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Ontario

Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 6407-AA3QPJ
Issue Date: July 4, 2016

Vale Canada Limited
337 Power St
Copper Cliff, Ontario
P0M 1N0

Site Location: Copper Cliff Nickel Refinery
175 Industrial Rd Copper Cliff
Greater Sudbury City, District of Sudbury
P0M 1N0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

Description Section

A nickel-copper refining facility, consisting of the following processes and support units:
- Nickel Refinery Converter (NRC) Plant;

- Inco Pressure Carbonyl (IPC) Plant;
- Electrowinning Building;

including the *Equipment* and any other ancillary and support processes and activities, **operating at a *Facility Production Limit* of up to 74,850,000 kilograms of nickel per year and 11,800,000 kilograms of copper per year** , discharging to the air as described in the *Original ESDM Report.*

For the purpose of this environmental compliance approval, the following definitions apply:

1. " *Acceptable Point of Impingement Concentration"* means a concentration accepted by the *Ministry* as not likely to cause an adverse effect for a *Compound of Concern* that,

(a) has no *Ministry Point of Impingement Limit* and no *Jurisdictional Screening Level,* or

(b) has a concentration at a *Point of Impingement* that exceeds the *Jurisdictional Screening Level.*

With respect to the *Original ESDM Report,* the *Acceptable Point of Impingement Concentration* for a *Compound of Concern* mentioned above is the concentration set out in the *Original ESDM Report.*

2. "*Air Quality Monitoring Manual"* means the *Ministry* publication entitled "Operations Manual for Air Quality Monitoring in Ontario", dated March 2008, as amended.

3. "*Appendices"* means the following appendices attached to this *Approval* and forming part of this *Approval* namely:

Appendix 1 – Map of the Greater Sudbury Monitors.

4. "*Approval"* means this entire Environmental Compliance Approval and any *Schedules* to it.

5. "*Area Emissions"* means for the purposes of this *Approval* and related reports only, sulphur dioxide emissions from any source at the *Facility,* other than the 194 metre stack (Stack NR-N-51) and includes emissions from roof vents, open or broken windows and doors and any other points of egress.

6. "*Basic Comprehensive User Guide"* means the *Ministry* document titled "Basic Comprehensive Certificates of Approval (Air) User Guide" dated March 2011, as amended.

7. "*Best Management Practices Plans*" means the measures to minimize dust emissions from the *Facility* and/or *Equipment* and includes the document titled "Best Management Practices Plan for the control of fugitive dust emissions - Copper Cliff Nickel Refinery, Revision 8, March 30, 2015, as amended, prepared by Vale Canada Limited.

8. "*CEM System*" means the continuous emission monitoring system that includes the complete equipment for sampling, conditioning, and analyzing emissions or process parameters, and for recording data.

9. "*Company"* means Vale Canada Limited that is responsible for the construction or operation of the *Facility* and includes any successors and assigns in accordance with section 19 of the *EPA.*

10. "*Compound of Concern"* means a contaminant described in paragraph 4 subsection 26 (1) of *O. Reg. 419/05,* namely, a contaminant that is discharged from the *Facility* in an amount that is not negligible.

11. "*Comprehensive Supplementary Emission Control System"* means the Emissions Reduction Program (ERP) automated system in place at the *Facility* which is used by the Smelter Control Room operators to obtain meteorological information, sulphur dioxide emission rates and monitored ground level concentrations of sulphur dioxide.

12. "*Control Period"*means any period of time when sulphur dioxide emissions need to be controlled or restricted in order for the *Company* to avoid exceeding the Measured Levels set out in Schedule F of this *Approval.*

13. "*Description Section"* means the section on page one of this *Approval* describing the *Company's* operations and the *Equipment* located at the *Facility* and specifying the *Facility Production Limit* for the *Facility.*

14. "*Director"* means a person appointed for the purpose of section 20.3 of the *EPA* by the *Minister* pursuant to section 5 of the *EPA.*

15. "*District Manager"* means the District Manager of the appropriate local district office of the *Ministry,* where the *Facility* is geographically located.

16. "*Emission Summary Table"* means a table described in paragraph 14 of subsection 26 (1) of *O. Reg. 419/05;* namely a table in the *ESDM Report* that compares the *Point of Impingement* concentration for each *Compound of Concern* to the corresponding *Ministry Point of Impingement Limit, Acceptable Point of Impingement Concentration,* or *Jurisdictional Screening Level.*

17. "*Environmental Assessment Act"* means the Environmental Assessment Act, R.S.O. 1990, c.E.18, as amended.

18. "*EPA"* means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended.

19. "*Equipment"* means equipment or processes described in the *ESDM Report,* this *Approval* and in the *Schedules* referred to herein and any other equipment or processes.

20. "*Equipment with Specific Operational Limits"* means any *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators including the IPC Thermal Oxidizer or any other *Equipment* that is specifically referenced in any published *Ministry* document, other than *Guideline A-9,* that outlines specific operational guidance that must be considered by the *Director* in issuing an *Approval.*

21. "*ESDM Report"* means the most current Emission Summary and Dispersion Modelling Report that describes the *Facility.* The *ESDM Report* is based on the *Original ESDM Report* and is updated after the issuance of this *Approval* in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document.*

22. *"Facility"* means the entire operation belonging to the *Company's* Copper Cliff Nickel Refinery (CCNR) including the Nickel Refinery Converter (NRC) Plant; Inco Pressure Carbonyl (IPC) Plant; and the Electrowinning Building, located on the *Property* where the *Equipment* is located.

23. "*Facility Production Limit"* means the production limit placed by the *Director* on the main product(s) or raw materials used by the *Facility.*

24. "*Guideline A-9*" means Ministry Guideline A-9, titled "NOx Emissions from Boilers and Heaters", dated March 2001, as amended.

25. "*Jurisdictional Screening Level"* means a screening level for a *Compound of Concern* that is listed in the *Ministry* publication titled "Jurisdictional Screening Level (JSL) List, A Screening Tool for Ontario Regulation 419: Air Pollution - Local Air Quality", dated February 2008, as amended.

26. "*Log"* means a document that contains a record of each change that is required to be made to the *ESDM Report* and *Acoustic Assessment Report,* including the date on which the change occurred. For example, a record would have to be made of a more accurate emission rate for a source of contaminant, more accurate meteorological data, a more accurate value of a parameter that is related to a source of contaminant, a change to a *Point of Impingement* and all changes to information associated with a *Modification* to the *Facility* that satisfies Condition 2**.**

27. "*Manager"* means the Manager, Technology Standards Section, Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Technology Standards Section, Standards Development Branch, as those duties relate to the conditions of this *Approval.*

28. "*Minister"* means the Minister of the Environment and Climate Change or such other member of the Executive Council as may be assigned the administration of the *EPA* under the Executive Council Act.

