



March 31, 2022

Action Plan Status Update: Copper Cliff Smelter Site-Specific Standard Approvals for Nickel, # 502-11-rv0

Context

On December 28, 2011, the Ministry of Environment, Conservation and Parks (MECP) issued two Site-Specific Standard (SSS) approvals for nickel for Vale's Copper Cliff Smelter operations:

- 501-11-rv0 was a 24-hr nickel SSS which expired on June 30, 2016 when the nickel standard changed from a 24-hr to an annual basis, and
- 502-11-rv0 was an annual nickel SSS which expired December 28, 2021.

This report provides the biannual update on the Action Plan items listed in Schedule 1 of 501-11-rv0 and 502-11-rv0 (same Action Plan for both SSSs). This represents the last such update as both approvals are now expired.

On December 23, 2021, the MECP issued a new annual nickel SSS approval, 501-21-rv0, for Vale's Copper Cliff Smelter operations, and it contains a new Action Plan. Moving forward (beginning in March 2023), the updates will transition to annual updates on the progress on the items in the new Action Plan.

Action Items

Table A: Fugitive Property Sources

1. A Best Management Practices Plan for the control of fugitive dust emissions was prepared for the Smelter a number of years ago. Vale refers to this as a Dust Emissions Management Plan (DEMP). It is reviewed regularly and opportunities for continuous improvement projects, such as stockpile relocation, outside work and traffic pattern adjustment, are identified and acted on annually. A report will be prepared annually, submitted to the Ministry and reviewed with the community Environmental Monitoring Team. *This item is complete and ongoing as reported November 20, 2012.*
2. This item is addressed as part of action item 1. *This item is complete.*
3. Vale continues to progressively reclaim the non-operating footprint of the Smelter Complex. An annual evaluation is completed to determine if additional areas are available to be reclaimed and plans are developed accordingly. *This item is complete and ongoing as reported March 31, 2014.*
4. To fulfill this action item, on June 28, 2012 Vale submitted its Atmospheric Emissions Reduction (Clean AER) project Scope of Facilities Report; this report detailed all of the new facilities and facility modifications to be constructed to reduce the fugitive emissions of nickel from both process and property sources at the Copper Cliff Smelter. *This item is complete.* The execution of the Clean AER project is ongoing; progress is reported below.

Table B: Process Sources

5. The new high efficiency baghouses in the Matte Processing Fluid Bed Roaster department were installed and commissioned in September, 2010. *This item is complete as reported November 20, 2012.*
6. The new high efficiency baghouse on M floor in the Flash Furnace building was installed and commissioned in December, 2010. *This item is complete as reported November 20, 2012.*
7. The covers installed on the Matte Processing nickel slurry storage tanks have significantly reduced work place nickel concentrations in the area, without buildup in the tank or roof. Consequently, the new wet scrubber system that was installed in 2010 to vent the tanks has not been required and is not operating (and thus has zero emissions). It is being maintained and is available for use, should it be required in the future due to buildup formation. *This item is complete, as reported November 20, 2012.*
8. The matte crushing dust capture system upgrade included upgrade and enlarging of one baghouse and the replacement of a second unit with a new high efficiency baghouse. Construction and commissioning were completed in 2012. *This item is complete, as reported March 18, 2013.*
9. The installation of the new high efficiency converter aisle material handling baghouse was completed in October, 2012 and subsequently commissioned. *This item is complete as reported September 24, 2013.*
10. To fulfill this action item on June 28, 2012 Vale submitted its Atmospheric Emissions Reduction (Clean AER) project Scope of Facilities Report; this report details all of the new facilities and facility modifications to be constructed to reduce the fugitive emissions of nickel from both process and property sources at the Copper Cliff Smelter. *This item is complete.* The execution of the Clean AER project is ongoing; progress is reported below.

Table C: Additional Work

11. Source testing is executed to measure the performance of both existing and newly installed pollution control equipment, such as the baghouses in action items 5 to 9. *This item is complete and ongoing, as reported on November 20, 2012.*
12. On April 1st, 2019, Vale has taken over the operation, maintenance and reporting of results from its particulate monitoring network of 8 stations in accordance with the requirements of the Operations Manual for Air Quality Monitoring in Ontario. As required by this Approval, the additional (8th) monitoring station was installed, in consultation with the Ministry, on Union Street adjacent to the Smelter. Construction and commissioning were completed in November, 2012. Quarterly reports are sent to the Ministry. Graphical summaries of the monitoring results and the quarterly reports are posted on Vale's internet website, <http://www.vale.com/canada/EN/aboutvale/communities/sudbury/sudbury-environment/environmental-reporting-sudbury/air-quality-monitoring-results/Pages/default.aspx> *This item is complete and ongoing, as reported on March 18, 2013.* A 9th station was installed late in 2017 on Fielding Road, and is now part of the Vale network.
13. As required by the Regulation for Spill Prevention and Contingency Planning, O.Reg. 224/07, a Spill Prevention and Contingency Plan for the Smelter Complex was prepared in 2008. This plan is reviewed and updated annually as required by the Regulation. *This item is complete and ongoing, as reported on November 20, 2012.*

14. The environmental training needs analysis was updated. Environmental training requirements were identified for employees and contractors. The training topics included regulatory requirements, policy and environment management systems and technical and functional requirements. In 2012, environmental training packages and reference information were focussed on contractors, an identified gap. The development of new program content and delivery was prioritized. *This item is complete and training program updates ongoing as required, as reported on March 18, 2013.*

15. An Environmental Monitoring team with representatives from the Community, Ministry of the Environment and Climate Change and Vale has been established. The team meets semi-annually to discuss air quality issues and review progress of Action Plan items. An annual community engagement report is prepared and posted on the internet website, <http://www.vale.com/canada/EN/aboutvale/communities/sudbury/sudbury-environment/environmental-reporting-sudbury/air-quality-monitoring-results/Pages/default.aspx> *This item is complete and ongoing, as reported on March 18, 2013.*

Facility and Project Update

- Progress was made on the Smelter Material Handling project which will relocate the majority of metal-bearing material from the Smelter to Vale's Copper Cliff North Mine and implement clean-side/dirty-side fugitive management for the converter scrap handling activities which will remain at the Smelter. The project was postponed as a result of financial impacts related to the Vale Sudbury work stoppage that occurred between June and August of 2021. Resumption of the project is scheduled for 2023.