

TSM Verification Summary Report

Facility Information

Name of company	Vale
Name of facility	Port Colborne Refinery
Address	187 Davis Street Port Colborne, ON L3K 5W2
Country of operation	Canada
Products/metals produced on site	Electrolytic Cobalt, Platinum Group Metals (PGM) concentrate, Gold Sand, Silver Sands, Bismuth Cake, Iridium Cake, Selenium Cake, Tellurium Dioxide Cake
Types of operations included in scope:	
Mining	<input type="checkbox"/>
Milling	<input type="checkbox"/>
Smelting	<input type="checkbox"/>
Refining	<input checked="" type="checkbox"/>
Other (<i>please explain</i>)	
Types of infrastructure included in scope:	
Roads	<input checked="" type="checkbox"/>
Rails	<input type="checkbox"/>
Ports	<input type="checkbox"/>
Other (<i>please explain</i>)	

Verifier and Verification Information

Verification firm	Rubinoff Environmental Inc.
Confirmation that all verifiers involved in the verification are accredited TSM verifiers	Yes
Date(s) of verification activities (dd/mm/yyyy – dd/mm/yyyy)	30/06/2022-28/09/2022
Verification period	Year prior to Verification end date



Summary of the verification methodology	All applicable Protocols were verified for this operation. There are not tailings at this facility.
Summary of the verification activities	Planning: Site Visit: Opening meeting, virtual tour, interviews with corporate and site personnel, document review, interviews with COI, closing meeting; Follow-up; Reporting

Summary of Findings

Criterion	Rating C, B, A, AA or AAA (unless otherwise indicated)	Comments
Biodiversity Conservation Management		
1. Corporate biodiversity conservation commitment, accountability, and communications	AAA	The Vale Sustainability policy includes a commitment to biodiversity. The policy is supported by the Guidelines and Processes for Biodiversity Management and its appendix Biodiversity Management Manual which includes the application of the mitigation hierarchy. The commitments in these documents are consistent with MAC Biodiversity Framework. Commitment has been communicated to employees and COI. Responsibilities and resources have been assigned. An independent verification of the commitment was conducted. Vale's commitment includes a stated ambition of no net loss. Vale actively partners with other organizations. Facility meets the requirements of Level AAA.
2. Biodiversity conservation planning and implementation	AAA	A baseline study was conducted in 2002 as part of the Community-Based Risk Assessment (CBRA). Significant biodiversity aspects have been identified. Additional studies (e.g., Natural Heritage) have been conducted. No development of these ecological-sensitive areas is planned. A project to protect the sand dunes is underway. Key COI have been consulted with. Global and site-specific biodiversity objectives exist related to



Criterion	Rating C, B, A, AA or AAA (unless otherwise indicated)	Comments
		reduction of impacted land. The status is reported monthly. Biodiversity is integrated with business process and budgeting. An independent verification of the management system implementation was conducted. The facility has made investments in research, is contributing to greater scientific understanding and has encouraged employees to volunteer in biodiversity initiatives. Facility meets the requirements of Level AAA.
3. Biodiversity conservation reporting	AA	The facility reports on its biodiversity KPI monthly to management and to Vale corporate. This information is reported on an aggregate basis in the Vale Sustainability Report. The biodiversity data in the Sustainability Report is externally verified. Biodiversity information is also included in the Report to the Community. Sustainability Reports (vale.com) Facility meets the requirements of Level AA.
Crisis Management and Communications Planning (Indicate YES or NO)		
1. Crisis Management and Communications Preparedness	YES	The Hazard Identification Risk Assessment (HIRA) identifies Material Unwanted Events (MUE) as credible threats. Emergency Plans exist to respond. EMQnet is used to manage the crisis including roles and responsibilities. EMQnet allows remote access; and the Maple Conference Room at NAOC is designated as a crisis room. Location specific documents on EMQnet include stakeholder lists and media lists. Facility meets regularly with local emergency response authorities. Facility meets all criteria for this indicator.



