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**Re: Response to Shantz Station Pit Air Quality Assessment – Technical Peer Review
Capital Paving Shantz Station Pit
RWDI Reference No. 1803181**

Dear Mr. Lourenco,

I have reviewed the comments raised in the “Shantz Station Pit Air Quality Assessment – Technical Peer Review”, prepared by Dillon Consulting Limited, dated April 15, 2020. **Table 1**, attached, provides the detailed responses to these comments.

Please do not hesitate to contact me if you have any questions.

Yours truly,

RWDI

Brian G. Sulley, B.A.Sc., P.Eng.
Technical Director, Principal

BGS/RS/hta
Attach.



Table 1: Detailed Responses to Dillon Consulting Limited Comments

#	Dillon Consulting Comment	RWDI Response
1.	Dillon has reviewed the provided dispersion modelling files and generally agrees with the approach and model set up. Dillon did not identify any significant errors in the provided modelling.	No response required.
2.	Dillon's Review of the Report noted that conifer trees were included in the Report as a dust control measure. Dillon notes that the Response and the BMPP refer to the conifer trees, but do not provide details such as the required height of trees, tree density, or assumed control efficiency. Therefore, Dillon cannot verify the effectiveness of the proposed conifer trees as a mitigation solution. Dillon notes that vegetation, such as trees, are recognized as a viable mitigative measure when designed appropriately. It is recommended that the proponent specify the height of trees and required tree density.	<p>With respect to conifer tree planting, the BMPP currently states that a row of conifers will be planted along the top of the berm adjacent to Receptor R3, on the portion of that berm located in Phase 1. This dwelling is owned by the owner of the gravel pit lands.</p> <p>RWDI recommends the following additional text:</p> <ul style="list-style-type: none">• "This tree screen shall:<ul style="list-style-type: none">○ Consist primarily of coniferous trees, with an initial planted height of at least 1.25 metres;○ Be planted to a thickness of at least 10 metres (i.e., a minimum of 2 rows of trees spaced 4.5 metres apart);○ Be planted upon completion of the berm construction, such that the trees will be effective as a supplementary screening measure as soon as possible."



3.	The BMPP recommends a road watering schedule which is dependent on ambient temperature and relative humidity. The watering frequency prescribed in the BMPP is reasonable and when combined with the additional episodic watering noted in the BMPP should allow for management of dust. The watering program should be monitored and the frequency of watering increased if off-property dust impacts occur.	Agreed. This is already addressed in the Operational Weather Forecasting section of the BMPP, which requires that watering be implemented immediately if dust is observed to be blowing toward the residences or amenity spaces adjacent to the site, regardless of the criteria listed. The watering program will be monitored.
4.	Dillon recommends that the items noted in the BMPP with respect to the paved on-site roadway (i.e. monitoring, sweeping, and flushing based on the presence of visible track-out) be extended to the public roadway in proximity to the Site entrance.	In RWDI's experience, this is not necessary if track-out is appropriately managed on-site. However, in this case Capital has agreed to undertake these items on the public roadway at the entrance to the pit.
5.	The Response states that using 90th percentile ozone concentrations is sufficient for the purposes of this report. Dillon recommends that using 90th percentile ozone concentration will potentially under-predict NO ₂ concentrations during peak ozone concentrations. However, based on the modeling files provided, NO ₂ is not predicted to be in exceedance of any standard or criteria even assuming 100% conversion from NO _x to NO ₂ . Dillon, therefore, agrees that the differences in the two approaches will not change the conclusions or recommendations of the report.	RWDI disagrees with the claim that using the 90 th percentile value for ozone is inappropriate, as daily ozone concentrations fluctuate significantly throughout the day, normally peaking in the afternoon, when dispersion of emissions is typically highest (leading to lower predicted concentrations). Regardless, we agree with Dillon's conclusion that even if one assumes 100% conversion of NO _x to NO ₂ , it would not change the conclusions of the assessment. No further analysis is warranted.
6.	The Report included a 200 m setback between residences and processing, within which all activities would require monitoring and control. Dillon has confirmed that this distance is supported by the provided dispersion modelling.	No response required.