29. "*Ministry"* means the ministry of the *Minister.*

30. "*Ministry Point of Impingement Limit"* means the applicable Standard set out in Schedule 2 or 3 of *O. Reg. 419/05* or a limit set out in the *Ministry* publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419/05: Air Pollution - Local Air Quality (including Schedule 6 of *O. Reg. 419/05* on Upper Risk Thresholds", dated April 2012, as amended.

31. "*Modification"* means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the *Facility* that may discharge or alter the rate or manner of discharge of a *Compound of Concern* to the air or discharge or alter noise or vibration emissions from the *Facility.*

32. "*Noise Screening Documents"* means the completed *Primary Noise Screening Form* with supporting information and documentation, or the *Secondary Noise Screening Report.*

33. "*O. Reg. 419/05"* means Ontario Regulation 419/05, Air Pollution – Local Air Quality, as amended.

34. "*Original ESDM Report"* means the Emission Summary and Dispersion Modelling Report which

was prepared in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* by Vale Canada Limited and dated October 23, 2015 submitted in support of the application, and includes any changes to the report made up to the date of issuance of this *Approval.*

35. "*Point of Impingement"* has the same meaning as in section 2 of *O. Reg. 419/05.*

36. "*Pre-Test Plan"* means a plan for the *Source Testing* including the information required in Section 5 of the *Source Testing Code.*

37. "*Primary Noise Screening Form"* means the *Ministry* Noise Screening Process Form as found in "Noise Screening Process For S.9 Applications – Supplement to Application for Approval" February, 2005, as amended.

38. "*Procedure Document"* means *Ministry* guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2009, as amended.

39. "*Processes with Significant Environmental Aspects"* means the *Equipment* which, during regular operation, would discharge one or more contaminants into the air in an amount which is not considered as negligible in accordance with section 26 (1) 4 of *O. Reg. 419/05* and the *Procedure Document.*

40. "*Property*" means the single property jointly occupied by Vale Canada Limited’s Copper Cliff Nickel Refinery (CCNR) and South Mine, as described in the *Company's* application, this *Approval* and in the supporting documentation submitted with the application, to the extent approved by this *Approval.*

41. "*Publication NPC-207"* means the *Ministry* draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model Municipal Noise Control By-Law, Final Report, published by the *Ministry,* August 1978, as amended.

42. "*Publication NPC-300"* means the *Ministry* Publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300", August 2013, as amended.

43. "*Schedules"* means the following schedules attached to this *Approval* and forming part of this *Approval* namely:

Schedule A - Supporting Documentation
Schedule B - Procedure for Source Testing
Schedule C - Source Testing - Targeted Sources and Test Contaminants
Schedule D - Continuous Monitoring System Requirements.
Schedule E - *Comprehensive Supplementary Emission Control System* - Operation and Reporting
Schedule F - Sulphur Dioxide Measured Levels - Notification and Reporting

44. "*SDB Director"* means the Director of the *Ministry*'s Standards Development Branch.

45. "*Secondary Noise Screening Process"* means the *Ministry* draft publication "Secondary Noise Screening Process for S.9 Applications – Supplement to Application for Approval", October 13, 2010, as amended.

46. "*Secondary Noise Screening Report"* means the report, prepared in accordance with the *Secondary Noise Screening Process* submitted in support of the application, that documents all sources of noise emissions present at the *Facility,* as updated in accordance with Condition 5 of this *Approval.*

47. "*Source Testing"* means sampling and testing to measure emissions resulting from operating the *Targeted Sources* under conditions which yield the worst case emissions within the approved operating range of the *Targeted Sources* which satisfies paragraph 1 of subsection 11(1) of O. Reg. 419/05.

48. "*Source Testing Code"* means the Ontario Source Testing Code, dated June 2010, prepared by the *Ministry,* as amended.

49. "*Sudbury Monitoring System"* means a network of monitors and related equipment that measure ground level concentrations of sulphur dioxide within the City of Greater Sudbury and provides data to the *Company* and includes:

a) any monitor identified in the map in Appendix 1 of this *Approval* which include the following monitors:

i) Coniston, Garson, Hanmer, Skead, Wahnapitae, Sunderland, Edison and Parkinson (the monitors operated and maintained by the Xstrata Canada Corporation; and
ii) Union, Kinsmen , Copper Cliff, Kelly Lake, Dozzi Park, Spruce St, Algonquin Road, Science North, Rayside, New Sudbury and the mobile sulphur dioxide monitor (the monitors operated and maintained by the *Company*); and

b) any other such monitor identified in writing by the *District Manager* or the *SDB Director.*

50. " *Sulphur Mass Balance Procedure Manual"* means a manual describing the operations, methods, procedures and equipment used to demonstrate and provide a reliable means of verifying sulphur dioxide emissions data with an acceptable level of accuracy , as amended.

51. " *Targeted Sources"* means the sources listed in Schedule C.

52. " *Test Contaminants"* means the contaminants listed in Schedule C.

53. " *Toxicologist"* means a qualified professional currently active in the field of risk assessment and toxicology that has a combination of formal university education, training and experience necessary to assess contaminants.

54. " *Unfavourable Air Dispersion Conditions"* means any meteorological condition in which the atmosphere is unable to adequately mix or disperse sulphur dioxide emissions from the *Facility* such that elevated short-term ground level concentrations may occur in the City of Greater Sudbury.

55. " *Written Summary Form"* means the electronic questionnaire form, available on the *Ministry* website, and supporting documentation, that documents the activities undertaken at the *Facility* in the previous calendar year.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL

1.1 Except as otherwise provided by this *Approval,* the *Facility* shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this *Approval* and in accordance with the following *Schedules* attached hereto:

Schedule A - Supporting Documentation
Schedule B - Procedure for Source Testing
Schedule C - Source Testing - Targeted Sources and Test Contaminants
Schedule D - Continuous Monitoring System Requirements.