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2. Review	YES	EMQnet acts as a document control system for crisis documents. The facility's plans are shared with corporate through the document management system. The notification system was tested (recently through actual crises). Crisis team members are familiarized with the plan. Training can be through EMQnet modules, facilitated training or participation in an exercise. Facility meets all criteria for this indicator.
3. Training	YES	A table top drill was conducted in December 2021 for a truck accident with NACL. A full crisis events occurred with Totten Mine employees trapped underground and for 2 fatalities events. Facility meets all criteria for this indicator.
Energy Use and GHG Emissions Management		
1. Energy Use and GHG Emissions Management Systems	AAA	The Sustainability Policy and Climate Change Policy demonstrates senior management commitment. An Energy Use and GHG emissions management system is in place. Energy data is disaggregated by operation. Standard factors are used for conversions and are described in the spreadsheet for process sources and in Credit 360 for energy sources. General awareness training is provided and operations are provided with 5CP training. The Energy and GHG Management System was subject to verification as part of the VPS audit. Vale has made voluntary corporate investments through the Low Carbon program and has invested in wind projects at Voisey's Bay and in hydro-electric infrastructure in Sudbury. Facility meets requirements of Level AAA.



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2. Energy Use and GHG Emissions reporting systems	AAA	<p>Energy use and GHG are reported regularly to site management and corporate and publicly as part of Federal and Provincial GHG Reporting programs and rolled up as Vale in the Sustainability Report. The energy use and GHG emissions reporting system is internally verified by Vale personnel. Aggregated Vale performance against targets and Vale's corporate strategy are included in the Sustainability Report. Energy and GHG emissions are externally verified through the Cobalt Institute and as part of the Vale Sustainability Report and. Some scope 3 emissions are included in corporate reporting. Facility meets the requirements of Level AAA.</p> <p>Sustainability Reports (vale.com) include link to public disclosure or reference the form of public reporting if no web link available</p>
3. Energy Use and GHG Emissions performance targets	A	<p>Vale has set corporate targets for GHG reductions (33% by 2030) and for zero-net GHG emissions by 2050. Ontario Division (including Port Colborne) met its planned targets in 2021 and 2020 but did not meet its 2019 or 2018 target. Energy use and GHG emissions performance has been externally verified. The facility has some performance strategies that meet an additionality test. For example, the Roadmap shows NPV (a proxy for ROI) and has made investments in new technologies (battery electric vehicles). Facility meets the requirements of Level A.</p>



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Indigenous and Community Relationships		
1. Community of Interest (COI) Identification	A	Communities of Interest are identified and documented on the Ontario Stakeholders List. There is a documented process in place for COI identification and is described in corporate documents. Indigenous groups have historically not been included as COI at Port Colborne. Work has been done to identify Indigenous COI. Facility meets the requirements of Level A.
2. Effective COI Engagement and Dialogue	A	The facility provides assistance to ensure COI are able to participate by providing complimentary access to Health and Wellness Centre so COI can attend the Vale Open House. Reporting on engagement and dialogue takes place at monthly leadership performance meetings. There is a formal engagement process related to the Community-Based Risk Assessment (CBRA). Information on engagement, including feedback, is included in the Vale Sudbury Community Report. Facility meets the requirements of Level A.
3. Effective Indigenous Engagement and Dialogue	B	On the Vale website, there are stated commitment to Indigenous engagement consistent with the TSM Framework. T Historically, Indigenous groups were not included as COI for Port Colborne. here have been some engagement processes and occasional dialogue with Indigenous communities. Processes are being developed to engage more fully. Facility meets the requirements of Level B.



Criterion	Rating C, B, A, AA or AAA (unless otherwise indicated)	Comments
4. Community Impact and Benefit Management	A	Vale's Sustainability Policy commits to being a Sustainable Operator, Local Development Catalyst and Global Sustainability Agent. Social impacts are identified and controlled through B Wise Mitigation Controls. The CBRA process identified risks and prioritized mitigation to the community. Vale contributes to a number of organizations to benefit a broad spectrum of the community and has created a Community Improvement Fund working with the City. These contributions are noted in the Report to the Community and in press releases. Facility meets the requirements of Level A.
5. COI Response Mechanism	A	A Community Concerns Hotline is in place. supported by a documented Response Protocol. Concerns from the hotline are documented and followed-up and tracked. Reports are provided monthly to the Base Metals Executive Committee. COI are proactively informed on how to access the response mechanism Facility meets the requirements of Level A.
Preventing of Child and Forced Labour (Indicate YES or NO)		
1. Preventing Forced Labour	YES	Vale's Human Rights Policy states "We prohibit the use of any types of employment practice that may be construed as equivalent to forced or mandatory labor." Vale's Supplier Code of Conducts requires "All suppliers must prohibit and renounce the use of child labour, forced labour and slave-like labour." Vale meets the requirements of a Yes.



