Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

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Prepared by:

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Revision Record

Revision	Date	Prepared By	Checked By	Authorized By
0	November 12, 2024	Alice Najjar	Diane Freeman	Scott Penton

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Executive Summary

SLR Consulting (Canada) Ltd. (SLR), was retained by 800460 Ontario Ltd., to conduct a Compatibility / Mitigation Study focusing on air quality, odour, dust, noise, and vibration in support of a revision to the Draft Plan of Subdivision and Combined Official Plan and Zoning By-Law Amendment Application for the Vacant Land located at 9304 McLeod Road in Niagara Falls, Ontario. (“the Project site”).

This assessment is intended to address land use compatibility in accordance with the Ontario Ministry of Environment, Conservation and Parks (“MECP”) D-Series Guidelines in particular guideline D-6.

This assessment has considered:

- Industrial air quality, odour, and dust emissions;
- Industrial/ commercial noise and vibration; and
- Transportation-related noise and vibration.

Based on the review completed, the Project Site is anticipated to be compatible with the surrounding land uses from an air quality perspective.

Noise and vibration emissions from surrounding industries have been reviewed. Noise and vibration emissions from the surrounding industries are predicted to meet the MECP Class 1 guidelines.

The potential for transportation noise on the development has also been reviewed and road traffic noise impact was evaluated. Upgraded glazing is not required. Forced air heating and various warning clauses are required to address road traffic noise, as outlined in Section 6.2.7.

The potential for vibration emissions on the proposed development has been assessed. Based on the results of our studies adverse vibration emissions from industrial and transportation sources are not anticipated.

Based on the above, the Project site is anticipated to be compatible with surrounding land uses and will not affect the ability for industrial facilities to obtain or maintain compliance with applicable Provincial environmental policies, regulations, approvals, authorizations, and guidelines.

The requirements of MECP Guideline D-6, Regulation 419/05, and Publication NPC-300 are met. As the applicable policies and guidelines are met, the Project site is:

- Unlikely to result in increased risk of complaint and nuisance claims;
- Unlikely to result in operational constraints for the major facilities; and
- Unlikely to result in constraints on major facilities to reasonably expand, intensify or introduce changes to their operations.

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Acronyms and Abbreviations

AADT	Average Annual Daily Traffic
dBA	Decibels (A-weighted)
dBAI	Decibels (A-weighted), Impulsive
EASR	Environmental Activity and Sector Registry
ECA	Environmental Compliance Approval
ECO	Environmental Commissioner of Ontario
EPA	Ontario Environmental Protection Act
HVAC	Heating Ventilation and Air Conditioning
ISO	International Organization for Standardization
L_{eq}	Energy Equivalent Sound Level
L_{LM}	Logarithmic Mean Impulse Sound Level
MECP	Ministry of the Environment, Conservation and Parks
NPC-300	MECP Publication NPC-300
NRCC	National Research Council Canada
O. Reg. 419/05	Ontario Regulation 419/05
OBC	Ontario Building Code
OPA	Official Plan Amendment
ORNAMENT	Ontario Road Noise Analysis Method for Environment and Transportation
PPS	Provincial Planning Statement
PWL	Sound Power Level
SADT	Summer Average Daily Traffic
SCC	Standards Council of Canada
SLM	Sound Level Meter
SPA	Site Plan Approval
SPL	Sound Pressure Level
STC	Sound Transmission Class
ToR	Terms of Reference
ZBA	Zoning By-law Amendment

1.0 Introduction

SLR Consulting (Canada) Ltd. (SLR), was retained by 800460 Ontario Ltd., to conduct a Compatibility / Mitigation Study focusing on air quality, odour, dust, noise, and vibration in support of an Official Plan Amendment Application, Modified Draft Plan of Subdivision and Zoning By-Law Amendment Application for the Vacant Land located at 9304 McLeod Road in Niagara Falls, Ontario.

This assessment is required by the City of Niagara Falls in support of planning approvals for the development of the Project site. The addition of “sensitive” land uses within the Project site, including residential, requires an assessment of land use compatibility with the surrounding proposed, and existing, employment land uses.

This assessment has considered:

- Industrial air quality, odour, and dust emissions;
- Industrial/ commercial noise and vibration; and
- Transportation-related noise and vibration.

The assessment has included a review of air quality and noise emissions from industrial facilities in the area.

In this assessment, SLR has reviewed the surrounding land uses and major facilities in the area with respect to the following guidelines:

- The Provincial Planning Statement;
- Ministry of the Environment, Conservation and Parks (“MECP”) Guidelines D-1 and D-6;
- Ontario Regulation 419/05: *Air Pollution – Local Air Quality* and its associated air quality standards and assessment requirements;
- The MECP draft policies on odour impacts and assessment;
- MECP Publication NPC-300 noise guidelines for industrial and transportation; and
- City of Niagara Falls Noise Control By-law 053-2009 as amended.

This report evaluates existing and potential land use compatibility and evaluates options to achieve appropriate design, buffering and/or separation distances between the proposed sensitive land uses, including residential uses, and nearby Employment Areas and/or Major Facilities.

2.0 Description of Development and Surroundings

2.1 Project Site

The proposed Project site is located at 9304 McLeod Road in Niagara Falls. The Project site is currently vacant of any buildings or operations. The Project site is illustrated in **Figure 1**.

2.2 Proposed Development

The proposed Project site is planned to include single detached residential, street townhouses, rear lane townhouses, back-to-back townhouses, a stormwater management pond, and Parkland.

A copy of the demonstration plan is provided in **Appendix A.**

2.3 Surroundings

The Project site is bounded by McLeod Road to the north and Beechwood Road to the west. The area surrounding the Project site is currently a mix of industrial and agricultural land uses. The lands to the east are currently being developed into a residential subdivision.

2.4 City of Niagara Falls Official Plan

The Project site and lands to the south and west are designated Industrial. **The** subject application proposes to change the Official Plan designation to a site specific policy area that will permit residential land uses over the majority of the site with open space uses including a park, watercourse and pedestrian walkways in the south portion of the site. The proposed Official Plan policy and schedule is included in **Appendix B.**.

To the east, the lands are designated a mix of Residential and Environmental Protection Area. To the north, across McLeod Road, the lands are designated Good General Agricultural Area These lands to the north were recently brought into the urban area for residential purposes. An excerpt from the City of Niagara Falls Official Plan Map for the area is provided in **Figure 2a**.

2.5 City of Niagara Falls Zoning By Law 79-200 (1)

The Project site is comprised of a mix of zoning destinations including Light Industrial (“LI”), Development Holding (“DH”), and Hazard Land (“HL”). The lands to the west are zoned LI. To the east, some of the lands are zoned Residential Mixed (“R3”) and some remain zoned under the Environmental Protection Area (“EPA”). To the north, the lands are zoned Agricultural (“A”). An excerpt from the City of Niagara Falls area zoning map is provided in **Figure 2b**.

3.0 Assessment Framework

The intent of this report is to undertake an assessment of land use compatibility between the Project site and surrounding proposed, and existing land uses. This report identifies and evaluates options to support compatibility between the sensitive, employment and/or major facility land uses through design, buffering and/or creation of separation distances.

The requirements of the Ontario planning regime are organized such that generic policy is informed by specific policy, guidance, and legislation, as follows:

- The Ontario Planning Act, Section 2.1 – sets the ground rules for land use planning in Ontario, whereby planning decisions have regard to matters of provincial interest including orderly development, public health, and safety; then
- The Provincial Planning Statement (“PPS”) sets out goals – making sure adjacent land uses are compatible from a health and safety perspective and are appropriately buffered; then

- The MECP D-series of guidelines set out methods to determine if assessments are required (Areas of Influence, Recommended Minimum Separation Distances, and the need for additional studies); then
- MECP and Municipal regulations, policies, standards, and guidelines than set out the requirements of additional air quality studies and the applicable policies, standards, guidelines, and objectives to ensure that adverse effects do not occur.

3.1 Ontario Planning Act

The Ontario Planning Act is provincial legislation that sets out the ground rules for land use planning in Ontario. It describes how land uses may be controlled, and who may control them. "The purpose of the Act is to:

- provide for planning processes that are fair by making them open, accessible, timely and efficient;
- promote sustainable economic development in a healthy natural environment within a provincial policy framework;
- provide for a land use planning system led by provincial policy;
- integrate matters of provincial interest into provincial and municipal planning decisions by requiring that all decisions be consistent with the Provincial Planning Statement and conform/not conflict with provincial plans;
- encourage co-operation and coordination among various interests;
- recognize the decision-making authority and accountability of municipal councils in planning"[1]

Section 2.1 of the Ontario Planning Act describes how approval authorities and Tribunals must have regard to matters of provincial interest including orderly development, public health, and safety.

3.2 Provincial Planning Statement

The PPS "provides policy direction on matters of provincial interest related to land use planning and development. As a key part of the Ontario policy-led planning system, the Provincial Planning Statement sets the policy foundation for regulating the development and use of land. It also supports the provincial goal to enhance the quality of life for all Ontarians."

The PPS is a generic document, providing a consolidated statement of the government policies on land use planning and is issued under section 3 of the Planning Act. Municipalities are the primary implementers of the PPS through policies in their local official plans, zoning by-laws and other planning related decisions.

[1] https://www.ontario.ca/document/citizens-guide-land-use-planning/planning-act

The Province of Ontario approved a new PPS which came into effect on October 20, 2024. The new PPS will replace both the 2020 PPS and the Growth Plan for the Greater Golden Horseshoe (2019, as amended). Policy direction concerning land use compatibility is provided in Section 3.5 of the 2024 PPS.

"3.5 Land Use Compatibility

1. *Major facilities* and *sensitive land uses* shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures.
2. Where avoidance is not possible in accordance with policy 3.5.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing or other *major facilities* that are vulnerable to encroachment by ensuring that the planning and development of proposed adjacent *sensitive land uses* is only permitted if potential adverse affects to the proposed sensitive land use are minimized and mitigated, and potential impacts to industrial, manufacturing or other major facilities are minimized and mitigated in accordance with provincial guidelines, standards and procedures."

The goals of the PPS are implemented through Municipal and Provincial policies, as discussed below. Provided the Municipal and Provincial policies, guidelines, standards, and procedures are met, the requirements of the PPS will be met.