Schedule E - *Comprehensive Supplementary Emission Control System* - Operation and Reporting
Schedule F - Sulphur Dioxide Measured Levels - Notification and Reporting

2. LIMITED OPERATIONAL FLEXIBILITY

2.1 Pursuant to section 20.6 (1) of the *EPA* and subject to Conditions 2.2 and 2.3 of this *Approval,* future construction, alterations, extensions or replacements are approved in this *Approval* if the future construction, alterations, extensions or replacements are *Modifications* to the *Facility* that:

(a) are within the scope of the operations of the *Facility* as described in the *Description Section* of this *Approval;*

(b) do not result in an increase of the *Facility Production Limit* above the level specified in the *Description Section* of this *Approval;* and

(c) result in compliance with the performance limits as specified in Condition 4.

2.2 Condition 2.1 does not apply to,

(a) the addition of any new *Equipment with Specific Operational Limits* or to the *Modification* of any existing *Equipment with Specific Operational Limits* at the *Facility;* or

(b) *Modifications* to the *Facility* that would be subject to the *Environmental Assessment Act.*

2.3 Despite Conditions 2.1 and 2.2, the *Company* shall not make *Modifications* to the *Facility* that would add or modify any *Equipment* subject to *Guideline A-9* unless performed in accordance with the report titled "Procedure for incorporating operational flexibility for large boilers and heaters subject to Ministry of the Environment Guideline A-9" prepared by Golder Associates Ltd. as documented in *Schedule A* and the conditions in this *Approval.*

2.4 Condition 2.1 of this *Approval* shall expire ten (10) years from the date of this *Approval,* unless this *Approval* is revoked prior to the expiry date. The *Company* may apply for renewal of Condition 2.1 of this *Approval* by including an *ESDM Report* that describes the *Facility* as of the date of the renewal application.

3. REQUIREMENT TO REQUEST AN *ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION*

3.1 Prior to making a *Modification* to the *Facility* that satisfies Condition 2.1 (a) and (b), the *Company* shall prepare a proposed update to the *ESDM Report* to reflect the proposed *Modification.*

3.2 The *Company* shall request approval of an *Acceptable Point of Impingement Concentration* for a *Compound of Concern* if the *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and a proposed update to an *ESDM Report* indicates that one of the following changes with respect to the concentration of the *Compound of Concern* may occur:

(a) The *Compound of Concern* was not a *Compound of Concern* in the previous version of the *ESDM Report* and

(i) the concentration of the *Compound of Concern* is higher than the *Jurisdictional Screening Level* for the contaminant; or

(ii) there is no *Jurisdictional Screening Level* for the contaminant .

(b) The concentration of the *Compound of Concern* in the updated *ESDM Report* is higher than:

(i) the most recent *Acceptable Point of Impingement Concentration,* and

(ii) the *Jurisdictional Screening Level* if a *Jurisdictional Screening Level* exists.

3.3 The request required by Condition 3.2 shall propose a concentration for the *Compound of Concern* and shall contain an assessment, performed by a *Toxicologist,* of the likelihood of the proposed concentration causing an adverse effect at *Points of Impingement.*

3.4 If the request required by Condition 3.2 is a result of a proposed *Modification* described in Condition 3.1, the *Company* shall submit the request, in writing, to the *Director* at least 30 days prior to commencing to make the *Modification.* The *Director* shall provide written confirmation of receipt of this request to the *Company.*

3.5 If a request is required to be made under Condition 3.2 in respect of a proposed *Modification* described in Condition 3.1, the *Company* shall not make the *Modification* mentioned in Condition 3.1 unless the request is approved in writing by the *Director.*

3.6 If the *Director* notifies the *Company* in writing that the *Director* does not approve the request, the *Company* shall,

(a) revise and resubmit the request; or

(b) notify the *Director* that it will not be making the *Modification.*

3.7 The re-submission mentioned in Condition 3.6 shall be deemed a new submission under Condition 3.2.

3.8 If the *Director* approves the request, the *Company* shall update the *ESDM Report* to reflect the *Modification.*

3.9 Condition 3 does not apply if Condition 2.1 has expired.

4. PERFORMANCE LIMITS

4.1. Subject to Condition 4.2, the *Company* shall not discharge or cause or permit the discharge of a *Compound of Concern* into the air if,

(a) the *Compound of Concern* has a *Ministry Point of Impingement Limit* and the discharge results in the concentration at a *Point of Impingement* exceeding the *Ministry Point of Impingement Limit;* or

(b) the *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the discharge results in the concentration at a *Point of Impingement* exceeding the higher of,

(i) if an *Acceptable Point of Impingement Concentration* exists the most recent *Acceptable Point of Impingement Concentration,* and

(ii) the *Jurisdictional Screening Level* if a *Jurisdictional Screening Level* exists.

4.2 Condition 4.1 does not apply if the *Ministry Point of Impingement Limit* has a 10-minute averaging period and no ambient monitor indicates an exceedance at a *Point of Impingement* where human activities regularly occur at a time when those activities regularly occur.

4.3 The *Company* shall ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-300.*

4.4 The *Company* shall ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207.*

4.5 The *Company* shall operate any *Equipment with Specific Operational Limits* approved by this *Approval* in accordance with the *Original ESDM Report.*

5. **DOCUMENTATION REQUIREMENTS**

5.1. The *Company* shall maintain an up-to-date *Log.*

5.2. No later than March 31 in each year, the *Company* shall update the *ESDM Report* in accordance with section 26 of *O. Reg. 419/05* and shall update the *Noise Screening Documents* so that the information in the reports is accurate as of December 31 in the previous year.

5.3. The *Company* shall make the *Emission Summary Table* (see section 27 of *O. Reg. 419/05)* and the *Noise Screening Documents* available for examination by any person, without charge, by posting it on the Internet or by making it available during regular business hours at the *Facility.*

5.4 The *Company* shall, within three (3) months after the expiry of Condition 2.1 of this *Approval,* update the *ESDM Report* and the *Noise Screening Documents* such that the information in the reports is accurate as of the date that Condition 2.1 of this *Approval* expired.