Criterion	Rating C, B, A, AA or AAA (unless otherwise indicated)	Comments
2. Preventing Child Labour	YES	<p>Federal regulation prohibits children under the age of 17 from working in an underground mine. Various Provincial regulations (including Ontario, Manitoba and Newfoundland & Labrador) prohibit children under the age of 18 from working in an underground mine.</p> <p>Vale's Human Rights Policy states "We prohibit the use of child labor..."</p> <p>Vale's Supplier Code of Conducts requires "All suppliers must prohibit and renounce the use of child labour, forced labour and slave-like labour."</p> <p>Vale meets the requirements of a Yes.</p>
Safety and Health		
1. Commitments and Accountability	AA	<p>The Sustainability Policy defines the policy commitments. The Policy has been communicated to staff and the Golden Rules to contractors. A senior management representative is accountable for safety and health. An internal VPS audit was conducted by Vale in 2021.</p> <p>The facility meets the requirements of Level AA.</p>
2. Planning and Implementation	AA	<p>A formal Safety and Health Management System is in place including objectives, risk assessments, critical control verification, workplace inspections, defined roles and responsibilities, maintenance of records. The industrial hygiene program is overseen by a qualified hygienist. An internal Vale Performance System (VPS) audit was conducted by in 2021. Critical controls have been identified and verified.</p> <p>Facility meets the requirements of Level AA.</p>



Criterion	Rating C, B, A, AA or AAA (unless otherwise indicated)	Comments
3. Training, Behaviour and Culture	AA	<p>A robust training system is in place. Senior leadership demonstrates a commitment and a safety-based culture is encouraged. Trainees are assessed for competency and trainers are qualified. The facility promotes health and wellness with programs to support work mental health. The commitment to safety and health is visibly embedded and management demonstrated the commitment through one-on-one interactions.</p> <p>Facility meets requirements of Level AA.</p>
4. Monitoring and Reporting	AA	<p>Safety and Health metrics are monitored and reported including leading and lagging indicators. Leadership reviews performance weekly. Safety information is communicated to employees through PORTS. Safety and Health data is publicly reported in the Vale Sustainability Report. An internal VPS audit was conducted in 2021.</p> <p>Sustainability Reports (vale.com)</p> <p>Facility meets requirements of Level AA.</p>
5. Performance	AA	<p>Targets are set for leading and lagging indicators and performance is regularly reviewed and communicated. Facility benchmarks its performance against its peers.</p> <p>Facility meets all requirements of Level AA.</p>
Tailings Management		
1. Tailings management policy and commitment		Not applicable. There are no tailings at this facility
2. Tailings management system and emergency preparedness		Not applicable. There are no tailings at this facility



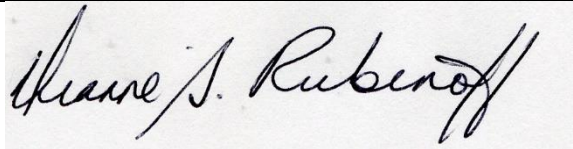
Criterion	Rating C, B, A, AA or AAA (unless otherwise indicated)	Comments
3. Assigned accountability and responsibility for tailings management		Not applicable. There are no tailings at this facility
4. Annual tailings management review		Not applicable. There are no tailings at this facility
5. Operation, maintenance, and surveillance		Not applicable. There are no tailings at this facility
Water Stewardship		
1. Water Governance	A	<p>There is demonstrated senior management through the Sustainability Policy and the Water and Water Resources Policy consistent with the MAC Water Framework. The commitment is communicated through PORT meetings and in community open houses. Roles and responsibilities are defined in the Management of Water Resources document.</p> <p>Facility meets the requirements of Level A.</p>
2. Operational Water Management	AA	<p>The site has identified facility-level risks related to surface water and ground water. Processes are established to monitor water performance for both surface water and groundwater. Records of water quality and quantity are maintained.</p> <p>The site has a systematic approach to operational water management. The facility has a site wide water balance that is reviewed regularly. Processes are established to monitor water performance for both surface water and groundwater. Records of water quality and quantity are maintained. Response plans have been established for water related risks and incidents. Relevant employees and contractors have been provided with appropriate training (ETP</p>