3.3 D-Series of Guidelines

The D-series of guidelines were developed by the MECP in 1995 as a means to assess Recommended Minimum Separation Distances and other control measures for land use planning proposals in an effort to prevent or minimize 'adverse effects' from the encroachment of incompatible land uses where a facility either exists or is proposed. D-series guidelines address sources including sewage treatment (Guideline D-2), gas and oil pipelines (Guideline D-3), landfills (Guideline D-4), water services (Guideline D-5) and industries (Guideline D-6).

For this assessment, the applicable guideline is Guideline D-6 - *Compatibility between Industrial Facilities and Sensitive Land Uses*.

Adverse effect is a term defined in the Environmental Protection Act and "means one or more of

- impairment of the quality of the natural environment for any use that can be made of it,
- injury or damage to property or to plant or animal life,
- harm or material discomfort to any person,
- an adverse effect on the health of any person,
- impairment of the safety of any person,
- rendering any property or plant or animal life unfit for human use,
- loss of enjoyment of normal use of property, and
- interference with the normal conduct of business".

3.3.1 Guideline D-6 Requirements

The guideline specifically addresses issues of air quality, odour, dust, noise, and litter. To minimize the potential to cause an adverse effect, Areas of Influence and Recommended Minimum Separation Distances are included within the guidelines. The Areas of Influence and Recommended Minimum Separation Distances from the guidelines are provided in the table below.

Table 1: Guideline D-6 - Potential Areas of Influence and Recommended Minimum Separation Distances for Industrial Land Uses

Industry Classification	Area of Influence	Recommended Minimum Separation Distance
Class I – Light Industrial	70 m	20 m
Class II – Medium Industrial	300 m	70 m
Class III – Heavy Industrial	1000 m	300 m

Industrial categorization criteria are supplied in Guideline D-6, and are shown in the following table:

Table 2: Guideline D-6 - Industrial Categorization Criteria

Category	Outputs	Scale	Process	Operations / Intensity	Possible Examples
Class I Light Industry	• Noise: Sound not audible off-property • Dust: Infrequent and not intense • Odour: Infrequent and not intense • Vibration: No ground-borne vibration on plant property	• No outside storage • Small-scale plant or scale is irrelevant in relation to all other criteria for this Class	• Self-contained plant or building which produces/ stores a packaged product • Low probability of fugitive emissions	• Daytime operations only • Infrequent movement of products and/ or heavy trucks	• Electronics manufacturing and repair • Furniture repair and refinishing • Beverage bottling • Auto parts supply • Packaging and crafting services • Distribution of dairy products • Laundry and linen supply

Category	Outputs	Scale	Process	Operations / Intensity	Possible Examples
Class II Medium Industry	• Noise: Sound occasionally heard off-property • Dust: Frequent and occasionally intense • Odour: Frequent and occasionally intense • Vibration: Possible ground-borne vibration, but cannot be perceived off-property	• Outside storage permitted • Medium level of production allowed	• Open process • Periodic outputs of minor annoyance • Low probability of fugitive emissions	• Shift operations permitted • Frequent movements of products and/ or heavy trucks with the majority of movements during daytime hours	• Magazine printing • Paint spray booths • Metal command • Electrical production • Manufacturing of dairy products • Dry cleaning services • Feed packing plants
Class III Heavy Industry	• Noise: Sound frequently audible off property • Dust: Persistent and/ or intense • Odour: Persistent and/ or intense • Vibration: Ground-borne vibration can frequently be perceived off-property	• Outside storage of raw and finished products • Large production levels	• Open process • Frequent outputs of major annoyances • High probability of fugitive emissions	• Continuous movement of products and employees • Daily shift operations permitted	• Paint and varnish manufacturing • Organic chemical manufacturing • Breweries • Solvent recovery plants • Soaps and detergent manufacturing • Metal refining and manufacturing

3.3.2 Requirements for Assessments

Guideline D-6 requires that studies be conducted to assess impacts where sensitive land uses are proposed within the Potential Area of Influence of an industrial facility. This report is intended to fulfill this requirement.

The D-series guidelines reference previous versions of the air quality regulation (Regulation 346). However, the D-Series of guidelines are still active, still represent current MECP policy and are specifically referenced in numerous other current MECP policies. In applying the D-series guidelines, the current policies, regulations, standards, and guidelines have been used (e.g., Regulation 419).

3.3.3 Recommended Minimum Separation Distances

Guideline D-6 also *recommends* that no sensitive land use be placed within the Recommended Minimum Separation Distance. However, it should be noted that this is a recommendation only. Section 4.10 of the Guideline allows for development within the Recommended Minimum Separation Distance, in cases of redevelopment, infilling, and transitions to mixed use, provided that the appropriate studies are conducted and that the relevant air quality and noise guidelines are met.

4.0 Nearby Industries

The Guideline D-6 Separation distances from the Project site are shown in **Figure 3a and Figure 3b**. SLR personnel conducted site visits to the area on September 14, and 30, 2022. Local industries within 1 km of the Project site were inventoried. The lands surrounding the Project site are generally compromised of commercial, residential, and employment uses.

In Ontario, facilities that emit significant amounts of contaminants to the environment are required to obtain and maintain an Environmental Compliance Approval ("ECA") from the MECP or submit an Environmental Activity and Sector Registry ("EASR"). ECAs/ EASRs within 1 km of the site were obtained from the MECP *Access Environment* website[2].

Table 3 lists the identified industries within 1000 m of the Project site and within their applicable Area of Influence. A more detailed table of all industries within 1000 m is provided in **Appendix C.** Industries which lie within their applicable Area of Influence in respect to the Project are discussed further below.

Table 3: Identified Industries Within the Potential Area of Influence of the Project Site

Facility	Type of Operation	Environmental Compliance Approval No.	Industry Class	Area of Influence Dist. (m)	Actual Distance to Site (m)	Additional Assessment Required?
Cytec Canada Inc.	Phosphine & phosphine derivatives manufacturing facility	9547-C5ULRS	Class III	1000	850	Yes
Dan's Produce	Produce Wholesaler	N/A	Class I (Air Quality) Class II (Noise)	300	75	Yes

The industries listed above are identified inside the Potential Area of Influence and, therefore, require additional assessment. All other industries, detailed in **Appendix C**, are outside of their respective Guideline D-6 Area of Influence and, therefore, are anticipated to be compatible with the proposed Project site development.

4.1 Class III Heavy Industries

The area within 1 km of the Project site was reviewed. As shown in **Figure 3b**, there is one class III Heavy industries within 1 km of the Project site.

4.1.1 Cytec Canada Inc.

Address:	9061 GARNER ROAD
Contacts:	N/A
Distance to Project Site:	850 M
D-6 Classification:	III

Cytec is a chemical manufacturing facility located approximately 850 m south of the Project site. Cytec is a phosphine and phosphine derivatives facility, consisting of processes and support units including phosphine plant including derivatives section, purification, mixing and packaging, and a research and development pilot plant. The Facility is permitted to produce 40,000 tonnes of phosphine based chemicals per year, and operates under MECP ECA Number 9547-C5ULRS, dated February 3, 2022. Copies of the MECP permit are in **Appendix D.**

Cytec is a major chemical manufacturing facility that has been operating in Niagara Falls for over 100 years.

On September 14, and 30, 2022, and August 17, 2023, SLR personnel conducted site visits to the area. During the site visit no odours, visible dust, or noise was observed at the facility.

Based on the size and nature of the facility operations, Cytec is considered a Class III Heavy Industry under MECP Guideline D-6, with a Recommended Minimum Separation Distance of 300 m and a Potential Area of Influence of 1000 m. The Project site lies outside of the Recommended Minimum Separation Distance, but within the Potential Area of Influence. Therefore, additional assessment is warranted and provided in subsequent sections of this report.

4.2 Class II Medium Industries

The area within 300 m of the Project site was reviewed. As shown in **Figure 3b**, there is one class II Medium Industry within 300 m of the Project site.

4.2.1 Dan’s Produce

Address:	7201 Beechwood Rd
Contacts:	N/A
Distance to Project Site:	75 M
D-6 Classification:	II

Dan’s Produce is a produce wholesaler located 75 m northwest of the Project site. The facility operates refrigeration trucks for the shipping and receiving of produce. A search of the MECP registry did not yield a permit or registration for this site.

On September 14, September 30, 2022, and August 17, 2023 SLR personnel conducted site visits to the area. No odours, visible dust, was observed at the facility at the time of the site visit. Noise from idling refrigeration trucks was observed.

From a noise perspective Dan's Produce is a Class II Medium Industry with a 300 m Potential Area of Influence because of the use of refrigeration trucks on site. From an air quality perspective, the facility is considered a Class I Light Industry with a 70 m Potential Area of Influence. As the Project site is 75 m from the facility, further assessment is only required from a noise perspective. Further assessment is provided in **Section 6** of this report.

4.3 Future Uses and Vacant Lots

On July 17, 2023, Matt Kernahan, the planner for the Project site, confirmed with the City of Niagara Falls that there are no active development applications for industrial uses in the vicinity of the Project site. A copy of the confirmation email is provided in **Appendix F.**

Regardless, the potential exists for existing industries to develop or turn over; therefore SLR completed a review of City of Niagara Falls Zoning By-law No. 79-200 Chapter applicable to Permitted Uses of Light Industrial (LI) and Heavy Industrial (HI), and have classified the uses in accordance with the MECP D-6 Guidelines.