5.5. Conditions 5.1 and 5.2 do not apply if Condition 2.1 has expired.

6. REPORTING REQUIREMENTS

6.1 Subject to Condition 6.2, the *Company* shall provide the *Director* no later than June 30 of each year, a *Written Summary Form* to be submitted through the *Ministry's* website that shall include the following:

(a) a declaration of whether the *Facility* was in compliance with section 9 of the *EPA, O. Reg. 419/05* and the conditions of this *Approval;*

(b) a summary of each *Modification* satisfying Condition 2.1 (a) and (b) that took place in the previous calendar year that resulted in a change in the previously calculated concentration at a *Point of Impingement* for any *Compound of Concern.*

6.2 Condition 6.1 does not apply if Condition 2.1 has expired.

6.3 The *Company* shall conduct an audit of sulphur dioxide emissions as follows:

(a) Sulphur dioxide emissions must be audited annually for each calendar year for accuracy by a third party. Each year, the *Company* shall retain an independent consultant, acceptable to the *District Manager,* to perform an audit of the sulphur dioxide emissions from the *Facility.* The costs of the audits shall be borne by the *Company.*

(b) Prior to each audit, the *Company* shall submit any required or proposed changes to the operations, methods, procedures and equipment referred to in the *Sulphur Mass Balance Procedure Manual* required to perform the sulphur mass balance calculations, to estimate sulphur dioxide emissions, in tonnes per year, along with an implementation schedule, for review and acceptance by the *District Manager.*

(c) The *Company* shall submit the auditor's annual report to the *District Manager,* by March 31 of the following year.

7. OPERATION AND MAINTENANCE

7.1 The *Company* shall prepare and implement, not later than three (3) months from the date of this *Approval,* operating procedures and maintenance programs for all *Processes with Significant Environmental Aspects,* which shall specify as a minimum:

(a) frequency of inspections and scheduled preventative maintenance;

(b) procedures to operate, maintain and calibrate the *CEM System;*

(c) procedures to prevent upset conditions;

(d) procedures to minimize all fugitive emissions;

(e) procedures to prevent and/or minimize odorous emissions;

(f) procedures to prevent and/or minimize noise emissions; and

(g) procedures for record keeping activities relating to the operation and maintenance programs.

7.2 The *Company* shall ensure that all *Processes with Significant Environmental Aspects* are operated and maintained in accordance with this *Approval,* the operating procedures and maintenance programs.

7.3 The *Company* shall notify the *District Manager* at least seven (7) days in advance of any planned shutdowns of the IPC Thermal Oxidizer and the *CEM System.* As part of this notification, the company must provide the following information:

(a) date of planned shutdown;

(b) reason for shutdown; and
(c) date equipment is expected to re-start.
During the shutdown period, the *Company* must maintain a specific log to record all maintenance activities carried out.

7.4 The *Company* shall, not later than six (6) months from the date of this *Approval,* prepare and implement a written program for the operation and maintenance of all dust control equipment at the *Facility,* including but not limited to the following:
(a) maintain and update to keep current, a list of all dust control equipment, including the following details: Source identification; Production building/area served; Process/location served; Stack gas flow rate; Stack diameter and Stack height above grade.

(b) acceptable range of the static pressure drop across each baghouse dust collectors;

(c) program to monitor and record the pressure differential across each baghouse dust collector including the frequency of measurement and procedures to investigate and correct the cause of any anomalous measurements of the static pressure drop;

(d) list of management and supervisory personnel responsible for the operation and maintenance of the dust control equipment;

(e) procedures for record keeping activities relating to the operation and maintenance programs.

7.5 The *Company* shall prepare and update as necessary, not later than three (3) months from the date of issue of this *Approval,* operating procedures which address start-up, shut down and any upset conditions of the Top Blown Rotary Converters, IPC Thermal Oxidizer, Residue Incinerator/Waste gas decomposer and IPC Rotary Reactors and IPC decomposers.

8. COMPLAINTS RECORDING AND REPORTING

8.1 If at any time, the *Company* receives an environmental complaint from the public regarding the operation of the *Equipment* approved by this *Approval,* the *Company* shall take the following steps:

(a) Record and number each complaint, either electronically or in a log book. The record shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and, if known, the address of the complainant.

(b) Initiate appropriate steps to determine all possible causes of the complaint, and take the necessary actions to appropriately deal with the cause of the subject matter of the complaint.

(c) Complete and retain on-site a report written within one (1) week of the complaint date. The report shall list the actions taken to appropriately deal with the cause of the complaint and set out steps to be taken to avoid the recurrence of similar incidents.

8.2 The *Company* shall provide the *District Manager* with a quarterly summary report of all environmental complaints received by the *Company* and related to air emissions from the *Facility.* The report shall include all particulate fallout, odour and noise complaints. The summary report shall also include, as a minimum:

(a) a description of the nature of the complaint;
(b) the time, date and location of the incident to which the complaint relates;

(c) the wind direction and other weather conditions at the time of the incident to which the complaint relates;

(d) the name(s) of *Company* personnel responsible for handling the complaint; and

(e) the actions taken to deal with the complaint.

9. RECORD KEEPING REQUIREMENTS

9.1 Any information requested by any employee in or agent of the *Ministry* concerning the *Facility* and its operation under this *Approval,* including, but not limited to, any records required to be kept by this *Approval,* shall be provided to the employee in or agent of the *Ministry,* upon request**,** in a timely manner.

9.2 Unless otherwise specified in this *Approval,* the *Company* shall retain, for a minimum of five (5) years from the date of their creation all reports, records and information described in this *Approval,* including,

(a) a copy of the *Original ESDM Report* and each updated version*;*

(b) supporting information used in the emission rate calculations performed in the *ESDM Reports;*

(c) the records in the *Log;*

(d) copies of each *Written Summary Form* provided to the *Ministry* under Condition 6.1 of this *Approval;*

(e) records of maintenance, repair and inspection of *Equipment* related to all *Processes with Significant Environmental Aspects;* and

(f) all records related to environmental complaints made by the public as required by Condition 8 of this *Approval.*

(g) records related to *Source Testing* events as required by the section titled "Source Testing" of this *Approval;*

(h) records related to the operation, maintenance and calibration of the *CEM System;* and

(i) records related to the prevention and control measures implemented as required by the section titled "Fugitive Emissions Control" of this *Approval.*

10. FUGITIVE EMISSIONS CONTROL

10.1 The *Company* shall:

(a) review and evaluate on an annual basis, the *Best Management Practices Plan* for the control of fugitive dust emissions;

(b) record the results of each annual review and update the *Best Management Practices Plan* within two (2) months of the completion of the annual review;

(c) maintain the updated *Best Management Practices Plan* at the *Facility* and provide a copy to the *District Manager* within one (1) month of the update;

(d) implement, at all times, the most recent version of the *Best Management Practices Plan.*

10.2 The *Company* shall record, either electronically or in a log book, each time a specific preventative and control measure described in the *Best Management Practices Plan* is implemented. The *Company* shall record, as a minimum:

(a) the date when each emission control measure is implemented, including a description of the control measure;

(b) the date when each new preventative measure or operating procedure to minimize emissions is implemented, including a description of the preventative measure or operating procedure; and

(c) the date, time of commencement, and time of completion of each periodic activity conducted to minimize emissions, including a description of the preventative measure/procedure and the name of the individual performing the periodic activity.

