Tonkin+Taylor

Job No: 1010577.3000
18 October 2021

Auckland Council
Private Bag 92300
Auckland 1142

Attention: Tracey Grant; Jonathan Clarke

New Zealand Steel - Glenbrook Steel Mill Reconsenting
Response to Request for Further Information (Council Ref: DIS60376538)

Further to your letter dated 23 September 2021 requesting further information pursuant to section 92 of the Resource Management Act 1991 (RMA), we write to provide a response to the matters raised therein. The information requested is shown in black, followed by our response in *blue italics*.

The majority of the requests have been addressed by way of updates and amendments to the application documents. Attached to this letter is a full set of application documents, to replace the documents originally lodged. This letter provides cross referencing to the updated sections of the following reports, which have been amended to address the section 92 requests:

- Assessment of Effects on the Environment (AEE) – Glenbrook Steel Mill Air Discharge Permit Replacement, Tonkin & Taylor Ltd, 18 October 2021;
- Appendix F to the AEE: Air Quality Assessment (AQA), Glenbrook Steel Mill, Tonkin & Taylor Ltd, 18 October 2021;
- Appendix C to the AQA – Dispersion Modelling Report – Existing site, Tonkin & Taylor Ltd, 18 October 2021;
- Appendix E[1] to the AQA – Ambient Air Quality Monitoring Report, Tonkin & Taylor Ltd, 18 October 2021; and
- Appendix L to the AEE: Proposed Conditions – Glenbrook Steel Mill Air Discharge Permit Replacement, Tonkin & Taylor Ltd, 18 October 2021.

Rolling Mills and Coating Lines

1) AQR sections 3.4.2 & 3.4.3 describe Rolling Mill operations where fume generated is described as being extracted to fume hoods and mist eliminators. Please provide further details of these air discharges, including how any discharges of hazardous air pollutants are controlled.

   Section 3.4.1 of the Air Quality Assessment (AQA) has been updated to include this information.

[1] Note this was formerly Appendix D to the AQA in the original lodgement documents.

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2) AQR section 3.5 notes that 'in the context of the Steel Mill, there are no significant discharges to air' from the Finishing Plants. I agree with the relatively minor scale of these air discharges as compared to the very large Iron & Steel Plant discharges. However, I note that some of these processes require air discharge resource consents under AUP(OP) Table E14.4.1 in their own right, indicating that a more thorough assessment of effects is required than that presented in the AQR. Please provide further details of the air discharges arising from the Finishing Plants, including the estimated discharge rates of any hazardous air pollutants, measures to control these discharges and comment on any resulting effects of these discharges.

Further description of metal coating activities has been included in Section 3.5.2 of the AQA. Note: This comment in the AQA relates to emissions from the metal coating line, not the entire Finishing Plant. The metal coating line includes 2 x 60 kW natural gas burners and a wet scrubber to remove any droplets of the 2% chromate solution. Deposited and suspended metals have been assessed through ambient monitoring. Discharges from the Paintline Incinerators have been assessed by modelling VOC and NO_2 from the incinerator stacks.

Fugitive air discharges (yards, raw materials, and slag processes)

3) Please define the maximum capacity and typical volumes of coal stored in outdoor stockpiles at the site.

Discussed in Sections 8.3.3.4 and 12.2 of the AQA, and a small update has been made to the conclusions in Section 8.7 to align with the earlier change.

Note: The maximum and "typical" capacities have not been quantified. Coal stockpiling will only occur within the Operational Area shown in the application document. The relationship between the amount of coal stockpiled and off-site effects is discussed.

4) AQR section 3.6.1 describes that the Primary Concentrate is heated with natural gas with air extraction to a baghouse. Please provide further details of this process (including the gross heating capacity and temperatures that the Primary Concentrate attains) and comment on the potential effects of any resulting discharges of hazardous air pollutants.

Section 3.6.1 of the AQA has been updated to include this information. A corresponding update has been made to Section 3.3.1 of the Assessment of Effects on the Environment (AEE).

5) Please detail the maximum crushing capacity for Slag and Metal Recovery operations and what water spray or other dust controls exist on the crusher units.

Sections 8.3.3.1 and 8.3.3.3 of the AQA have been updated to provide this information.

6) Several references are made in the AEE to a fume containment system for iron plating. Please provide further details of this system, including a diagram and photos, an assessment of its effectiveness for controlling air discharges of PM_{10}.

Section 8.4.1.1 of the AQA has been updated with this information. A corresponding update has been made at Table 4.2 of the AEE.

7) As part of the assessment of alternatives and Best Practicable Option, please assess and comment on the potential application of the proposed iron plating fume containment system to be utilised for RPCC and slag tipping activities to mitigate air discharges from these activities.

Sections 8.4.1.2 and Section 8.4.1.3 have been updated in the AQA to address slag tipping and RPCC tipping respectively. A corresponding footnote has been added to the AEE at Section 4.4.2.

8) The Ambient Air Quality Monitoring Report concludes that the majority of PM10 recorded at the 64 Glenbrook Road monitoring site arises from fugitive sources while PM2.5 is predominantly from stack sources. Please provide further commentary regarding the potential for fugitive dust sources to contribute to both PM2.5 and PM_{10} beyond the site boundary, including by reference to any available or published size-speciation of dust particles from any similar sources.