4.3.1 Light Industrial land Uses

Under the City's zoning by-law, the following uses would be allowed in an LI zoning:

Table 4: D-6 Classification of City of Niagara Falls Zoning By-law No. 79-200 Light Industrial LI - Permitted Uses

Land Use	Type of Operation	Industry Class	Area of Influence Distance (m)	Recommended Minimum Separation Distance (m)
Manufacturing	Classification depends on intensity. Given prohibitions listed, expected to be a Class I i industry. MECP Permits required for emissions to atmosphere	I or II	70 or 300	20 or 70
Car rental	N/A	N/A	N/A	N/A
Car wash	Typically, a Class I industry. MECP Permits required for emissions to atmosphere	I	70	20
Carpenter shop	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	I or II	70	20
Cold Storage plant	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	I or II	70	20
Commercial bakery	Classification depends on intensity. Given surrounding land uses expected to be a Class I or Class II industry. MECP Permits required for emissions to atmosphere	I or II	70	20

Land Use	Type of Operation	Industry Class	Area of Influence Distance (m)	Recommended Minimum Separation Distance (m)
Commercial printing and associated services establishment	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	I or II	70	20
Contractor's or tradesman's shop, Contractor's or construction equipment rental shop	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	II	300	70
Consulting engineering office	Self-contained minimal air/noise emissions	I	70	20
Grain and feed mill and storage	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	I or II	70	20
Ice manufacturing plant	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	I or II	70	20
Laboratory - experimenting, commercial or testing	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	I or II	70	20
Laundry plant	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	I or II	70	20
Machine shop	N/A	N/A	N/A	N/A
Monument, stone, clay or glass manufacturing plant	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	I or II	70	20
New Car Agency	N/A	N/A	N/A	N/A
Nursery for trees, shrubs, plants	Self-contained minimal air/noise emissions	I	70	20

Land Use	Type of Operation	Industry Class	Area of Influence Distance (m)	Recommended Minimum Separation Distance (m)
Public garage, auto body	Typically, a Class I industry. MECP Permits required for emissions to atmosphere	I	70	20
Public garage, mechanical	Typically, a Class I industry. MECP Permits required for emissions to atmosphere	I	70	20
Shop for the repair and servicing of goods, machinery and equipment	Typically, a Class I industry. MECP Permits required for emissions to atmosphere	I	70	20
Silver plating and cutlery plant	Classification depends on intensity. Given surrounding land uses expected to be a Class I industry. MECP Permits required for emissions to atmosphere	I or II	70	20
Trucking or shipping terminal	Typically, a Class I industry. MECP Permits required for emissions to atmosphere	I	70	20
Used car lot	N/A	N/A	N/A	N/A
Warehouse	Self-contained minimal air/noise emissions	I	70	20
Wholesale establishment	Self-contained minimal air/noise emissions	I	70	20
Winery	Self-contained minimal air/noise emissions	I	70	20
Adult entertainment parlour	N/A	N/A	N/A	N/A
Body-rub parlour	N/A	N/A	N/A	N/A
An office which is an accessory use to one of the foregoing permitted uses	N/A	N/A	N/A	N/A

Based on the above assessment, industry classifications in the LI land use category included Class I Light Industries and Class II Medium Industries. The worst-case Recommended Minimum Setback Distance is 70 m. The nearest LI zoned lands are located approximately 20 m west of the Project site and adjacent along the south side of the Project Site.

If a new industrial operation were to relocate or construct a new facility, these new facilities would be required to obtain an approval from the MECP (either EASR or ECA). In accordance with the MECP permit, the facility would be required to meet the applicable guidelines of O. Reg 419/05 at the facility property line and to meet the applicable requirements of MECP NPC 300. As part of the permitting process, the facility would be required to meet applicable guidelines at existing and approved residential locations. As such, no additional assessment of the LI zoned vacant lands is required.

4.3.2 Heavy Industrial Land Uses

Approximately 162 m south of the Project site, the land is zoned Heavy Industrial ("HI").

Although currently vacant, SLR completed a review of City of Niagara Falls Zoning By-law No. 79-200 Chapter applicable to Permitted Uses of HI zoning and have classified the uses in accordance with the MECP D-6 Guidelines.

Table 5: D-6 Classification of City of Niagara Falls Zoning By-law No. 79-200 Heavy Industrial HI - Permitted Uses

Land Use	Type of Operation	Industry Class	Area of Influence Distance (m)	Recommended Minimum Separation Distance (m)
Manufacturing, compounding, processing, packaging, crating, bottling, assembling of raw or semi-processed or fully processed materials	Classification depends on intensity. Typically Class I or II industry. MECP Permits required for emissions to atmosphere	I or III	300 m to 1000 m	70 m to 300 m
Abattoir and stock yard used in connection with an abattoir	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Acetylene gas manufacture	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Artificial abrasive plant	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Caustic manufacture	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Cement manufacture	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m

Land Use	Type of Operation	Industry Class	Area of Influence Distance (m)	Recommended Minimum Separation Distance (m)
Cleaning, curing, storage or tanning of fresh or green hides	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Fertilizer processing plant	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Lime, plaster of paris manufacture	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Poultry processing plant	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Iron and steel plant	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Lime kiln	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Rubber factory	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Soap manufacture	Classification depends on intensity. Typically Class II industry. MECP Permits required for emissions to atmosphere	II	300 m	70 m
Steel furnace, blooming or rolling mill	Classification depends on intensity. Typically Class III industry. MECP Permits required for emissions to atmosphere	III	1000 m	300 m
Winery	Classification depends on intensity. Typically Class II industry. MECP Permits required for emissions to atmosphere	II	300 m	70 m
Accessory Office to HI uses	N/A	N/A	N/A	N/A

Based on the above assessment, industry classifications in the HI land use category included Class II Medium Industries or Class III Heavy Industries. The worst-case Recommended Minimum Setback Distance is 300 m.

The nearest HI zoned lands are located approximately 162 m south of the Project site.

The lands designated Development Holding ("DH") permit residential development. These lands are located approximately 75 m from the lands zoned HI. The DH zoned lands are closer to the HI zoned lands than the Project site.

If a new industrial operation were to relocate or construct a new facility, these new facilities would be required to obtain an approval from the MECP (either EASR or ECA). In accordance with the MECP permit, the facility would be required to meet the applicable guidelines of O. Reg 419/05 at the facility property line and to meet the applicable requirements of MECP NPC 300 at the DH-zone lands. As part of the permitting process, the facility would be required to meet applicable guidelines at existing and approved residential locations. If the guidelines are met at these locations, then they will be met at the proposed development. No additional assessment of the HI zoned vacant lands is required.

4.4 Summary

From the list of industries identified in **Section 4**, one class III Heavy Industry and one Class II Medium Industry are identified within the Potential Area of Influence and require further analysis:

- Cytec Canada Inc.; and
- Dan's Produce.

Comments and findings related to the compatibility between the proposed development and the above noted identified industrial facilities are provided below.

5.0 Air Quality, Dust and Odour Assessment

5.1 Industrial Sources

5.1.1 Guidelines and Regulations

Within Ontario, facilities which emit significant amounts of contaminants to the environment are required to obtain and maintain an ECA from the MECP or submit an EASR. Facilities with an ECA/EASR should already meet the MECP guidelines for air quality contaminants at their property line.

5.1.2 Air Quality

Under O.Reg. 419/05, a facility is required to meet prescribed standards for air emissions at their property boundary line and any location off-site. The MECP does not require industries to assess their emissions at elevated points off-site if a receptor does not exist at that location. While the introduction of mid-rise or high-rise residential buildings could trigger a facility to re-assess compliance at new receptor locations, the introduction of new low-rise receptors does not introduce any new receptors, as the facility is already required to comply at grade-level at their property line.

5.1.2.1 Odour

There are a select few compounds that are provincially regulated from an odour perspective; however, there is no formal regulation with respect to mixed odours. Impacts from mixed odours produced by industrial facilities are generally only considered and regulated by the MECP in the presence of persistent complaints (ECO 2010).

The MECP released an updated Draft Guideline to address odour mixtures in Ontario May 4, 2021. At the time of preparation of this report, the Draft Guideline has not been finalized.3

The MECP assesses mixed odours, in Odour Units, following draft guidelines. One odour unit (1 OU) has been used as a default threshold. This is the concentration at which 50 % of the population will just detect an odour (but not necessarily identify/recognize or object to it). Recognition of an odour will typically occur between 3 and 5 odour units. The following factors may be considered:

- **Frequency** – How often the odour occurs. The MECP typically allows odours to exceed 1 OU with a 0.5 % frequency.
- **Intensity** – The strength of the odour, in odour units. 1 OU is often used in odour assessments in Ontario.
- **Duration –** How long the odour occurs.
- **Offensiveness** – How objectionable the odour is.
- **Location** – Where the odour occurs. The MECP assesses at odours where human activity is likely to occur.

5.1.2.2 Dust

Ontario Regulation 419/05 also provides limits for dust, including limits for suspended particulates and dust fall. Under Reg. 419/05, these air quality limits must be met at the property line and all points beyond. This is not changed by the addition of the Project site. That is to say, any existing mutual property line is already a point of reception for dust, and the limits must already be met at that location. The proposed does not share a mutual property line with any of the industries requiring assessment, so concentrations will be even lower.

5.1.2.3 Cumulative Assessments

Cumulative impact assessments, examining the combined effects of individual industries, or the combined effects of industry and roadway emissions, are generally not required. Neither the PPS, the D-Series of guidelines, Regulation 419/05, or the current MECP odour assessment protocols require an assessment of cumulative impacts.

Which is not to say that such assessments are never warranted; rather, the need to do so is considered on a case-by-case basis, depending on the nature and intensity of the industrial operation(s), and the nature of the pollutants released. Based on the types of pollutants released by the industries in this area, cumulative effects assessments are not warranted.

[3] https://prod-environmental-registry.s3.amazonaws.com/2021-03/Draft%20Odour%20Guidance.pdf

5.1.2.4 Local Meteorology

Pre-processed Regional Meteorological data was obtained from the MECP website to generate a wind rose. The surface wind data collected for Welland, Ontario, is from 1989 through 2018. The wind rose, as shown in Figure 4, represents the frequency of winds blowing from a certain wind direction. As can be seen in the wind rose, predominant winds are from the western and southwest quadrants, while winds from the north and southeast quadrants may be the least frequent.

5.1.3 Site Visits and Odour and Dust Observations

A site visit was conducted to the area on September 14, 2022, by SLR personnel to identify significant sources of air quality emissions and to identify any significant sources of odour, or dust in the area surrounding the Project site. During the site visit, the staff members observed existing industries from the sidewalks and other publicly accessible areas. Wind conditions during the site visit were noted as:

- September 14, 2022 Westerly winds, 15 km/h, 21 °C, 73 %RH

No odours or fugitive dust emissions were detected at the Project site during the site visit.

An additional site visit was completed on September 30, 2022, to assess potential emissions of noise and vibration. No odours or fugitive dust emissions were detected at the Project site during the site visit.

SLR completed a third visit to the Project site and surrounding area on August 17, 2023. During the site visit, the staff members observed surrounding operations from the sidewalks and other publicly accessible areas. Wind conditions during the site visit were noted as:

- August 17, 2023 north westerly winds, 20 km/h, 23 °C, 53 %RH

The results of this third site visit were consistent with the first two. No additional significant sources were identified.