11. SOURCE TESTING

11.1 The *Company* shall perform *Source Testing* in accordance with the procedure in Schedule B to determine the rate of emission of the *Test Contaminants* from the *Targeted Sources,* at the frequency listed in Schedule C.

12. EMISSIONS MONITORING

12.1 The *Company* shall operate and maintain a *CEM System* and shall continuously monitor the concentration of Sulphur Dioxide (SO2) in the exhaust gas stream of the Nickel Refinery Main Stack (Stack ID: NR-N-51).

12.2 The *CEM System* required by Condition 12.1 shall be equipped with continuous recording devices outlined in Schedule D attached to this *Approval.*

12.3 The *Company* shall maintain a program to continuously calculate the Flue Gas Volume (flow rate) in the exhaust gas stream of the Nickel Refinery Main Stack (Stack ID: NR-N-51).

12.4 The *Company* shall conduct *Relative Accuracy* testing once every twelve (12) months to verify the operation of the *CEM System.* The report shall be submitted to the *Manager and District Manager* not later than one (1) month after completion of the test, one (1) copy shall be appended to the NRC stack (NR-N-51) *Source Testing* report, and one (1) copy shall be maintained by the *Company* for at least two (2) years, and be made available to the *Ministry* upon request.

12.5 The *Company* shall prepare and submit to the *District Manager,* a quarter annual report on the readings of the *CEM System,* within forty five (45) days after the end of each quarter starting from the date of this *Approval.*Each report shall include:

(a) a summary of the results of the *CEM System,* along with the minimum and maximum 1-hour average and 24-hour average readings of sulphur dioxide in that quarter, along with the date(s) and time(s) and these readings; and

(b) operating conditions at the time of the minimum and maximum 1-hour average and 24-hour average readings, including but not limited to raw material feed composition with respect to type of raw material and percent sulphur.

13. COMPREHENSIVE SUPPLEMENTARY EMISSION CONTROL SYSTEM

13.1 The *Company* shall have in place and operate a *Comprehensive Supplementary Emission Control System* as specified in Schedule E of this *Approval.*

13.2 The *Company* shall comply with the requirements specified in Schedule F of this *Approval,* in case the sulphur dioxide Measured Levels described in Schedule F of this *Approval* are exceeded.

14. AMBIENT AIR MONITORING

14.1 The *Company* shall prepare and implement an ambient air monitoring program in accordance with the *Air Quality Monitoring Manual* at locations agreed to by the *District Manager* and the *Company,* for the measurement of contaminants emitted from the *Property,* including suspended particulate matter, nickel and any other contaminant(s) requested by the *District Manager,* by methods and equipment accepted by the *District Manager.* The *Company* shall:

(a) submit a detailed plan of the ambient air monitoring program in accordance with the *Air Quality Monitoring Manual* to the *District Manager* not later than three (3) months from the date of this *Approval* or within a time period acceptable to the *District Manager,* and finalize the monitoring program in consultation with the *District Manager;*

(b) implement the ambient air monitoring program within a time period acceptable to the *District Manager,* after the program has been accepted by the *District Manager;* and

(c) submit the ambient air monitoring data and summary reports on the ambient air quality monitoring program as per the requirements of the *Air Quality Monitoring Manual* to the *District Manager,* or on an alternate frequency acceptable to the *District Manager.*

14.2 The ambient air monitoring program would be subject to periodic review and may be amended in consultation with the *District Manager.*

15. ROAD DUST SAMPLING AND ANALYSIS

15.1 The *Company* shall prepare and implement a sampling and analysis program for periodic monitoring of trace metal concentrations of the dust/surface material on the *Facility* roads during snow free season.

15.2 A road dust/surface material sampling and analysis plan shall be prepared in consultation with the *District Manager* and submitted to the *District Manager* not later than three (3) months from the date of this *Approval,* or within a time frame acceptable to the *District Manager.*

(a) definition of the areas to be sampled and analysed;

(b) number of paved/unpaved road samples to be collected;

(c) frequency of sampling with consideration given to seasonal and/or meteorological conditions;

(d) equipment and methodology for conducting the sampling program; and

(e) methodology for analysing the road dust/surface material samples. 15.3 Upon acceptance of the road dust/surface material sampling and analysis plan by the *District Manager,* the *Company* shall carry out sampling and analysis for metals including at a minimum arsenic, cadmium, chromium, cobalt, copper, lead, manganese, mercury and nickel in accordance with the approved plan within nine (9) months from the date of this *Approval* or within an alternative time frame approved by the *District Manager.*

15.4 If the results of the road dust/surface material analysis mentioned in condition 15.3 indicate that emission rates of metals from the *Facility* roads are higher than the maximum emission rates identified in the *Original ESDM Report,* the *Company* shall update the *ESDM Report* with the emission rates derived from this analysis. The *Emission Summary Table* of the updated *ESDM Report,*along with a summary of the sampling and analysis results shall be submitted to the *District Manager* within four (4) months of the date of sampling.

16. REVOCATION OF PREVIOUS APPROVALS

This *Approval* replaces and revokes all Certificates of Approval (Air) issued under section 9 *EPA* and Environmental Compliance Approvals issued under Part II.1 *EPA* to the *Facility* in regards to the activities mentioned in subsection 9(1) of the *EPA* and dated prior to the date of this *Approval.*

SCHEDULE A

Supporting Documentation

(a) Environmental Compliance Approval Application, dated November 17, 2015, signed by Monika Greenfield and submitted by the *Company;*

(b) Emission Summary and Dispersion Modelling Report, prepared by Vale Canada Limited and dated October 23, 2015;

(c) "Procedure for incorporating operational flexibility for large boilers and heaters subject to Ministry of the Environment Guideline A-9" prepared by Golder Associates Ltd.

(d) Additional air emissions related data submitted by Vale Canada Limited on May 13, 2016; June 1, 2016; June 16, 2016 and June 17, 2016, all signed by Monika Greenfield.