Discussion of coal stockpiling and handling's contribution to ambient $PM_{2.5}$ levels has been added to Section 6.4.2 of Appendix E of the AQA, the Ambient Air Quality Monitoring Report and to Section 7.2.2.2 of the AQA. A corresponding update has also been made at Section 7.4.1.2 of the AEE.

9) Please detail the frequency of RPCC tipping likely to occur, drawing on information from previous years.

Section 8.3.1.3 of the AQA has been updated to provide this information. A corresponding update has also been made at Section 3.3.2.6 of the AEE.

10) AQR sections 8.5.4 & 8.6 note that RPCC tipping is likely responsible for the majority of off-site complaints received. Please analyse and comment on the spatial extent of any deposited dust identified through these complaints.

Section 8.3.1.3 of the AQA has been updated to provide this information. A corresponding update has been made at Section 3.3.2.6 of the AEE.

11) AQR section 8.3.3.4 states that the receipt of coal by truck has the propensity to generate more dust than when received by train. Please assess how any changes to this material handling activity over the past decade may have resulted in off-site dust effects and how the proposed methods of receipt and handling of coal compare to the Best Practicable Option to minimise air discharges from all sources (including materials handling and exhaust emissions).

Sections 8.3.3.4 and 12.2 of the AQA have been updated to provide this information. Corresponding updates have been made at Sections 7.4.9 and 8.3 of the AEE.

12) AQR section 8.3.3.5 describes in general terms that heavy vehicle traffic around the Northern Operational Area has increased over the past decade, likely contributing to greater off-site PM_{10} concentrations. Please provide any available traffic volume data to support this assessment, along with an assessment of how internal roads and traffic flows may have changed over this period.

Sections 8.3.3.4 and 8.3.3.6 of the AQA have been updated to provide this information. A corresponding update has been made at Section 8.3 of the AEE.

Dispersion modelling

13) Please provide an additional table showing how the modelled (average and maximum) stack discharges, presented in units of kg/hr in Tables 4.1 to 4.5 of the Modelling Report, correspond with the average and maximum in-stack concentrations as measured in past stack testing (as discussed in AQR sections 4.3 & 4.4) and consent limit emission concentrations, providing calculations to show the derivation of the average volumetric flowrates for each stack.

A new table, Appendix C Table 1, is provided in Appendix C to the AQA – the Dispersion Modelling report for the existing site. This table sets out the average volumetric flow rates for each stack and the conversion of the consent limits to mass emission rates.

14) Table C.4 of Modelling Report Appendix C1.3.2 shows that the proposed consent limits for $PM_{2.5}$ discharges have not been input as a modelling scenario. Please discuss how the assessment of effects supports the conclusions regarding off-site adverse effects given the proposed discharge limits, and/or if these discharge limits should be reduced (including 'split target' average/maximum approaches).

The proposed $PM_{2.5}$ limits on certain baghouse stacks are discussed in Section 10.2 of the AQA and Table 10.2. Appendix L to the AEE – Proposed Consent Conditions - has been updated.

Note: The ambient air monitoring for $PM_{2.5}$ demonstrates that the site's emissions are not resulting in unacceptable off-site effects.

A split target or statistical approach is not considered appropriate given the frequency of stack testing – this approach would generally be used for continuous monitoring.

15) Section 2.6 of the Modelling Report describes a differing/adapted Proxy method for calculating the atmospheric conversion of NO to NO2 than that recommended by the Good Practice Guide for Assessing Discharges to Air from Industry (Ministry for the Environment, 2016). Please provide further commentary to support/defend the use of the semi-NO-limited proxy method in calculating this conversion, including by reference to available ambient air quality data.

Note: The purpose of the adapted Proxy NO_2 method was to validate the dispersion modelling. We consider that it is more appropriate to validate the model based on total NO_x, rather than NO_2 to avoid the confounding influence of atmospheric chemistry. Consequently, Section 2.6 of the Dispersion Modelling report for the existing site (Appendix C to the AQA) has been deleted and amendments have been made to Section 4.4 to address the NO_x emission rates used, Section 5.1 to expand on the model validation methodology, Section 5.3 to directly compare the model outputs for NO_x with local monitoring data and the overall conclusions in Section 5.4 and Section 9 regarding model performance. The figures in Appendix D of the Dispersion Modelling report showing the comparison of the modelled and ambient NO_x measurements have also been replaced, along with updates to the relevant tables and figures detailing the NO_x emission rates used in the modelling in Appendix C.

Additional discussion of atmospheric chemistry is set out in Appendix E of the Ambient Air Quality Monitoring report (Appendix E to the AQA), and this is referenced in Section 8.1 of the Ambient Monitoring Report.

Ambient air quality monitoring

16) Section 7 of the Ambient Monitoring Report shows that the average SO2 concentrations are heavily influenced by some outlying high readings. Please investigate and report the timings and corresponding site activities to assess the potential causes of these outlying readings.

Section 7.2.1 of Appendix D to the AQA, the Ambient Air Quality Monitoring report has been updated to provide this information. A corresponding update to Section 7.4.2 of the AEE has been made.

We trust that the attached information satisfies your requests. Please do not hesitate to contact Jennifer Carvill in the first instance if you require further clarification of any aspects of this letter.

Yours sincerely…

Jennifer Carvill
Project Director

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