Criterion	Rating C, B, A, AA or AAA (unless otherwise indicated)	Comments
		Operator). Opportunities to improve water performance have been identified. Critical controls are monitored. An internal audit has been conducted. Facility meets the requirements of Level AA.
3. Watershed-scale Planning	AA	<p>Vale has identified watershed in the Environmental Impacts and Aspects map. Relevant COI have been identified. Responsibility of water-shed planning has been designated.</p> <p>Engagement with the City of Port Colborne, Niagara Peninsula Conservation Authority and Niagara Coastal has taken place and opportunities have been identified. The facility communicates with relevant COI (e.g., governmental agencies) to help them understand how operational practices address risks.</p> <p>Facility meets the requirements of Level AA.</p>
4. Water Reporting and Performance	AA	<p>Vale's water performance target is documented on the Vale website. Progress is reported in the monthly HSER meeting. Public reporting of performance against target is included in the Vale Sustainability report. The data in the Sustainability report was independently verified. The Port Colborne target was not met in the reporting year; however, plans are in place to address in 2022.</p> <p>Sustainability Reports (vale.com)</p> <p>Facility meets the requirements of Level AA.</p>



Statement of Verification

Statement of Verification	
The external verification was conducted in accordance with the <i>Terms of Reference for Verifiers</i> and, accordingly, consisted primarily of interviews, data analysis, and examination (on a sample basis) of other evidence relevant to management's assertion of conformance to the requirements of the TSM performance indicators.	<input checked="" type="checkbox"/> The external verification was conducted in accordance with the <i>TSM Verifier Terms of Reference</i> .
The scores indicated in this report are verified as being accurate based on the evidence reviewed during the external verification of this facility.	<input checked="" type="checkbox"/> The scores in this report are considered accurate based on this verification.
Limitations	Even though the information provided by the company was thoroughly reviewed, Rubinoff Environmental Inc. was required to rely on this information without being able to independently verify its accuracy.
Additional comments	
Name of lead verifier	Dianne Rubinoff, P.Eng.
Date of statement of verification	14/12/2022
Signature of lead verifier	



1. Verification Evidence

This section presents a summary of the key evidence used to verify the self-assessed levels.

1.1 Biodiversity Conservation Management

Key Personnel Interviewed:

- Vale Port Colborne Superintendent of Environment
- Vale Sudbury/Port Colborne Project Engineer
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- POL-0019-G Sustainability Policy (with reference UN Sustainable Development Goals)
- PNR0029 Guideline and Processes for Biodiversity Management
- Green Tool Box Talks– Birds and Bees, Fish
- New Employee Orientation (NEO) – info on Community Based Risk Assessment (CBRA) Habitat study, frogs, birds
- Vale Community Based Risk assessment (CBRA) website (Overview, Additional Studies, Summary of CBRA Findings and Conclusions, Community Health Assessment Project (CHAP), Community-Based Action Plan)
- Welcome to Vale’s Annual Open House slides
- TSM Biodiversity Independent Internal Verification/Review conducted Q. Smith (Vale Sudbury) September 2022
- Annual Budget for CBRA Action Plan
- Emails with Niagara Peninsula Conservation Authority and Niagara Coastal re: sand dunes on Nickel Beach and Wignell drain project
- Pictures of signage on Nickel Beach
- Niagara Coastal poster – Volunteers Needed
- Port Colborne Environmental Aspects and Impacts Map and Tear Drop explanation
- Emails with Niagara Coastal re: Wignell drain wetland project
- Community Garden photos
- Inco Port Colborne Refinery Aquatic Baseline Studies by Beak & Klohn-Crippen, December 1997
- Fish and Fish Habitat Summary Report – Port Colborne Refinery Shoreline Stabilization Fisheries Assessment by Golder, October 2021
- Technical Memo Port Colborne Refinery Shoreline Stabilization Fisheries Assessment – Mitigation Measures by Golder, October 2021
- Vale Port Colborne Refinery Shoreline Stabilization by Dillon, April 2021
- Vale Port Colborne Community Action Plan (PCCAP)- Natural Heritage Inventory and Woodlot Health Assessment Report, by North-South, December 2021
- PCCAP Preliminary Draft Aquatic Survey Report (surface water and sediment), July 2021
 - Ontario Stakeholders – July 2022
 - Sudbury Stakeholder Map
- Vale Production System (VPS) Framework
- Environmental Manual for Projects MA-G-650E
- Landscape Carbon Accumulation through Reduction Emissions (L-CARE) 2017 funding agreement