There is no specific requirement in the MECP D-series guidelines or in a City of Niagara or Region of Niagara terms of reference for site visits to be completed in accordance with a land use compatibility assessment. Therefore the completion of three site visits exceed the MECP requirements and no additional site visits were undertaken.

5.1.4 Ministry of Environment, Conservation and Parks Facility Information

SLR recognizes that complaint history can be useful in evaluating land use compatibility.

A Freedom of Information (“FOI”) request related to the Cytec facility was filed with the MECP on July 7, 2022. On March 16, 2023, MECP advised that a third party submitted an appeal to the release of the requested documents. Additional documentation related to the status of the FOI is provided in **Appendix E**.

The Planner for the Project site also inquired with the City of Niagara Falls related to any complaints they may have received related to Cytec. The City has confirmed that no complaints have been received. Documentation related to correspondence with the City of Niagara Falls is provided in **Appendix F**.

5.1.5 Assessment of Potential Air Emissions

The following facility was identified as being within the Potential Area of Influence for their industrial classification and were identified to require additional review from an air quality perspective:

- Cytec Canada Inc.

Further discussion regarding the facility and potential air emissions is provided below.

All the other industries surrounding the Project site were outside of the Potential Area of Influence. Therefore, the development of the Project site is anticipated to be compatible with these facilities from an air quality perspective. In addition, emissions of dust, and/or odour at the Project are not anticipated. Further the Project site is not anticipated to limit the ability of these industries to obtain or maintain required MECP permits and approvals.

5.1.5.1 Cytec Canada Inc.

As discussed in Section 4.1.1, Cytec is a chemical manufacturing facility located approximately 850 m south of the Project site. Cytec is a phosphine and phosphine derivatives facility, consisting of processes and support units including phosphine plant including derivatives section, purification, mixing and packaging, and a research and development pilot plant. The Facility is permitted to produce 40,000 tonnes of phosphine based chemicals per year, and operates under MECP ECA Number 9547-C5ULRS, dated February 3, 2022. Copies of the MECP permit are in **Appendix D.**

On September 14 and 30 2022, and August 17, 2023, SLR personnel conducted site visits to the area. No odours, visible dust, or noise was observed at the facility at the time of the site visit. A 10m height restriction within 2 km of the phosphine storage at Cytec was previously codified in policy by the City in the first iteration of OPA 147. The restriction was to address an emergency management consideration. This policy has since been removed by the Region and replaced with a policy that requires the applicant to undertake a Risk Assessment to determine appropriate emergency management measures, if any, for residential development at the site. The applicable supporting documentation to this change is provided in **Appendix G**. Consistent with Guideline D-6. the Risk Assessment is a separate assessment requirement from the Compatibility Study.

The facility is required to operate and maintain in compliance with the requirements of their MECP permit. The MECP determines compliance at the property boundary, and any elevated receptor locations.

J.D. Barnes undertook a survey of existing residential uses within 2 km of the Cytec facility. The results are provided in **Appendix H**. Based on a review of the survey there are 36 residential uses located within 2 km of the Cytec facility. Thirty five of these existing residential uses are also located closer to the Cytec facility than the Project site.

The emissions from the existing tall stacks at Cytec were considered in this assessment. Buildings in the proposed development will have a maximum height of 4 storeys, with the majority being less than 3 storeys tall. The above noted 35 existing sensitive receptors will govern the Cytec compliance with O. Reg. 419/05, not the Project site. In other words, the Project site will not introduce a new condition related to environmental compliance for the Cytec facility.

Cytec is a Class III Heavy Industry with a potential 1000 m Area of Influence and a 300 m Recommended Minimum Separation Distance. The Project site is located approximately 850 m from the Cytec property boundary, more than 2.5 times the Recommended Minimum Separation Distance.

Based on a review of the facility ECA, the facility operates a number of pieces of air emission control equipment to prevent and manage air emissions in accordance with the MECP requirements. The equipment includes:

- Emergency flares; and
- Thermal oxidizers.

In addition to permitting the operation of the above equipment, the MECP has included a number of requirements for operating and maintaining equipment in order to minimize all fugitive emissions including potential emissions of odour and noise.

The permit also requires Cytec to develop a Best Management Practices Plan (BMPP) related to the operation of the emergency flares, and to undertake a Complaints Recording and Reporting program.

A wind frequency distribution diagram (a wind rose) is provided in **Figure 4**. Winds with the potential to direct air emissions from the Cytec Canada facility towards the Project site include winds from the south quadrants. Winds from this direction are predicted to occur less than 12% of the time.

The appropriate guideline for determining compatibility between the proposed development and nearby industrial land uses, including Cytec, is the MECP Guideline D-6. As discussed in Section 2.3.3 of the D-Series compatibility guidelines the *"guideline does not deal with emergency situations, such as process upsets, the breakdown or malfunction of technical controls and/or spills. These are dealt with through other practices and legislation.[4]"*

SLR did not review the Cytec Emergency Response Plan. A review of Emergency Response Plans are not typically part of Land Use Compatibility assessments. The planner for the Project site requested a copy of the Cytec Emergency Response Plan and was advised that it is confidential and not available for review outside of the City of Niagara Falls Fire Rescue and the Planning department. Under the new Risk Assessment policy, implemented by the Region, a separate risk management study will be completed for the development. This requirement is separate from the Compatibility Study requirements.

Based on the assessment completed, the Project site development is anticipated to be compatible with the Cytec facility from an air quality perspective. Emissions of dust, and odour at the Project site are not anticipated. Further, the Project site is not anticipated to limit the ability of Cytec to obtain or maintain required MECP permits and/or approvals. No mitigation measures or further study are required to address any air quality or noise impacts as none are anticipated based on the SLR assessment.

[4] https://www.ontario.ca/page/d-1-land-use-and-compatibility

5.2 Summary of Air Quality, Dust and Odour Conclusions and Recommendations

The potential for air quality emissions at the Project site, including dust and odour, have been assessed.

Based on the review completed, the Project site development is anticipated to be compatible with the surrounding land uses from an air quality perspective. The applicable air quality standards will be met. Impacts from fugitive emissions of dust and odour from local industries at the Project site are not anticipated. As a result, the Project site is not anticipated to limit surrounding existing or future industries and the ability to obtain or maintain required MECP permits or approvals.

6.0 Noise Assessment

6.1 Industrial (Stationary) Sources

6.1.1 MECP Publication NPC-300 Guidelines for Stationary Noise

The applicable MECP noise guidelines for new sensitive land uses adjacent to existing industrial commercial uses are provided in MECP Publication NPC-300. NPC-300 revokes and replaces the previous noise assessment guideline Publications LU-131 and NPC-205, which were previously used for evaluating noise impacts as part of Certificates of Approval / Environmental Compliance Approvals for industries granted by the MECP.

The new guideline sets out noise limits for two main types of noise sources:

- Non-impulsive, “continuous” noise sources such as ventilation fans, mechanical equipment, and vehicles while moving within the property boundary of an industry. Continuous noise is measured using 1-hour average sound exposures (L_{eq} (1-hr) values), in dBA; and
- Impulsive noise, which is a “banging” type noise characterized by rapid rise time and decay. Impulsive noise is measured using a logarithmic mean (average) level (L_{LM}) of the impulses in a one-hour period, in dBAI.

Furthermore, the guideline requires an assessment at, and provides separate guideline limits for:

- Outdoor points of reception (e.g., back yards, communal outdoor amenity areas); and
- Façade points of reception such as the plane of windows on the outdoor façade which connect onto noise sensitive spaces, such as living rooms, dens, eat-in kitchens, dining rooms and bedrooms.

The applicable noise limits at a point of reception are the higher of:

- The existing ambient sound level due to road traffic, or
- The exclusion limits set out in the guideline.

6.1.2 Application of the NPC-300 Guidelines

The stationary noise guidelines apply only to residential land uses and to noise-sensitive commercial and institutional uses, as defined in NPC-300 (e.g., schools, daycares, hotels). For the Project, the stationary noise guidelines only apply to the residential portions of the development, including individual residences and outdoor amenity areas.

6.1.3 Guideline Interpretation & Limit Summary

The development is located in a “Class 1” area with respect to the noise guidelines, due to persistent road traffic noise from McLeod Road during early morning/ late night hours, as, confirmed through site visits. The Class 1 area and Class 2 area guideline limits are provided in the following tables:

Table 6: NPC-300 Exclusion Limits for Non-Impulsive Sounds (L_{eq} (1-hr), dBA)

Time of Day	Class 1 Area		Class 2 Area	
	Plane of Windows of Noise Sensitive Spaces	Outdoor Points of Reception	Plane of Windows of Noise Sensitive Spaces	Outdoor Points of Reception
7 am to 7 pm	50	50	50	50
7 pm to 11 pm	50	50	50	45
11 pm to 7 am	45	45	45	n/a
Notes: n/a Not Applicable. Outdoor points of reception are not considered to be noise sensitive during the overnight period				

Table 7: NPC-300 Exclusion Limits for Impulsive Sounds (L_{LLM}, dBAI)

Time of Day	No. of Impulses in a 1-hour Period	Class 1 Area		Class 2 Area	
		Plane of Windows of Noise Sensitive Spaces	Outdoor Points of Reception	Plane of Windows of Noise Sensitive Spaces	Outdoor Points of Reception
7 am to 11 pm	9 or more	50	50	50	50
	7 to 8	55	55	55	55
	5 to 6	60	60	60	60
	4	65	65	65	65
	3	70	70	70	70
	2	75	75	75	75
	1	80	80	80	80
11 pm to 7 am	9 or more	45	n/a	45	n/a
	7 to 8	50	n/a	50	n/a
	5 to 6	55	n/a	55	n/a
	4	60	n/a	60	n/a
	3	65	n/a	65	n/a
	2	70	n/a	70	n/a
	1	75	n/a	75	n/a
Notes: n/a Not Applicable. Outdoor points of reception are not considered to be noise sensitive during the overnight period.					

The applicable guideline limits for infrequent events such as emergency generator set testing are +5 dB higher than the values above, and are evaluated separately from other noise sources.

Tables 6 and 7 above show that the only difference between the Class 1 Area and Class 2 Area guideline limits is a slight change in the outdoor amenity area sound level limit, between 7pm, and 11 pm. All other limits are identical. Therefore, while the Class 1 area sound level limits have been adopted in this assessment, the use of Class 2 limits would not affect the results.