7.	<p>Dillon recommends that the wording in the BMPP and subsequent approvals issued by the Region be worded to require monitoring and control when activity is “within 200 m of a residential property”. The BMPP as written prescribes monitoring and control when activity is “within 200 m of a residence.” This recommendation is based on the protection of enjoyment of property.</p>	<p>RWDI would agree with changing the wording to “a residence or outdoor amenity space”, as many of the surrounding properties include agricultural lands.</p>
8.	<p>The inclusion of all fugitive sources of dust within dispersion modelling is required for air quality impact assessments in support of an Environmental Assessment whereas, when specific criteria are met, Environmental Compliance Approval assessments allow for the exclusion of fugitive dust. Dillon recommends that in the case of greenfield development, such as the proposed undertaking, the more robust Environmental Assessment approach is appropriate. As such, it is recommended that all sources of fugitive dust should be included in the dispersion modelling assessment to identify if additional mitigation or operational changes are required to minimize the impact to receptors.</p>	<p>We do not think it is appropriate nor reasonable to assess an above water pit application under the same requirements as an Environmental Assessment for air quality or any other impact assessment for that matter. The proposed application does not require approval under the Environmental Assessment process so it should not be subject to the same requirements. If the legislation intended that above water pits or “greenfield development” would be subject to EA requirements, it would have explicitly stated this.</p> <p>In RWDI’s experience, the inclusion of fugitive dust from storage piles and exposed lands in the assessment of emissions and dispersion modelling is ineffective and often inaccurate. It is for this reason that the MECP prefers that applicants for ECAs at aggregate sites focus their efforts on developing BMPPs to deal with these sources, rather than modelling exercises of little value. It is not required in order to properly design control measures for these sources. RWDI believes that the mitigation measures in the BMPP are appropriate and provide suitable level of protection, as supported by our experience at aggregate sites throughout Ontario. In addition, the majority of aggregates stockpiled will be washed products where fines are removed by water.</p>



9.	<p>Impact assessments made in support of an Environmental Assessment require the assessment of off-site transportation sources whereas an assessment in support of an Environmental Compliance Approval does not require these sources be included. Dillon recommends that in the case of greenfield development, such as the proposed undertaking, the more robust Environmental Assessment approach is appropriate. However, based on the anticipated vehicle volumes and the dispersion modelling provided, it is unlikely that the impact of the haul trucks will result in exceedances of the relevant criteria.</p>	<p>As Dillon notes, it is unlikely that this exercise will result in exceedances of the relevant criteria. RWDI agrees with this conclusion and believes that additional analysis is therefore not required.</p>
10.	<p>The inclusion of the CAAQS in addition to the AAQC is typical for an impact assessment made under the Environmental Assessment framework. The inclusion of the CAAQS would introduce several new averaging periods for the contaminants which were included in the assessment. However, Dillon notes that the inclusion of the CAAQS is unlikely to change the conclusions of the Report.</p>	<p>As noted previously, the CAAQS were not developed as facility level regulatory standards and are meant to consider all important sources of air pollution emissions in an air zone. They are intended to guide air zone management actions on a broader scale. They are simply not applicable in this context, except where no other value exists.</p> <p>Regardless, the inclusion of the CAAQS introduces a single new averaging time for a single contaminant (an annual criterion for NO₂). Both averaging periods for the PM_{2.5} CAAQS have already been considered, and the CAAQS for ozone and sulphur dioxide are not relevant to this facility.</p> <p>As Dillon notes, it is unlikely that the inclusion of the CAAQS will result in exceedances of the relevant criteria. RWDI agrees with this conclusion and believes that additional analysis is therefore not required.</p>