- Landscape Carbon Accumulation through Reduction Emissions (L-CARE) Stakeholders Wrap-Up Symposium Agenda December 2021
- Landscape Carbon Accumulation through Reduction Emissions (L-CARE) Paper on Carbon Sequestration by Trees on a Metal-Impacted Landscape
- Vale Sustainability Report
- Vale ESG Data Book
- Port Colborne Operations Update 2020-2021

1.2 Crisis Management and Communications Planning

Key Personnel Interviewed:

- Vale Sudbury/Port Colborne Lead Emergency Response and Mine Rescue
- Vale Disaster Management Specialist for Base Metals
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- PNR-000033-HIRA for Material Unwanted Events (MUEs)
- HIRA – Loss of Containment Natural Gas from Piping Distribution System (including bow-tie analysis)
- Ontario Division Material Unwanted Events Overview
- CCNR Emergency Preparedness Manual
- EMQnet
- Base Metals Severity Matrix EMQnet
- Ontario Crisis Management Team (EMT Team) membership
- EMQnet Profile Packs
- EMQnet contact documents (Location Specific Documents)
- Job Description Specialist, Corporate & Indigenous Affairs, Ontario Operations
- NAOC Maple Room
- Sudbury Stakeholder Map
- GSEMAP quarterly drill (Sandstorm April 2022)
- Ontario Crisis Management Team training records
- Team Status Report
- EMQnet reports for Table Top Exercise Dec 2021 – Collision with Haulage Truck and Truck Carrying NACN
- EMQnet reports for Totten Mine Actual Event Sep 2021- Employees Trapped Underground

1.3 Energy Use and GHG Emissions Management

Key Personnel Interviewed:

- Vale Energy Management Lead North Atlantic
- Vale Sudbury/Port Colborne Superintendent Environment - Air
- Vale Sustainability and Government Relations Specialist



Documents Reviewed:

- POL-0019-G Sustainability Policy (with healthy, safe work environment and to zero harm)
- POL-002-G Climate Change Policy
- VPS Element 14
- EnMP 5-2-8
- Values 2021 – Credit360 output
- Vale Port Colborne Refinery GHG Emissions spreadsheet
- Carbon Inputs (reagents) spreadsheet
- Energy Management North Atlantic presentation
- Environmental Minute Slides for July 2022 (ISO 14001, Energy and GHG as SEA)
- 5CP Overview Presentation
- Sample 5CP Forecast, Alert and Performance emails
- 5CP Forecast and Alert emails for August 2, 2022, August 7, 2022 and July 19-20, 2022
- Port Colborne 5CP Response Performance graph – August 8, 2022
- 2020 and 2021 North Atlantic GHG KPI Performance (Ontario Operations)
- Green Tool Box Talk – planned – October 2022 Topic GHG
- NA GHG Variance Analysis by Location
- Vale North Atlantic 2023 Planned Projects
- 2020 NA Roadmap Workshop
- Ontario Division VPS Self Assessment
- Port Colborne VPS Formal Assessment Report – 2021 Assessment of Management System and Results
- Cobalt Life Cycle Analysis Data 2019 Port Colborne Model – Cobalt Institute
- Cobalt Institute Data Quality Check for Vale Port Colborne
- Cobalt Institute – Comments on Port Colborne data
- Vale Sustainability Report
- Vale ESG Databook
- Port Colborne Operations Update 2020-2021
 - Battery Energy Storage System (BESS) Project