6.1.4 Sources of Interest

Based on the information obtained from the site visits conducted on September 14 and 30, 2022, August 17, 2023, and the review of the aerial imagery, the significant sources of noise in the area of the Project site have been identified.

Dan's Produce

Direct discussions on operations with facility staff were conducted during the August 2023 site visit. Dan's Produce operations include the loading and unloading of refrigeration trucks.

The following information was used in the assessment:

- Only the three loading bays on the left side of the building are used for loading refrigeration trucks. The three bays on the right are for smaller vans with no refrigeration equipment.
- Loading of trucks/vans can occur before 7 am. Operating hours are 6 am to 5 pm.
- The facility only has staff to load one refrigeration truck at a time, but in a worst-case scenario they could have 3 idling / loading at once during the daytime, and 2 during worst-case night-time hours.
- Only 1 truck per hour would be expected to enter and leave the facility during a worst-case hour.

Loading and unloading was observed for several hours. No significant impulsive noises were observed.

A screening level noise model was prepared for Dan's Produce as follows:

Table 8: Modelled Stationary Noise Sources

Facility	Modelled Noise Sources

Dan's Produce
7201 Beechwood Road
	• Idling Refrigeration Trucks
	  ○ Three (3) units operating during the daytime period; and two (2) refrigeration trucks operating during the overnight period at 6 am; each modelled at a height of 3 m above grade
	• On-site truck movements
	  ○ One truck entering and leaving the site each hour.

Figure 5 shows the location of the above sources. Noise emission data used in the assessment can be found in **Appendix I**.

Cytec Canada Inc.

Cytec is a Class III Heavy Industry with a potential 1000m Area of Influence and a 300 m Recommended Minimum Separation Distance. The Project site is located 850 m from the Cytec property boundary, more than 2.5 times the Recommended Minimum Separation Distance. Noise from Cytec operations has been inaudible at the Proposed Development during all site visits; nor would SLR expect it to be audible, considering the distance and nature of their operations.

Cytec operates under MECP ECA Number 9547-C5ULRS and is required to comply with applicable noise criteria at existing noise sensitive receptors. There are intervening residential uses located in closer proximity to the Cytec lands than the proposed development.

Table 9: Cytec - Distances to Closest Existing Residences and Proposed Development

Receptor Area	Direction From Cytec Facility	Approximate Distance Cytec Property Line to Property Line of Closest Residence	Approximate Distance Closest Building on Main Cytec Facility to Closest Residence
Grassy Brook Road	South	100 m	200 m
Garner Road	North by Northeast	470 m	1,400 m
Thorold Townline	North by Northwest	30 m	1,200 m
Proposed Development	North	850 m	1,700 m

The existing receptors are all 2 to 3 storeys in height. Based on a review of aerial photography, there are no purpose-built noise barriers on the Cytec site used for noise mitigation. Regardless, given the multi-kilometer separation distances between sources and receivers, atmospheric effects would limit to no more than 5 dB, regardless of receptor height (per the ISO 9613-2 standard).

As such, despite slightly higher residences being proposed, sound levels at development receptors will not be higher than those at existing, closer residences. As the Class 1 Area noise guideline limits are met at these locations, they will also be met at the proposed development.

As per Cytec's existing regulatory requirements to comply at the existing residential lands, a detailed assessment is not required from a noise perspective.

6.1.5 Ambient Roadway - Background Sound Level

During the site visits, it was observed that the acoustic environment surrounding the Project site is dominated by the roadway noise from McLeod Road. As NPC-300 allows for the higher of the existing ambient sound level or the exclusion limits, an assessment of roadway ambient noise levels was completed.

Existing AADT counts for McLeod Road were obtained from the project's traffic consultant, R.V. Anderson Associates Ltd.

Ambient sound level from road traffic noise were modelled to determine the applicable noise guideline limits at 6 am and during the daytime (7 am to 5 pm period). Ambient sound levels were predicted using Cadna/A, a commercially available noise propagation modelling software. Roadways were modelled as line sources of sound, with sound emission rates calculated using ORNAMENT algorithms, the road traffic noise model of the MECP. These predictions were validated and are equivalent to those made using the MECP's ORNAMENT or STAMSON v5.04 road traffic noise models.

Ambient measurements were recorded from 6 am to 7 am on August 17, 2023. The measurements are consistent with the ambient noise modelling.

Traffic data used in the analysis are provided in the following table:

Table 10: Summary of Road Traffic Data Used in the Analysis of Ambient Sound Levels

Roadway Link	Existing Traffic Volume (AADT)	Volume Split in Worst-Case Quietest Hour[1]		% Commercial Traffic Breakdown [1]		Vehicle Speed (km/h)
		Night-time (6am)	Daytime (7am)	Medium Trucks	Heavy Trucks	
McLeod Road	5750	2.0%	4.3%	7.0	4.0	60

Notes:
[1] Based on a typical arterial roadway traffic distribution.

The corresponding Class 1 Area guideline limits (the higher of the predicted ambient sound levels and 50 dBA during the day, 45 dBA at night) are shown in Figure 6. The closest blocks to Dan's Produce have elevated noise guideline limits.

6.1.6 Noise Modelling and Results

Noise impacts from the adjacent industry were predicted to the Project site using Cadna/A, a computerized version of the internationally recognized ISO 9613-2 noise propagation algorithms. This is the preferred noise modelling methodology of the MECP. The ISO 9613 equations account for:

- Source to receiver geometry
- Distance attenuation
- Atmospheric absorption
- Reflections off of the ground and ground absorption
- Reflections off of vertical walls
- Screening effects of buildings, terrain, and purpose-built noise barriers (noise walls, berms, etc.).

The following additional parameters were used in the modelling, which are consistent with providing a conservative (worst-case) assessment of noise levels:

- Temperature: 10°C
- Relative Humidity: 70%
- Ground Absorption G: G = 0.5 as default global parameter.

- Reflection: An order of reflection of 1 was used (accounts for noise reflecting from walls)
- Wall Absorption Coefficients: Set to 0.37 (37 % of energy is absorbed, 63% reflected)
- Terrain: Assumed to be flat

The analysis assumed a three storey (10 m) maximum height for all freehold residential units. Single detached and street towns were modelled with an assumed height of 10 m. The back-to-back town houses were assumed to be 12 m in height.

Predicted façade sound levels for stationary noise are shown on **Figure 7**. Overall predicted sound levels are provided in the following tables:

Table 11: Predicted Overall Façade Sound Levels – Normal Operations

Location[1]	Normal Operations				
	Predicted Sound Level L_{eq} (1-hr), dBA		Class 1 Guideline Limits L_{eq} (1-hr), dBA		Meets Class 1 Guidelines?
	Day	Night (6 am)	Day	Night (6 am)	
North Property Line Residences (Along McLeod Rd.)	49	47	50-63	45-59	Yes
East Property Line Residences	27	25	50-56	45-53	Yes
South Property Line Residences	30	28	50	45	Yes
West Property Line Residences (Along Beechwood Rd.)	50	50	50-55	45-52	Yes

Notes:
[1] Representative worst-case façades were selected to simplify the result summary. **Figure 7** shows the worst-case predicted façade sound levels for the development.

Based on the sound levels presented in **Table 11**, no excesses of the NPC-300 Class 1 guideline limits are expected at worst-case façades. Warning clauses and physical mitigation measures are not required.

6.1.7 Outdoor Living Areas

Backyard OPORs are planned for majority of the lots in the development, and there is a park located on the southwest corner of the Project site. For the townhouse blocks along McLeod Road and Beechwood Road, designated outdoor amenity areas will be located on the side of the building opposite McLeod Road. Representative worst-case OPORs were selected for assessment.

Any private terraces and balconies included in the townhouse blocks are expected to be less than 4 m in depth, and do not meet the minimum requirements for inclusion under the definitions in NPC-300.

The locations of the assessed OLAs are shown on **Figure 7**, OPOR sound levels for each block are summarized in the table below**.**

Table 12: Predicted Overall OPOR Sound Levels – Normal Operations

Amenity Area	Predicted Unmitigated Sound Level L_{eq} (1-hr), dBA	Class 1 Guideline Limit [1] L_{eq} (1-hr), dBA	Meets Class 1 Guideline?	Warning Clause / Noise Mitigation Measure
Worst-Case OPORs	8- 48	50-58	Yes	None

Notes:
[1] Representative worst-case OLAs were selected to simplify the result summary. **Figure 7** shows the predicted worst-case OLA sound levels for the Project site.

Based on the sound levels presented in **Table 12**, no excesses of the NPC-300 Class 1 guideline limits are expected at worst-case OLAs. Warning clauses and physical mitigation measures are not required.

6.2 Transportation Sources

6.2.1 Transportation Noise Sources

Roadway noise sources with the potential to produce noise at the proposed development include McLeod Road. The traffic volumes for Beechwood are insignificant.

Sound exposure levels at the proposed development due to road traffic have been predicted and this information has been used to identify façade, ventilation and warning clause requirements.

6.2.2 MECP Publication NPC-300 Guidelines for Transportation Sources

Indoor Criteria

The following table summarizes the criteria in terms of energy equivalent sound exposure (L_{eq}) levels for specific indoor noise-sensitive locations. These indoor criteria vary with sensitivity of the space. As a result, sleeping areas have more stringent criteria than Living / Dining room space.

Table 13: NPC-300 Sound Level Criteria for Road and Rail Noise

Type of Space	Time Period	Energy Equivalent Sound Exposure Level L_{eq} (dBA) [1]		Assessment Location
		Road	Rail [2]	
Living / Dining Room	Daytime (7 am to 11 pm)	45	40	Indoors
	Night-time (11 pm to 7 am)	45	40	Indoors
Sleeping Quarters	Daytime (7 am to 11 pm)	45	40	Indoors
	Night-time (11 pm to 7 am)	40	35	Indoors

Notes:
[1] Road and Rail noise impacts are to be combined for assessment of impacts.
[2] Whistle/warning bell noise is excluded for OLA noise assessments and included for indoor assessments, where applicable.

Ventilation and Warning Clauses

The following table summarizes requirements for ventilation where windows potentially would have to remain closed as a means of noise control. Despite the implementation of ventilation measures where required, some occupants may choose not to use the ventilation means provided, and as such, warning clauses advising future occupants of the potential excess over the indoor guideline limits are required.