SCHEDULE B

Procedure for Source Testing

1. The *Company* shall submit, not later than three (3) months prior to the *Source Testing,* to the *Manager* a *Pre-Test Plan* for the *Source Testing* required under this *Approval.* The *Company* shall finalize the *Pre-Test Plan* in consultation with the *Manager.*

2. The *Company* shall not commence the *Source Testing* required under this *Approval* until the *Manager* has approved the *Pre-Test Plan.*

3. The *Company* shall complete the *Source Testing* not later than three (3) months after the *Manager*

has approved the *Pre-Test Plan* or within a period as directed or agreed to in writing by the *Manager* and the *District Manager.*

4. The *Company* shall notify the *Manager,* the *District Manager* and the *Director* in writing of the location, date and time of any impending *Source Testing* required by this *Approval,* at least fifteen (15) days prior to the *Source Testing.*

5. The *Company* shall submit a report (hardcopy and electronic format) on the *Source Testing* to the *Manager,* the *District Manager* and the *Director* not later than three (3) months after completing the *Source Testing.* The report shall be in the format described in the *Source Testing Code,* and shall also include, but not be limited to:

(1) an executive summary;

(2) an identification of the applicable North American Industry Classification System code (NAICS) for the *Facility;*

(3) records of operating conditions at the time of *Source Testing,* including but not limited to the following:

- production data;
- *Facility* /process information related to the operation of the *Targeted Sources;*
- description of the emission sources controlled by the *Targeted Sources* at the time of testing; and
- operational description of the general building ventilation at the time of testing;

(4) results of *Source Testing,* including the emission rate, emission concentration, and relevant emission factor of the *Test Contaminants* from the *Targeted Sources;*

(5) a tabular comparison of *Source Testing* results for the *Targeted Sources* and *Test Contaminants* to original emission estimates described in the *Company's* application and the *ESDM Report;*

(6) a summary of all records of the *CEM System* at the time of *Source Testing; and*

(7) a tabular comparison of the results of the *Source Testing* and the records obtained by the *CEM System* during the times of *Source Testing*

6. The *Director* may not accept the results of the *Source Testing* if:

(1) the *Source Testing Code* or the requirements of the *Manager* were not followed;

(2) the *Company* did not notify the *Manager*, the *District Manager* and *Director* of the *Source Testing;* or

(3) the *Company* failed to provide a complete report on the *Source Testing.*

7. If the *Director* does not accept the results of the *Source Testing,* the *Director* may require re-testing. If re-testing is required, the *Pre-Test Plan* strategies need to be revised and submitted to the *Manager* for approval. The actions taken to minimize the possibility of the *Source Testing* results not being accepted by the *Director* must be noted in the revision.

8. If the *Source Testing* results indicate the emission estimates are higher than the emission estimates in the *Company's* *ESDM Report,* the *Company* shall update their *ESDM Report* in accordance with Section 26 of *O. Reg. 419/05* with the results from the *Source Testing* report and

make these records available for review by staff of the *Ministry* upon request. The updated *Emission Summary Table* from the updated *ESDM Report* shall be submitted with the report on the *Source Testing.*

SCHEDULE C
Source Testing

Targeted Sources and Test Contaminants

Targeted Sources

Stack ID	Description	Frequency of Source Testing
NR-N-51	NRC Stack	Once per calendar year
NR-N-22	Granulator Wet ESP Vent 2	Once per calendar year
NR-N-35	NRC Building baghouse	One Time
NR-I-22	IPC Thermal Oxidizer Baghouse	One Time (non-idle conditions)

Test contaminants for nickel refinery main stack NR-N-51

Total Suspended Particulate Matter Carbon Monoxide (CO) Nitrogen Oxides (NOx) Carbon Dioxide (CO2)	Oxygen (O2) Sulphur Dioxide (SO2) Sulphuric Acid Mist

List of Metals	
Sb Antimony As Arsenic Be Beryllium Bi Bismuth Cd Cadmium Cr Chromium Co Cobalt Cu Copper Fe Iron Pb Lead Li Lithium Mg Magnesium Mn Manganese Hg Mercury	Ni Nickel Ag Silver Te Tellurium Sn Tin Ti Titanium V Vanadium Tl Thallium Zn Zinc

SCHEDULE C (Cont'd)
Source Testing

Test contaminants for Granulator Wet ESP Vent 2 (NR-N-22);

- Total Suspended Particulate Matter - Sulphur Dioxide (SO2)	
List of Metals	

Hg Mercury Sb Antimony As Arsenic Be Beryllium Bi Bismuth Cd Cadmium Cr Chromium Co Cobalt Cu Copper Fe Iron Pb Lead Li Lithium Mg Magnesium Mn Manganese	Ni Nickel Ag Silver Te Tellurium Sn Tin Ti Titanium V Vanadium Tl Thallium Zn Zinc

Test contaminants for NR-N-35

- Total Suspended Particulate Matter

Test contaminants for NR-I-22

- Total Suspended Particulate Matter - Nickel

SCHEDULE D
Continuous Monitoring System Requirements - Nickel Refinery Main Stack

PARAMETER: Sulphur Dioxide (SO 2)

INSTALLATION: The Continuous Sulphur Dioxide Monitor shall be installed in accordance with the requirements of Report EPS 1/PG/7, at an accessible location where the measurements are representative of the actual concentration of sulphur dioxide in the gases leaving the *Nickel Refinery Main Stack (NR-N-51),* and shall meet the following installation specifications:

	PARAMETERS	SPECIFICATION
1	Range:	• 2 times the average concentration from the source; and • If the maximum potential concentration anticipated from the source does not meet the 2 times criteria, a multirange analyzer needs to be considered, to properly cover the concentrations that vary widely up to the maximum potential concentration anticipated.
2	Calibration Gas Ports:	close to the sample point

PERFORMANCE: The Continuous Sulphur Dioxide Monitor shall meet the following minimum performance specifications for the following parameters.

	PARAMETERS	SPECIFICATION
3	Span Value (nearest ppm equivalent):	Within 40% and 75% of the chosen range of the analyzer.
4	Relative Accuracy:	£ 10 percent of the mean value of the reference method test data
5	Calibration Error:	£ 2 percent of the actual concentration
6	System Bias:	£ 4 percent of the mean value of the reference method test data
7	Procedure for Zero and Span Calibration Check:	all system components checked
8	Zero Calibration Drift (24-hour):	£ 2.5 percent of span value
9	Span Calibration Drift (24-hour):	£ 2.5 percent of span value
10	Response Time (90 percent response to a step change):	£ 200 seconds
11	Operational Test Period:	³ 168 hours without corrective maintenance

SCHEDULE E

Comprehensive Supplementary Emission Control System - Operation and Reporting

1. The *Company* shall have in place and operate the predictive and reactive *Comprehensive Supplementary Emission Control System,* which must as a minimum:

1.1 provide the central control room operators with information necessary to control sulphur dioxide emissions during periods when there are *Unfavourable Air Dispersion Conditions;*

1.2 include meteorological instrumentation which will continuously record and transmit information on:

(a) wind speed and direction;

(b) air temperature near ground level; and

(c) air temperature at an elevation of at least 100 metres above the base of the Copper Cliff Smelter highest stack.

