

Identifier	Topic	Reference to EIS/EA Report	Summary of Previous Comment	Proponent's Response to Previous Comment	Follow-up comment/ Request for Information	New Proponent Response	Subsequent Comment
			<i>Date: March 2014</i> MOE-Air 1	<i>Date: June 2015</i>	<i>Date: August 2015</i>	<i>Date: November 2015</i>	
MOE-Air 1B	Air quality	EIS/EA § 3.2.5.2, Atmospheric Environment TSD Version 1 and Version 2 and Appendix 3.III.	For the background air quality, metals concentrations in air were not mentioned. The baseline total PM for the study area, in addition to PM _{2.5} and PM ₁₀ , should also be provided.	<p>As discussed in the Final EIS/EA Report, at the time of this assessment there are no industrial applications within the RSA (Regional Study Area) and the area is undeveloped, thus the existing air quality is not currently impacted by local sources. Northern Ontario does not typically have air quality issues as much of the land is natural and undisturbed. Field studies were not undertaken to characterize the existing air quality conditions, since available data from Northern Canada stations were considered adequate to characterize the existing air quality in the RSA and LSA (Local Study Area). Further, it is expected that in remote locations such as the RSA, existing air quality values will be lower than the available measured values and that for indicator compounds (e.g., metals) the existing air quality concentration will be zero. This approach was presented and agreed to by the Government Review Team in a meeting on April 15, 2014.</p> <p>The monitoring stations selected to represent the existing conditions have installed continuous PM₁₀ and PM_{2.5} samplers but do not make concentrations of TSP or metals data publically available therefore there are no existing concentration values available for comparison. The predicted metals emissions from the Project are not significant when compared to the MOE POI limits and therefore including an assessment of the existing conditions for metals would not add value to the assessment.</p>	<p>Baseline concentrations for metals will not be included as the modelled metals concentrations are well below the applicable criteria based on the discussion in the meeting on April 15, 2014.</p> <p>The inclusion of TSP background contribution is important given that concentrations of TSP are predicted to exceed the AAQC. It should be noted that Golder had agreed to include PM₁₀ and TSP in the tables in the meeting, and MOECC provided a comment on the meeting minutes regarding the TSP baseline concentration: the baseline TSP concentration can be estimated from either TSP data or from PM_{2.5} or PM₁₀ data if TSP data are not available. TSP background concentration should be included to understand the potential cumulative effects for TSP from the Project.</p>	<p>See response to MOE AIR-2 (MOE AIR 2B). Tables MOE Air-2-1 and MOE Air-2-2 have been updated to include the background concentration for TSP.</p> <p>Relevant Attachments: Updated Tables MOE Air-2-1 and MOE Air-2-2</p> <p>MOE AIR 2: "Ambient monitoring data for the SPM (i.e. TSP) size fraction is not readily available for the monitoring stations that were used to quantify representative background air quality concentrations; however, an estimate of the background SPM concentration can be estimated from the available PM₁₀ and PM_{2.5} monitoring results. Fine particulate matter (i.e., PM_{2.5}) is a subset of the PM₁₀, and PM₁₀ is a subset of SPM, as shown in the following Figure 1. Therefore, it is reasonable to assume that the ambient concentrations of SPM will be greater than corresponding PM₁₀ levels, and PM₁₀ concentrations will be greater than the corresponding levels of PM_{2.5}. The overall levels of PM_{2.5} in Canada were found to be about 50% of the PM₁₀ concentrations and so on (CEPA/FPAC 1998). This estimate is conservative since the only sources of particulate matter in the study are from long range transportation and the larger particle size fraction would be subject to deposition. By applying this ratio it would be possible to estimate the background SPM concentration for the region to be two times the PM₁₀ concentration. Tables MOE Air-2-1 and MOE Air-2-2 have been updated to include the background concentration for TSP.</p>	

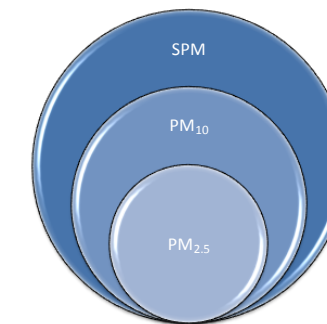


Figure 1: Relationship between Suspended Particulate Matter, PM₁₀ and PM_{2.5}

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						<p><i>Appendix 3.IV of the Atmospheric TSD contains tables of air concentrations as a result of the Project. The background concentrations can be added to these values at each receptor location to display the cumulative air concentrations. Table MOE AIR 2-4 summarizes the cumulative concentrations (Project + background) for the criteria air contaminants for the 24-hr averaging period. These values were assessed in the Human Health and Ecological Risk Assessment.</i></p> <p><i>It is important to recognize that the original Air Quality Assessment was completed with the intent to assess O.Reg.419/05 compliance and compare against the health based PM2.5 CAAQS. As described in Section 3.1.4 of the Atmospheric Environment TSD, the assessment focused on a conservative "worst case" operating scenario resulting in conservative emission rates and dispersion modelling. These results were passed on to other technical disciplines for assessment (e.g., terrestrial ecology, human health). Since the results of these assessments, did not predict any adverse effects, no refinement of the operating scenario or emission rates were completed even though refinements may reduce the modelled concentrations significantly and further reduce the following Frequency above Applicable Criteria Analyses.</i></p> <p><i>Frequency above Applicable Criteria Analyses were completed for all compounds for which maximum ambient air concentrations were predicted in Table MOE-Air2-2 to be above the applicable criteria. The assessment used a maximum emission rate scenario that assumes the maximum road distance and the maximum production rate. This scenario may never occur in actuality however it was chosen in order to capture the maximum scenario for multiple activities without having to assess multiple operating years. The Frequency above Applicable Criteria Analyses assumed that this maximum emission rate occurs for every day over the 5 years meteorological data set which will not occur during the actual operation phase. For this reason this Analysis significantly overestimates the actual concentrations once the mine is in operation. If a Frequency above Applicable Criteria Analyses was planned for PM10</i></p>	

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						<p>and SPM as part of the EA, then a different operating condition would have been selected.</p> <p>The Frequency above Applicable Criteria Analysis exercise that has been completed considered only the receptors at which the maximum concentrations provided in Table MOE-Air-2-2 occurred, and assessed the frequency of above-criteria estimates at those receptors. The results of the Frequency above Applicable Criteria Analyses for each relevant compound and averaging time are provided in Table MOE-Air-2-3.</p> <p>Figures T-12-1 through T-12-8 have been provided as a response to comment T(2)-02 and provide concentration isopleths and indicate the maximum concentration locations for each substance in each study area and averaging time. In addition, the receptors at which Frequency above Applicable Criteria Analyses have been completed for each compound, study area and averaging time are indicated in the tables in the legends of these figures. The Figures also show the locations of sensitive receptors.</p> <p>Relevant Attachments: Updated Tables MOE Air-2-1, MOE Air-2-2 and MOE Air 2-3 Table MOE Air 2-4 Figures T-12-1 through T-12-8"</p>	