Table 14: NPC-300 Ventilation and Warning Clause Requirements

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - Leq (dBA)		Ventilation and Warning Clause Requirements [2]
		Road	Rail [1]	
Plane of Window	Daytime (7am to 11pm)	≤ 55		None
		56 to 65 incl.		Forced Air Heating with provision to add AC +Applicable Warning Clause(s)
		> 65		Central AC + Applicable Warning Clause(s)
	Night-time (11pm to 7am)	51 to 60 incl.		Forced Air Heating with provision to add AC+ Applicable Warning Clause(s)
		> 60		Central AC + Applicable Warning Clause(s)
Notes: [1] Whistle/warning bell noise is excluded. [2] Road and Rail noise is combined for determining Ventilation and Warning Clause requirements				

Building Shell Requirements

The following table provides sound exposure (L_{eq}) thresholds which, if exceeded, require the building shell and components (i.e., wall, windows) to be designed and selected accordingly to ensure that the indoor location criteria are met.

Table 15: NPC-300 Building Component Requirements

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - L_{eq} (dBA)		Component Requirements
		Road	Rail [1]	
Facade	Daytime (7am to 11 pm)	> 65	> 60	Designed/ Selected to Meet Indoor Requirements [2]
	Night-time (11 pm to 7 am)	> 60	> 55	
Notes: [1] Including whistle/warning bell noise. [2] The resultant sound isolation parameter from Road and Rail are to be combined for determining the overall acoustic parameter.				

Outdoor Sound Level Criteria

The following table summarizes criteria in terms of energy equivalent sound exposure (Leq) levels for the outdoor noise-sensitive locations, with a focus of outdoor areas being amenity spaces (called Outdoor Living Areas (OLAs) per NPC-300).

Table 16: NPC-300 Outdoor Sound Level Criteria for Road and Rail Noise

Type of Space	Time Period	Energy Equivalent Sound Exposure Level Leq (dBA) [1, 2]	Assessment Location
OLA	Daytime (0700-2300h)	60	Outdoors
Notes: [1] Excluding whistle/warning bell noise for OLA noise assessments. [2] Road and Rail noise impacts are to be combined for assessment of OLA impacts.			

Mitigation and Warning Clauses

The following table summarizes mitigation and warning clause requirements for outdoor amenity spaces.

Table 17: NPC-300 Outdoor Living Area Mitigation & Warning Clause Requirements

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - L_{eq} [1, 2] (dBA)	Mitigation and Warning Claus Requirements
OLA	Daytime (0700-2300h)	≤ 55	None
		56 to 60 incl.	Noise Control Measures may be applied, **and/or** Applicable Warning Clause(s)
		> 60	Noise barrier to reduce noise to 55 dBA, **or** Noise barrier to reduce noise to 60 dBA and Applicable Warning Clause(s)
Notes: [1] Whistle/warning bell noise is excluded. [2] Road and Rail noise is combined for determining Ventilation and Warning Clause requirements.			

As indicated in NPC-300, noise control measures may be applied to reduce sound levels to 55 dBA. If measures are not provided, potential purchasers/tenants are required to be informed of potential noise problems with the applicable Warning Clause(s).

If noise impacts are predicted to be greater than 60 dBA, noise control measures are required to reduce noise levels to 55 dBA. If noise control measures are not technically feasible for meeting 55 dBA, an excess of up to 5 dBA is allowed, with the inclusion of the applicable Warning Clause(s).

6.2.3 Traffic Data and Future Projections

Existing AADT counts for McLeod Road were obtained from the project's traffic consultant, R.V. Anderson Associates Ltd. The future 2044 AADT traffic volumes were predicted based on an annual growth rate of 1.0%, as provided by the traffic consultant for the project. Commercial vehicle percentages were also obtained from the traffic consultant. Day/night splits of 90%/10% were applied based on MECP default distributions.

Copies of applicable traffic data and calculations can be found in **Appendix J**. The following **Table 18** summarizes the road traffic volumes used in the analysis.

Table 18: Summary of Road Traffic Data Used in the Analysis

Roadway Link	2044 Traffic Volume (AADT)	% Day / Night Volume Split [1]		% Commercial Traffic Breakdown [1]		Vehicle Speed (km/h)
		Daytime	Night-time	Medium Trucks	Heavy Trucks	
McLeod Road	7157	90	10	7.0	4.0	60

Notes:
[1] The Day/Night splits determined from historic data at SLRs for urban areas and commercial vehicle breakdowns were supplied by traffic consultant.

6.2.4 Projected Sound Levels

Future road traffic sound levels at the proposed development were predicted using Cadna/A, a commercially available noise propagation modelling software. Roadways were modelled as line sources of sound, with sound emission rates calculated using ORNAMENT algorithms, the road traffic noise model of the MECP.

These predictions were validated and are equivalent to those made using the MECP's ORNAMENT or STAMSON v5.04 road traffic noise models. Validation files are included in **Appendix J**.

Sound levels were predicted along the façades of the proposed development using the "building evaluation" feature of Cadna/A. This feature allows for noise levels to be predicted across the entire façade of a structure.

Ground absorption for the surrounding area was considered reflective (G = 0), and the terrain is flat.

6.2.5 Façade Sound Levels

Total façade sound levels are shown on **Figure 8 and Figure 9,** for daytime and night-time sounds levels, respectively.

Overall worst-case predicted sound levels are provided in the following tables:

Table 19: Predicted Transportation Sound Levels at Facades

Location	Roadway Sound Levels	
	L_{eq} Day (dBA)	L_{eq} Night-time (dBA)
North Property Line Residences (Along McLeod Rd)	65	59
East Property Line Residences	60	53
South Property Line Residences	46	39
West Property Line Residences (Along Beechwood Rd)	59	52
Notes: [1] Façade locations are shown on Figure 8 (daytime) and Figure 9 (night-time), representative worst-case facades have been selected for this table. [2] The sound levels presented are the highest value predicted for the entire building.		

As the roadway induced sound levels are not predicted to exceed 65 dBA and 60 dBA during the daytime and night-time, respectively, an assessment of indoor sound levels is not required.

6.2.6 Outdoor Amenity Area Sound Levels

There are a number of communal outdoor amenity areas in the development. Worst case OLAs were selected for assessment, as shown on **Figure 10.** Predicted overall sound levels are provided in the following table for daytime impacts.

Table 20: Predicted Outdoor Amenity Area Sound Levels – Transportation Noise

Amenity Area	Predicted Unmitigated Sound Level (dBA)	Guideline Limit [1] (dBA)	Meets Guideline?	Warning Clause / Noise Mitigation Measure
Worst-case backyards	43-60	60	Yes [1]	Type A/ None
Notes: [1] Sound levels up to 60 dBA are allowed with the use of a Type A Warning Clause.				

6.2.7 Ventilation and Warning Clause Requirements

The triggers for requiring warning clauses are summarized in **Table 15**. Where required, the warning clauses should be included in agreements registered on Title for the residential units and included in all agreements of purchase and sale or lease, and all rental agreements. Warning clauses for the proposed development are summarized in **Appendix K** and locations are shown in **Figure 11**.

Based on the predicted façade noise levels, forced air heating with provisions for future installation of central air conditioning, and an MECP **Type C** warning clause, is recommended for all affected units with façade sound levels from road traffic between 56 and 65 dBA (inclusive) during the daytime, or between 51 and 60 dBA during night-time hours. This includes **Lots 85 to 86, and Blocks 188 to 198**.

Façade sound levels for **all units not listed above** of the building are below 56 dBA during the daytime and 51 dBA during the night-time; therefore, there are no ventilation or warning clause requirements.

An MECP **Type A** warning clause is recommended for units in **Lot 85, Blocks 188 to 189, and Block 198**.

6.3 Summary of Noise Conclusions and Recommendations

The potential for noise impacts on the Project site have been evaluated. Based on the results of our studies:

- Stationary noise impacts from the surrounding commercial and industrial facilities are predicted to meet NPC-300 Class 1 guideline limits on all façades as outlined in **Section 6.1**.
- No physical mitigation or warning clauses are required to address noise impacts from surrounding stationary noise sources.
- An assessment of transportation noise impacts from the surrounding roadways was completed. Upgraded glazing is not required within the development, as outlined in outlined in **Section 6.2.5.**
- Noise barriers are not required to mitigate transportation noise impacts at OLAs. However, An MECP Type A warning clause is recommended for **Lots 85-86, Blocks 188-189, and Block 198**.**214**. Warning clause text is included in **Appendix K.**
- Forced air heating and the provision for air conditioning and a **Type C** Warning Clause are recommended for **Lot 85, and Blocks 188 to 198**, as outlined in **Section 6.2.8**. Warning clauses are included in **Appendix K.**

7.0 Vibration Assessment

7.1 Industrial (Stationary) Sources

There are no existing or proposed industrial vibration sources such as large stamping presses or forges within 75 m of the Project site. Any future industries which may use significant vibration sources will be able to incorporate vibration isolation into their design. Under applicable MECP guidelines, a detailed vibration assessment is not required. Adverse impacts from industrial vibration are not anticipated.

7.2 Transportation Sources

As the closest railway corridor is located approximately 1500 m from the proposed development, a detailed vibration assessment is not required. Adverse impacts from transportation-related vibration are not anticipated, and a detailed assessment was not completed.

7.3 Summary of Vibration Conclusions and Recommendations

The potential for vibration impacts on and the proposed development have been considered. Based on the results of our studies adverse vibration impacts from industrial and transportation sources are not anticipated.

8.0 Conclusions

A compatibility/mitigation assessment has been completed, examining the potential for air quality, dust, odour, and noise and vibration impacts from surrounding roadways and nearby industrial land uses to affect the Project site.

The assessment has included a review of air quality and noise emissions from industrial facilities in the area.

Based on the review completed, the Project Site is anticipated to be compatible with the surrounding land uses from an air quality, noise and vibration perspective.

Noise and vibration emissions from surrounding industries have been reviewed. Noise and vibration emissions from the surrounding industries are predicted to meet the MECP Class 1 guidelines.

The potential for transportation noise on the development has also been reviewed. Upgraded glazing is not predicted to be required. Forced air heating and various warning clauses are required to address transportation noise, as outlined in **Section 6.2.7.**

The potential for vibration emissions on the proposed development have been assessed. Based on the results of our studies adverse vibration emissions from industrial and transportation sources are not anticipated.