1.3 include a method or system to determine local vertical profiles of:

(a) temperature;

(b) wind speed; and

(c) wind direction.

2. The *Company* shall operate and maintain the *Company* operated monitors under the *Sudbury Monitoring System* and any other air monitoring stations for monitoring particulates and the metals contained in the particulates such as Copper Cliff Creek, Delki Dozzi, Dynamic Earth, Norite Street, Power Street, Spruce Street, Union Street and Venice Street in accordance with *Ministry* publication entitled “Operations Manual for Air Quality Monitoring in Ontario” dated March 2008, as amended, so that the monitored data can be used to demonstrate compliance with *Ministry* requirements. All

aspects of the *Company* operated monitors under the *Sudbury Monitoring System* and any particulate air monitoring stations shall be acceptable to the *District Manager* and subject to audit at any time by *Ministry* designated personnel. Air quality monitoring data from these monitors shall be reported to the *District Manager* as recommended by the "Operations Manual for Air Quality Monitoring in Ontario" dated March 2008, as amended.

3. The *Company* shall have trained staff on site at all times who are responsible for the operation of the *Comprehensive Supplementary Emission Control System* and who shall monitor all available information, including *Real Time Data* from the *Sudbury Monitoring System,* 24 hours/day when the *Facility* is emitting sulphur dioxide.

4. The *Company* shall have an Emission Reduction Program operations manual for the *Comprehensive Supplementary Emission Control System* and it shall be kept readily available for inspection by *Ministry* staff. This manual shall be updated as necessary and annually and shall include as a minimum:

4.1 a description of the duties and responsibilities of the central control room operators for monitoring data regarding ground level concentrations of sulphur dioxide, including a detailed description of the procedures for the collection of the required system input data;

4.2 instructions and procedures for ensuring that best management practices are taken by the central control room operators to stay within the sulphur dioxide maximum emissions operating level within the *Control Period,* which are based on modelling calculations for different air dispersion categories;

4.3 instructions and procedures detailing the control actions that the central control room operators must take to reduce sulphur dioxide emissions from the *Facility* when increasing ground level concentrations are predicted from the forecasted meteorological data or observed from the *Real Time Data;*

4.4 an outline of the *Facility's* internal communication procedures for emission control coordination; and

4.5 an outline of the instrument maintenance and calibration procedures for all equipment operated by the *Company* and forming part of the *Comprehensive Supplementary Emission Control System,*including the procedures for reporting equipment malfunctions to the *District Manager.*

5. The *Company* shall notify the *Ministry* forthwith of:

5.1 The failure of any systems or equipment related to this *Approval,* and operated by the *Company,* that may affect the reliability of the operation of the *Comprehensive Supplementary Emission Control System.*

5.2 The *Company's* contingency plans to keep emissions within the limits of this *Approval* in the event that the system or equipment is out of service. A report detailing the schedule for repair of any failed system or equipment must be provided to the *Ministry* as soon as practical. The *Company* shall notify the *Ministry* when the system is back in operation.

SCHEDULE F

Sulphur Dioxide Measured Levels - Notification and Reporting

1.0 The Measured Level shall be calculated as follows:

1.1 To determine a measured concentration of sulphur dioxide over a one-hour averaging period, a person shall take the arithmetic average of any 12 consecutive five-minute averages, where the five-minute average is the average sulphur dioxide concentration measured by the *Sudbury Monitoring System* over a five-minute period.

1.2 Despite 1.1, if the *Ministry* provides written notice to the *Company* , a sulphur dioxide measuring device other than the *Sudbury Monitoring System* may be used for the purposes of 1.1.

1.3 Despite 1.1, a concentration of sulphur dioxide over a one-hour averaging period will be considered valid if at least 8 (not necessarily consecutive) of the 12 five-minute averages are available for the hour in question.

1.4 To determine a concentration of sulphur dioxide over a one-hour averaging period in the circumstances in 1.3, a person shall sum the available five-minute average sulphur dioxide concentrations and divide the sum by the number of available five-minute averages.

2.0 If, as a result of sulphur dioxide emissions from all sources at the *Facility* , the measured concentrations of sulphur dioxide exceed the Measured Levels set out in **Table 1** below or; as a result of sulphur dioxide *Area Emissions* at the *Facility* , the measured concentrations of sulphur dioxide exceed the Measured Levels set out in **Table 2** below, at any of the monitoring stations in the *Sudbury Monitoring System,* the *Company* shall, unless otherwise specified in writing by the *District Manager:*

2.1 As soon as practicable after becoming aware of the measured exceedence notify the *District Manager.*

2.2 Within seven days of becoming aware of the exceedance above the Measured Levels in **Table 1** or **Table 2** as applicable, submit a report in a format acceptable to the *District Manager* including but not limited to the following information:

(a) Data from the Emission Reduction Program (ERP) Prediction Log relevant to the exceedance;

(b) Data from the *Facility's* Emission Control Sheet relevant to the exceedance;

(c) The Mobile Sulphur Dioxide Analyzer Log and Data Acquisition Reports;

(d) The Daily ERP Summary;

(e) Meteorological data relevant to the exceedance, including relevant data from:

(i) the Meteorological (Observations) Data Log;

(ii) weather forecasts; and

(iii) any other relevant meteorological data.

(f) All public complaints received by the *Company* on the day of the exceedance.

(g) An incident report, signed by the *Facility* Manager or his designate, detailing:

(i) the sequence of events that led to the exceedance;

(ii) the reason for the exceedance;

(iii) the remedial action taken; and

(iv) a description of specific actions to reduce the likelihood of further exceedance of the Measured Levels of sulphur dioxide set out in Table 1 or Table 2 as required.

(v) the production level at the time of the exceedance.

2.3 Ensure that all records required in Condition 2.2 of Schedule F that are of a temporal nature are recorded in Eastern Standard Time.

