, viruses and chemicals that can expose workers to harm. If equipment, work practices, and personal protective equipment (PPE) don't protect from being exposed to these agents, you can get sick.



## 1.24 Water and Waste Water Treatment Plant Chemicals

# Waste Water – Control

### Waste Water

**During any part of treatment, transport, or application of sewage, sewage sludge or wastewater, you can be exposed to materials that can cause disease.**

As a safety precaution, if working at the CCWWTP it is suggested that you are current on your Tetanus shots and have received the Twinrix vaccination before working at the Water Plants.

Other key items to follow:

- Communication with the Control Room is essential
- Wear all prescribed PPE



Careful work habits can help protect you.



## ***1.25 Equipment Damage***

# **Equipment Damage**

## 1.26 Equipment Damage

# Equipment Damage

An incident is an event that results in loss or harm to personnel (injury/illness), environment, asset, or equipment.

Even with "near misses", all workers, including Offsite Personnel are encouraged to initiate and/or participate.

Intent is to prevent recurrences and reduce or eliminate any further injuries.

Get in touch with your Vale Contact Person for any information required on the Incident/Accident Investigation system.

### Incident Management (SAP IM)



Click to log into the SAP IM database to process Incident, Near Miss, and Unsafe Condition reports.



Web-based Search tool  
Records are from prior day or earlier



SAP IM Procedures  
Tools & Resources

## ***1.27 Personal Injury***

# **Personal Injury**

## 1.28 Personal Injury

# Personal Injury

**You must immediately report all injuries and incidents regardless of their severity to *All* of these people:**

- Your Supervisor and Vale Contact Person
- Site Specific First Aid Office or #1 First Aid
- Control Room or DCS for the area where applicable

#1 First Aid  
**(705) 682-6622**

Copper Cliff Treatment Plants  
**(705) 682-6358**

Vermillion Water Plants  
**(705) 692-9500**

**\*\*\*these areas are manned 24/7**

## ***1.29 Emergency Preparedness***

# **Emergency Preparedness**

### 1.30 Emergency Preparedness

## Emergency Preparedness

The Surface Tier 2 Orientation provided guidance on the application of Emergency Preparedness including activating an emergency and how to classify.

The following is how to respond to an emergency at the Water Treatment Plants.



### 1.31 Water Treatment Plants

## Notification – Water Treatment Plants

#### Before you begin work, find out:

- The nearest phone location
- The nearest door number
- The nearest safe assembly area(s) to your work location in the case of a notification



#1 First Aid  
**(705) 682-6622**

Copper Cliff Treatment Plants  
**(705) 682-6358**

Vermillion Water Plants  
**(705) 692-9500**

**\*\*\*these areas are manned 24/7**

### 1.32 Emergency Preparedness Procedures – Site Specific

## Emergency Preparedness

The following control rooms are the Internal Safe Assembly Areas for the following areas:

**Copper Cliff Water Treatment Plant (CCWTP) Control Room:**

- Copper Cliff Waste Water Treatment Plant
- Nolin Creek Pumphouse





### 1.33 Emergency Preparedness Procedures – Site Specific

## Emergency Preparedness

The following control rooms are the Internal Safe Assembly Areas for the following areas:

**Vermillion Water Treatment Plant (VWTP) Control Room:**

- Vermillion Water Treatment Plant
- Vermillion River Pumpouse



## 1.34 Emergency Preparedness Procedures – Site Specific

# Emergency Preparedness

The following parking lots are the External Safe Assembly Areas for the following areas:

The Copper Cliff Waste Water Treatment Plant parking lot

The Vermilion Water Treatment Plant Parking Lot

Vermillion River Pumphouse Parking lot

The Nolin Waste Water Treatment Plant Parking Lot



VWTP Parking Lot



CCWTP Parking Lot



NWTP Parking Lot

### ***1.35 Plant Exit***

# **Plant Exit**

## 1.36 Plant Exit

### Plant Exit

Good work practices dictate that you close the loop on work you were doing to avoid creating risks or hazards for other work groups, cross shifts, or other work in the area. Here are some tasks to consider when getting ready to exit the plant to ensure the safety to you and those around you:

- ✓ **Housekeeping** – Is your worksite cleaned up after your job?
- ✓ **Personal Lock and Tag** – Has your personal protection been removed at the end of the shift.
- ✓ **Status Tagging** - Is there ongoing work that needs a status tag placed or is there equipment in Bad Order that needs to be identified?
- ✓ **End States** – Have you left the process in the proper state?
- ✓ **Waste Segregation** - Have you disposed of materials in the appropriate waste receptacles/bin/area?
- ✓ **Control room** – Do I need to let the control room know that I'm clear of an area?
- ✓ **Vale Contact Person** – do they need an end of shift report from me?
- ✓ **Permits** – do I need to close or hand in any permits?
- ✓ **Sign out at the gate or other designated areas**

### ***1.37 Conclusion***

# Conclusion

### 1.38 Conclusion

## Conclusion

**This concludes the material for the Waste and Waste Water Treatment Plants Tier 3 Orientation. You should now have a working knowledge and understanding of:**

- Plant Entry
- Site Specific Hazards and Controls for the Waste and Waste Water Treatment Plants in the event of:
  - Equipment Damage
  - Personal Injury
  - Process Upset (Emergency Preparedness)
- Plant Exit Procedure

This Orientation provided information to access the Water Treatment Plants. In order to feel comfortable with the area, you may arrange a field visit with your Vale Contact Person to specifically identify procedures provided in the Orientation.

Additionally, depending on the site or work you're doing, you may require task-specific information through either the local Learning & Development Group or your Vale Contact Person.

### **1.39 Start The Module Quiz**



**Thank you for completing the  
Vale Online Module Training.**

To start the module Quiz

**CLICK HERE**