Based on the above, the Project site is anticipated to be compatible with surrounding land uses, including industrial uses. The project will not affect the ability for industrial facilities to obtain or maintain their required Provincial environmental approvals or registrations, and to maintain compliance with applicable Provincial environmental policies, regulations, approvals, authorizations, and guidelines.

The requirements of MECP Guideline D-6, Regulation 419/05, and Publication NPC-300 are met. As the applicable policies and guidelines are met, the Project site is:

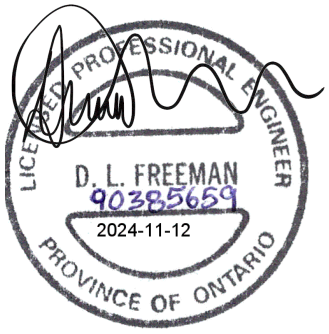
- Unlikely to result in increased risk of complaint and nuisance claims;
- Unlikely to result in operational constraints for the major facilities; and
- Unlikely to result in constraints on major facilities to reasonably expand, intensify or introduce changes to their operations.

9.0 Closure

Should you have questions on the above report, please contact the undersigned.

Regards,

SLR Consulting (Canada) Ltd.



Alice Najjar, B.A.
Air Quality Scientist
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Diane Freeman, P.Eng., FEC, FCAE
Principal, Air Quality
(Air Quality Only)

Dylan Diebolt, B.Sc.
Acoustics Consultant
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Principal Acoustics Engineer
(Noise and Vibration Only)

Distribution: 1 electronic copy – 800460 Ontario Ltd.

10.0 References

Environmental Commissioner of Ontario (ECO, 2010), Review of Posted Decision: Developing an Odour Policy Framework, April 2010.

City of Toronto Noise By-law, Municipal Code Chapter 591

International Organization for Standardization, (ISO, 1989), ISO 2631-2: 2003 (1989) Evaluation of human exposure to whole-body vibration — Part 2: Continuous and shock-induced vibrations in buildings (1 to 80 Hz)

National Research Council Canada (NRCC, 1985), Building Practice Note BPN 56: Controlling Sound Transmission Into Buildings

Ontario Ministry of the Environment, Conservation & Parks (MECP), 1989, ORNAMENT Ontario Road Noise Analysis Method for Environment and Transportation – Technical Document.

Ontario Ministry of the Environment, Conservation & Parks (MECP), 1993, Publication NPC-207: Impulse Vibration in Residential Buildings (Draft)

Ontario Ministry of the Environment, Conservation & Parks (MECP), 1993, Publication NPC-216: Residential Air Conditioning Devices

Ontario Ministry of the Environment, Conservation & Parks (MECP), 1994, Environmental Noise Guidelines for Installation of Residential Air Conditioning Devices

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1995), Guideline D-1: Land Use Compatibility

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1995), Guideline D-6: Compatibility Between Industrial Facilities and Sensitive Land Uses

Ontario Ministry of the Environment, Conservation & Parks (MECP, 2008), Technical Bulletin, Standards Development Branch, Methodology For Modelling Assessments Of Contaminants With 10-Minute Average Standards And Guidelines Under O. Reg. 419/05, September 2016

Ontario Ministry of the Environment, Conservation & Parks (MECP), 2013, Publication NPC-300: Environmental Noise Guideline: Stationery and Transportation Sources – Approval and Planning

Ontario Ministry of Municipal Affairs and Housing (MMAH, 2024). Provincial Planning Statement

Ontario Ministry of the Environment, Conservation & Parks (MECP, 2008), Technical Bulletin, Standards Development Branch, Methodology For Modelling Assessments Of Contaminants With 10-Minute Average Standards And Guidelines Under O. Reg. 419/05, April 2008.

Ontario Regulation 419/05 – Local Air Quality.

Figures

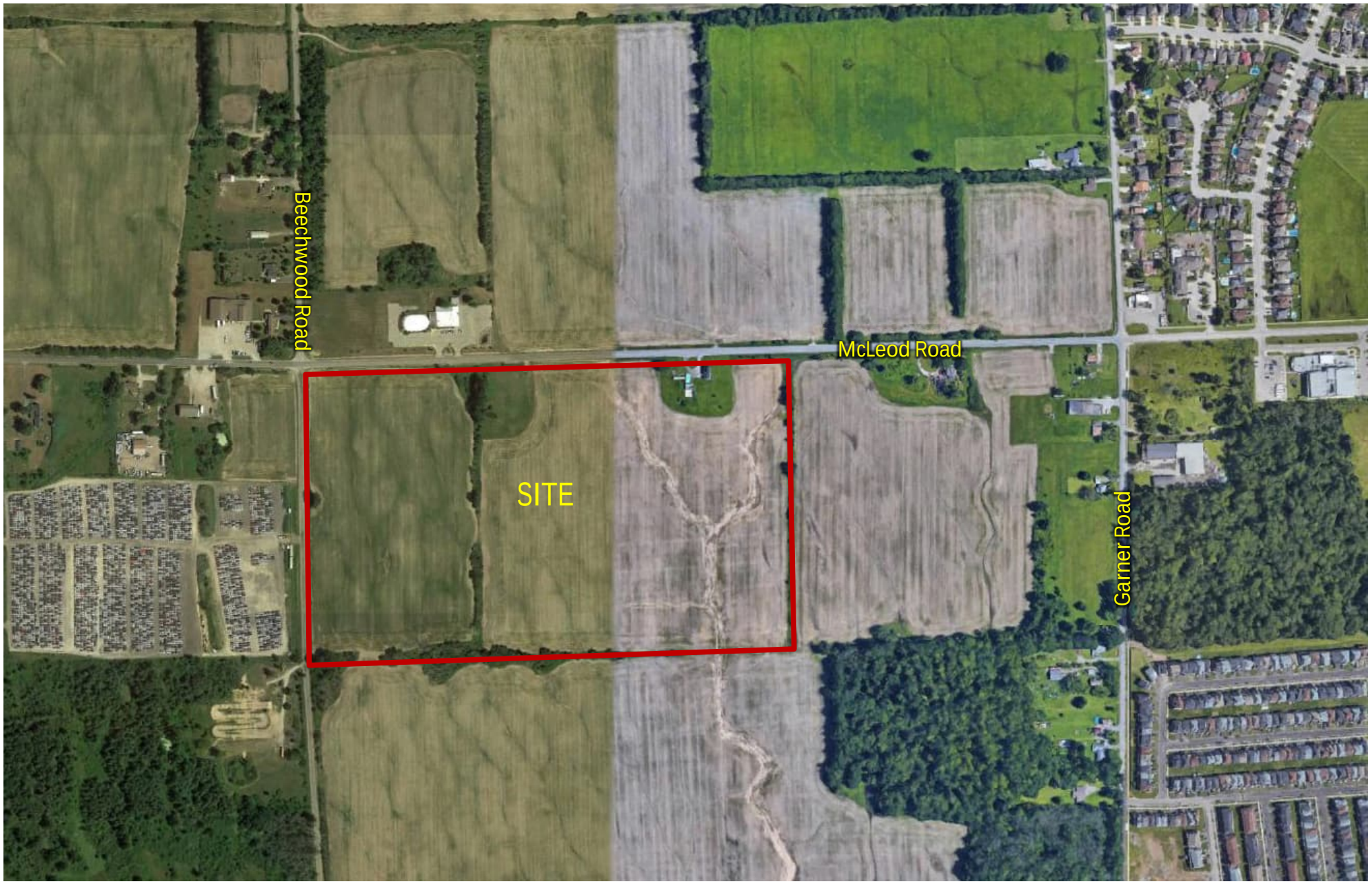
Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

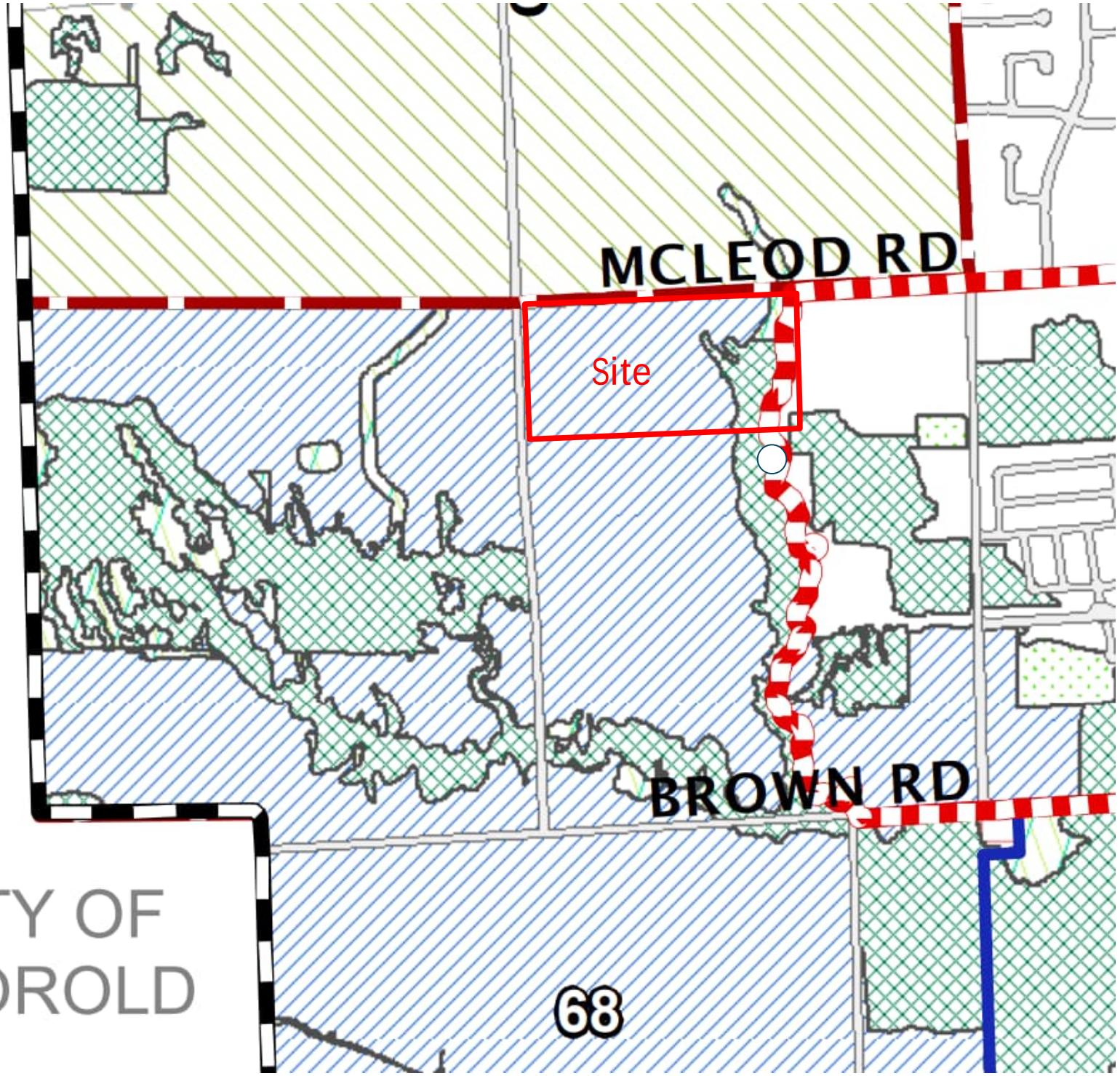
800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024