1.4 Indigenous and Community Relationships

- Vale Specialist Corporate and Indigenous Affairs
- Vale Sustainability and Government Relations Specialist
- COI Representative Director of Corporate Services, City of Port Colborne

Documents Reviewed:

- PNR 79 Vale's Social Performance
- PNR 65 Listening and Response Mechanism
- PNR 70 Health, Safety, Environment, Community and Operational Event Management
- Vale SDI (Stakeholders Demands and Issues) System
- Ontario Stakeholders – July 2022
- Sudbury Stakeholder Map
- SDI Monitoring presentation – Aug 2022
- Performance Meeting Base Metals Sustainability July 2022 (presented to Exec Committee)



- Stakeholder Community Relations 2022 Focus Areas
- Indigenous Foundations training module
- Sudbury Operations 2020-2021 Community Engagement Report
- Feedback postcard
- Cultural Competency Training Sept 2021 (in person to 50 managers)
- Overview of Indigenous Affairs in Ontario Operations for one-on-one training for new COO
- Sustainability Policy Poster
- B Wise Mitigation Controls for Sustainability Risks
- Job Description for Specialist Corporate and Indigenous Affairs
- Material Unwanted Events for Environment
- Community Concerns Line Response Protocol

1.5 Prevention of Child and Forced Labour

Key Personnel Interviewed:

- Vale HR Manager NA
- Vale PMO Analyst for HR Team
- Vale Analyst Talent Acquisition
- Vale Procurement Manager
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- Human Rights Policy
- Human Rights Guide
- Supplier Code of Ethics and Conduct
- General Service Agreement (Section 15)
- Terms and Conditions
- Vendor Registration requiring Vendors to accept Supplier Code of Ethics

1.6 Safety and Health

Key Personnel Interviewed:

- Vale Port Colborne Health, Safety and Risk Business Partner
- Vale Port Colborne Safety Supervisor
- Vale Port Colborne Superintendent Process Technology
- Vale Port Colborne Occupational Health Analyst
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- POL-0019-G Sustainability Policy (with healthy, safe work environment and to zero harm)
- Various copies of the Sustainability Policy posted throughout site
- Vale Production System (VPS)
- Signage throughout the facility regarding VPS and other safety message
- Job Description Manager Safety and Health, Ontario Operations (Surface & UG)
- Job Description for Health, Safety and Risk Business Partner
- Safety Supervisor Job Description



- New Employee Orientation First Few Days at Vale (including agenda showing safety topics)
- New Employee Synopsis 2022
- PORTS Presentation – Sustainability Policy
- Email to Supervisors – Aug 25, 2022 re: Sustainability Policy
- Vale Education System (VES)
- Base Metals Organizational Chart for S&H in Teams
- VPS Formal Assessment Report for Port Colborne
- HIRA Loss of Control of Chlorine, Bowtie and One-pages
- HIRA Loss of Liquid SO₂ Containment
- Bwise extract PCR Risks (including risk owner and control owner)
- Critical Control verification Risk: Exposure to Hazardous Substances SO₂ – Control: Pressure Safety Valve
- Critical Control verification Risk: Exposure to Hazardous Substances SO₂ – Control: SO₂ Sensors and Interlocks
- Screenshot showing Risk Exposure to Hazardous Substances Cl₂ and associated controls
- Verification Submission Totals Report
- CRM AIP Dashboard
- Verification Participation List Report
- Manager Verification Statistics
- Port Colborne Risk Register
- Spotlight on Safety – Job Hazard Analysis (Sep 5/Sep 12)
- 70-PMR-COPS-91503 SOP for Changing 1-ton chlorine cylinders
- OO-SHEMS-E01-P Roles, Responsibilities, Accountabilities & Authorities
- JHSC / PHSE Inspection and Audit Schedule (Cobalt JHSC)
- July 2022 Cobalt Workplace Inspection
- JHSC Action Registry – Cobalt Refinery
- 2023 Base Metals Corporate Budget for S&H Department
- Consolidated 2023 Budget Opex and ARO Projects Request list
- 2022 North Atlantic Operations Goals
- OO-OHP-P01 Occupational Hygiene Program
- OH-OEMP-P-01 Quantitative Occupational Exposure Monitoring Program
- OO-OH-HCP-P-01 Hearing Conservation Program
- OH-DSP-P-01 Designated Substance Program
- Port Colborne OEMP Annual Plan Status 2022 YTD Dashboard
- Cobalt-ECR Precip Circuit Inhalable results – Aug 15, 2022
- Training Matrix – Lab
- Ontario Division Training Syllabus PCR PRM Plant Operator Field Training
- On-the-job training evaluation – PRM Operator DB
- Processing Operator (Rounds Processing) Training Synopsis & Checklist
- 250 kg Drum Line Training Synopsis & Checklist for KH June 2, 2022
- 10 kg Pack Line Training Synopsis & Checklist for KH March 14, 2022
- Training records for JM, JP and LL (Surface Trainers)
- Field Verification – 2021-11-26 MH4 Corrosive Chemicals, 2021-11-11 MH8 Toxic Gas
- Job Observation – 2021-11-11 PMR Pre-use on Crane, 2021-11-10 Lock Out tags, 2021-02-11 PCR Lab, 2021-02-24 ETP Checklist, 2021-02-11 Dilutions using Hamilton Diluter, 2022-02-25 Prime Hydrogen Peroxide Pump