2.4 Acknowledge, in writing, the accuracy of the information required to be submitted in Condition 2.2.

2.5 Retain for seven years, any information required in any approval document that pertains to the emission of sulphur dioxide and control of ground level concentrations of sulphur dioxide.

2.6 Implement the actions described in Condition 2.2(g)(iv) within sixty days of submitting the information.

3.0 *Control Periods*

Once a *Control Period* begins, the central control room operators shall control or restrict emissions of sulphur dioxide as may be necessary to avoid exceeding the Measured Levels of sulphur dioxide set out in **Table 1** or **Table 2** below and shall not allow an increase in emissions until:

(a) The measured sulphur dioxide readings from the *Sudbury Monitoring System* clearly indicate that values have been at or below **Table 1** or **Table 2** Measured Levels for at least 3 consecutive five-minute readings; and

(b) *Unfavourable Air Dispersion Conditions* no longer exist and are not predicted to occur over the next several hours.

Table 1: Measured Levels of Sulphur Dioxide (For all *Facility* sources), above which Action is Triggered

Contaminant	Contaminant Chemical Abstract System No.	Applicable Dates	Measured Level	Averaging Period
Sulphur dioxide	7446-09-05	From the date of this Approval to December 31, 2016	938 µg/m 3 (0.34 ppm)	1-hour
Sulphur dioxide	7446-09-05	From January 1, 2017	690 µg/m 3 (0.25 ppm)	1-hour

Table 2: Measured Levels of Sulphur Dioxide (For *Area Emissions* of the *Facility*), above which Action is Triggered.

Contaminant	Contaminant Chemical Abstract System No.	Applicable Dates	Measured Level	Averagin g Period
Sulphur dioxide	7446-09-05	At any time	690 µg/m 3 (0.25 ppm)	1-hour

The reasons for the imposition of these terms and conditions are as follows:

GENERAL

1. Condition No. 1 is included to require the *Approval* holder to build, operate and maintain the *Facility* in accordance with the Supporting Documentation in Schedule A considered by the *Director* in issuing this *Approval.*

LIMITED OPERATIONAL FLEXIBILITY, REQUIREMENT TO REQUEST AN *ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION* AND *PERFORMANCE LIMITS*

2. Conditions No. 2, 3 and 4 are included to limit and define the *Modifications* permitted by this *Approval,* and to set out the circumstances in which the *Company* shall request approval of an *Acceptable Point of Impingement Concentration* prior to making *Modifications.* The holder of the *Approval* is approved for operational flexibility for the *Facility* that is consistent with the description of the operations included with the application up to the *Facility Production Limit.* In return for the operational flexibility, the *Approval* places performance based limits that cannot be exceeded under the terms of this *Approval. Approval* holders will still have to obtain other relevant approvals required to operate the *Facility,* including requirements under other environmental legislation such as the *Environmental Assessment Act.*

DOCUMENTATION REQUIREMENTS

3. Condition No. 5 is included to require the *Company* to maintain ongoing documentation that demonstrates compliance with the *Performance Limits* of this *Approval* and allows the *Ministry* to monitor on-going compliance with these *Performance Limits.* The *Company* is required to have an up to date *ESDM Report* and *Acoustic Assessment Report* that describe the *Facility* at all times and make the *Emission Summary Table* and *Acoustic Assessment Summary Table* from these reports available to the public on an ongoing basis in order to maintain public communication with regard to the emissions from the *Facility.*

REPORTING REQUIREMENTS

4. Condition No. 6 is included to require the *Company* to provide a yearly *Written Summary Form* to the *Ministry,* to assist the *Ministry* with the review of the site's compliance with the *EPA,* the regulations and this *Approval.*

OPERATION AND MAINTENANCE

5. Condition No. 7 is included to require the *Company* to properly operate and maintain the *Processes with Significant Environmental Aspects* to minimize the impact to the environment from these processes.

COMPLAINTS RECORDING AND REPORTING PROCEDURE

6. Condition No. 8 is included to require the *Company* to respond to any environmental complaints regarding the operation of the *Equipment,* according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.

RECORD KEEPING REQUIREMENTS

7. Condition No. 9 is included to require the *Company* to retain all documentation related to this *Approval* and provide access to employees in or agents of the *Ministry,* upon request, so that the *Ministry* can determine if a more detailed review of compliance with the *Performance Limits* is necessary.

FUGITIVE EMISSIONS CONTROL

8. Condition No. 10 is included to emphasize that the *Equipment* and *Facility* must be maintained and operated in accordance with a procedure that will result in compliance with the *EPA, Regulation 419/05* and this *Approval* and to require the *Company* to keep records and to provide information to staff of the *Ministry* so that compliance with the *EPA, Regulation 419/05* and this *Approval* may be verified.

SOURCE TESTING

9. Condition No. 11 is included to require the *Company* to gather accurate information so that compliance with the *EPA, Regulation 419/05* and this *Approval* can be verified.

EMISSIONS MONITORING

10. Condition Nos. 12 and 13 are included to require the *Company* to gather accurate information on a continuous basis, so that compliance with the performance requirements of this *Approval* can be verified

AMBIENT AIR MONITORING

11. Condition No. 14 is included to assist the *Ministry* in gathering information on ambient air concentrations of contaminants near the *Facility,* to document overall community exposure from all sources.

ROAD DUST SAMPLING AND ANALYSIS

12. Condition No 15 is included to require the *Company* to gather and retain accurate information so that compliance with the *EPA, Regulation 419/05* and this *Approval* may be verified.

REVOCATION OF PREVIOUS APPROVALS

13. Condition No. 16 is included to identify that this *Approval* replaces all Section 9 Certificate(s) of Approval and Part II.1 Approvals in regards to the activities mentioned in subsection 9(1) of the *EPA* and dated prior to the date of this *Approval.*

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 5920-9W9H9U issued on June 10, 2015

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served *upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993 , S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:*

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

<table>
<tr>
<td>The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5</td>
<td>AND</td>
<td>The Environmental Commissioner
1075 Bay Street, Suite 605
Toronto, Ontario
M5S 2B1</td>
<td>AND</td>
<td>The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment and Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5</td>
</tr>
</table>

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca , you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 4th day of July, 2016

Rudolf Wan, P.Eng.
Director
appointed for the purposes of Part II.1 of

the *Environmental Protection Act*

SA/

c: District Manager, MOECC Sudbury
Monika Greenfield, Vale Canada Limited