- AIP North Atlantic Update May 2022
- Mines for Minds Training email
- Leadership in the Field (LIF) Dashboard
- FMDS meeting slides – September 14, 2022
- NA Weekly Performance Meeting May 30, 2022 with review of KPIs
- Processing Plants Weekly Deck
- Agenda for H&S Weekly meeting (including KPI reviews)
- OO-SHEMS-E07-P Communication of S&H Info
- 2022 North Atlantic Operations Goals
- Stratws Safety status
- Vale Sustainability Report
- Vale ESG Data Book
- Port Colborne Operations Update 2020-2021

1.7 Water Stewardship

Key Personnel Interviewed:

- Vale Port Colborne Superintendent of Environment
- Vale Sudbury/Port Colborne Advisor Environment
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- POL-0019-G Sustainability Policy (with healthy, safe work environment and to zero harm)
- POL-0032-G Water and Water Resources Policy
- PNR-0035 Management of Water Resources
- Environmental Advisor job posting
- A3 (water stewardship goals) for L. Kelly, Head of Environmental Affairs
- A3 (water stewardship goals) for P. James, Head Health, Safety, Environment and Risk
- PORTS Feb 2022 Employee communication
- Welcome to Vale's Annual Open House slides
- OMS Manual for Port Colborne Water Management Facility
- Fresh Water Usage Reduction Study July 2020 by JL Richards
- Port Colborne Environmental Aspects and Impacts Map and Tear Drop explanation
- HIRA – Uncontrolled release of toxic solids/sediment from the external pond (including bowtie)
- HIRA – Effluent Treatment Plant – Acutely Toxic Effluent at Internal Discharge Pond
- 2021 Annual Monitoring Report for Port Colborne Landfill ECA A120310 by Pinchin
- Q2 2022 MISA Discharge Report
- Operator Checklist – Wetlands Flow Verification
- Operator Checklist – ETP
- Cobalt Utilities Operator Training Syllabus (including Effluent Treatment Plant)
- Water Balance Port Colborne Refinery
- Emergency Repair Plan for PCR External Polishing Pond
- Technical Memo – Water Treatment Investigation Dec 2021 by Geosyntec
- Vale PCR Shoreline Stabilization drawings
- FEL Study for Shore Protection Oct 2020
- PNR-0035 Audit 2021 TEC3



- Closure Plan – May 2019
- Environmental Impact and Aspect
- Lease Agreement for Nickel Beach June 2019-2039
- PSG-005648 Canada EMS – Environmental Objectives
- 2022 Environmental Objectives/KPIs
- 2021 and 2022 Water Intensity Tracker
- Monthly HSER Performance meeting
- 2021 Sustainability Report
- 2021 ESG Data Book