800460 ONTARIO LTD.	True North	Scale: 1:2,500	METRES	SLR
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Nov. 12, 2024 Rev 0.0	Figure No. **1**	
SITE AND CONTEXT PLAN		Project No. 241.30612.00000		



Legend

- Environmental Conservation Area
- Environmental Protection Area
- Extractive Industrial
- Good General Agriculture
- Industrial
- Major Commercial
- Minor Commercial
- Niagara Escarpment Plan Area
- Open Space
- Parkway Residential
- Residential
- Resort Commercial
- Theme Park Marineland
- Tourist Commercial
- Intake Protection Zone IPZ-1
- Secondary Plan Area
- Special Policy Area
- Urban Area Boundary

True North

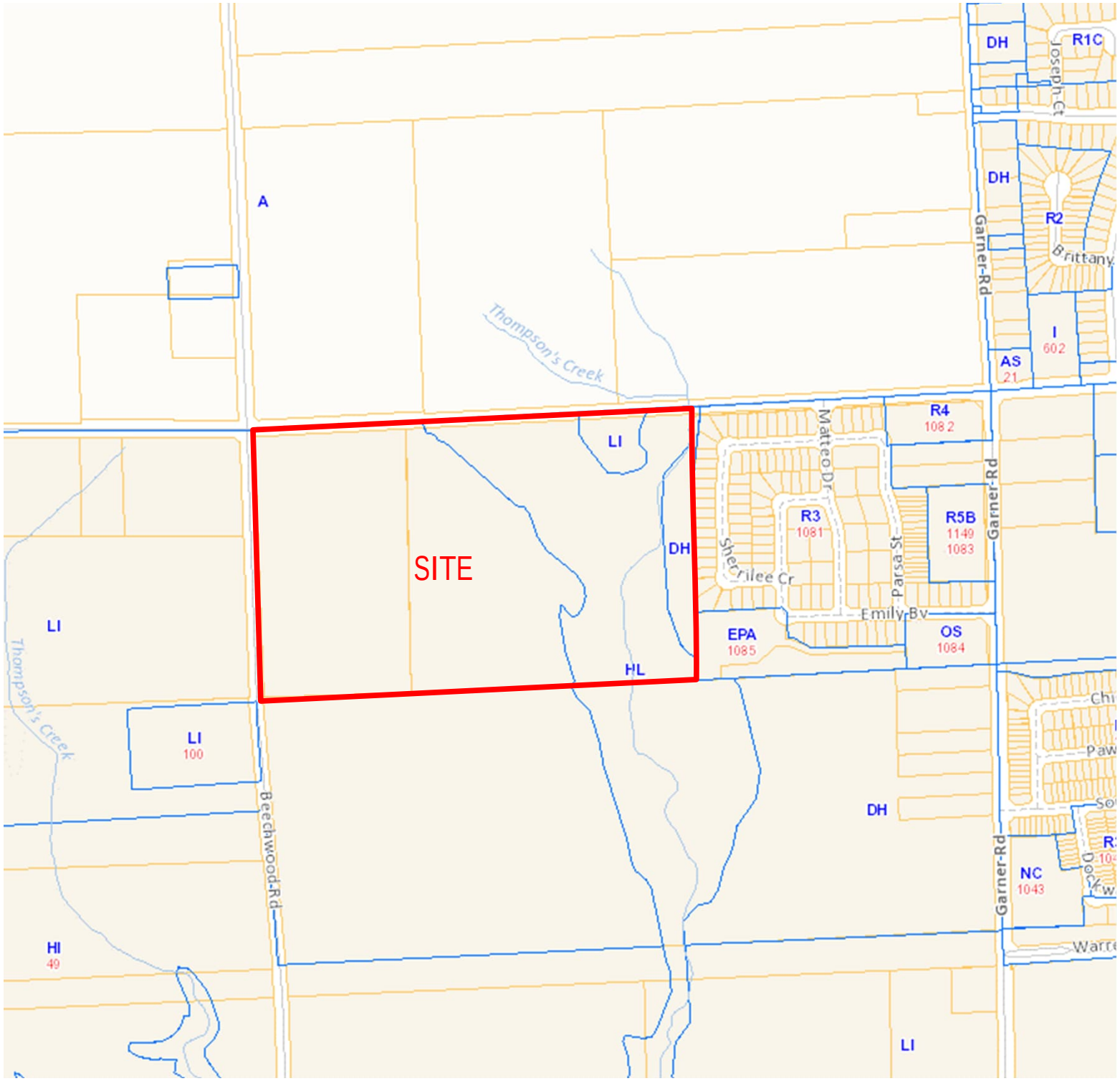
800460 ONTARIO LTD.

9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO

EXCERPT FROM SCHEDULE A TO THE OFFICIAL PLAN
https://niagarafalls.ca/pdf/planning/official-plan/schedule-a-future-land-use-plan.pdf

Scale: n/a		METRES
Date: Nov. 12, 2024	Rev 0.0	Figure No. **2a**
Project No. 241.30612.00000		

SLR



True North

800460 ONTARIO LTD.

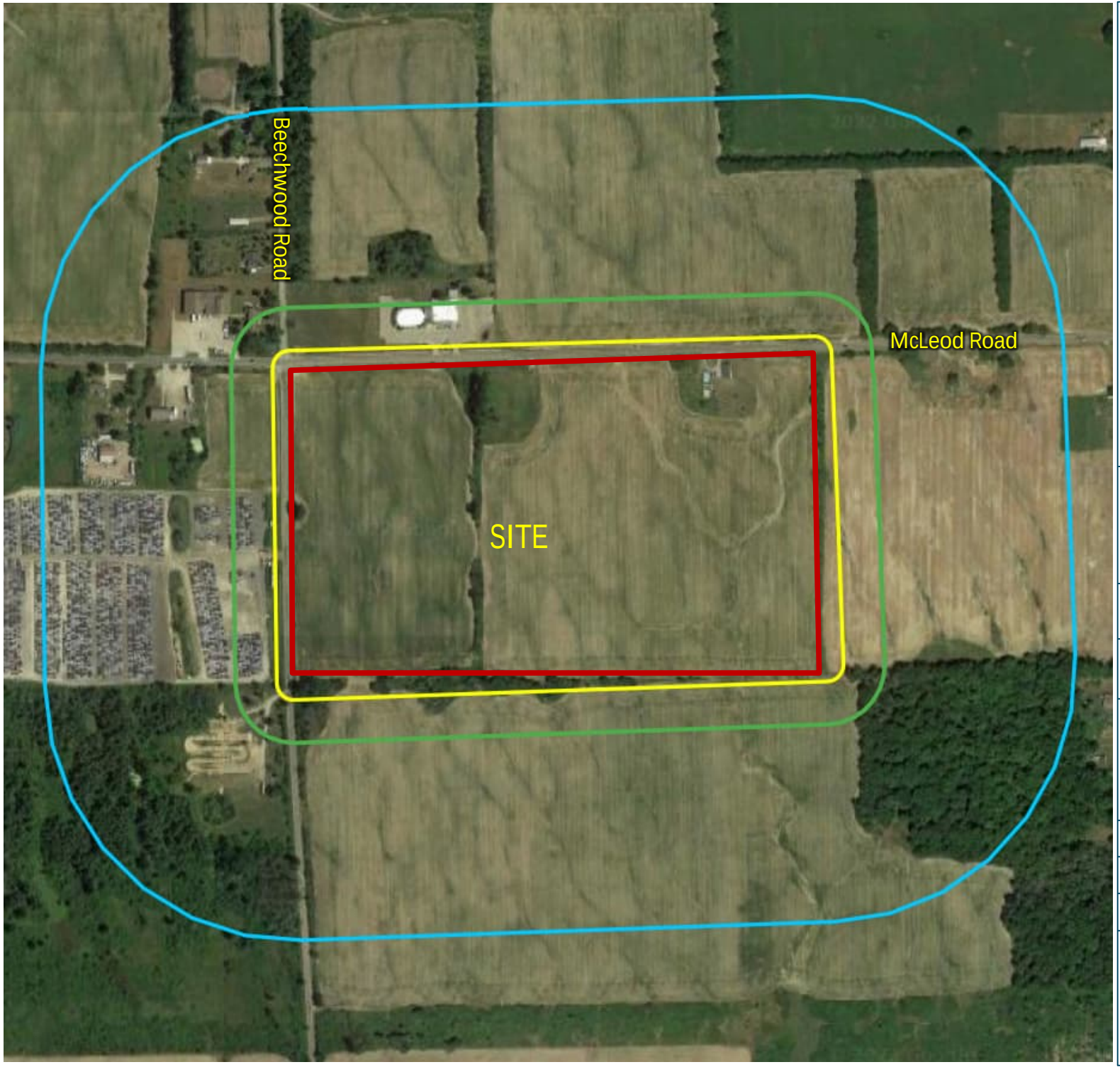
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO

EXCERPT FROM AREA ZONING MAP

Niagara Falls Zoning Maps

Scale:	n/a	METRES
Date: Nov. 12, 2024	Rev 0.0	Figure No. **2b**
Project No. 241.30612.00000		

SLR



20 m Separation

70 m Separation

300 m Separation

True North

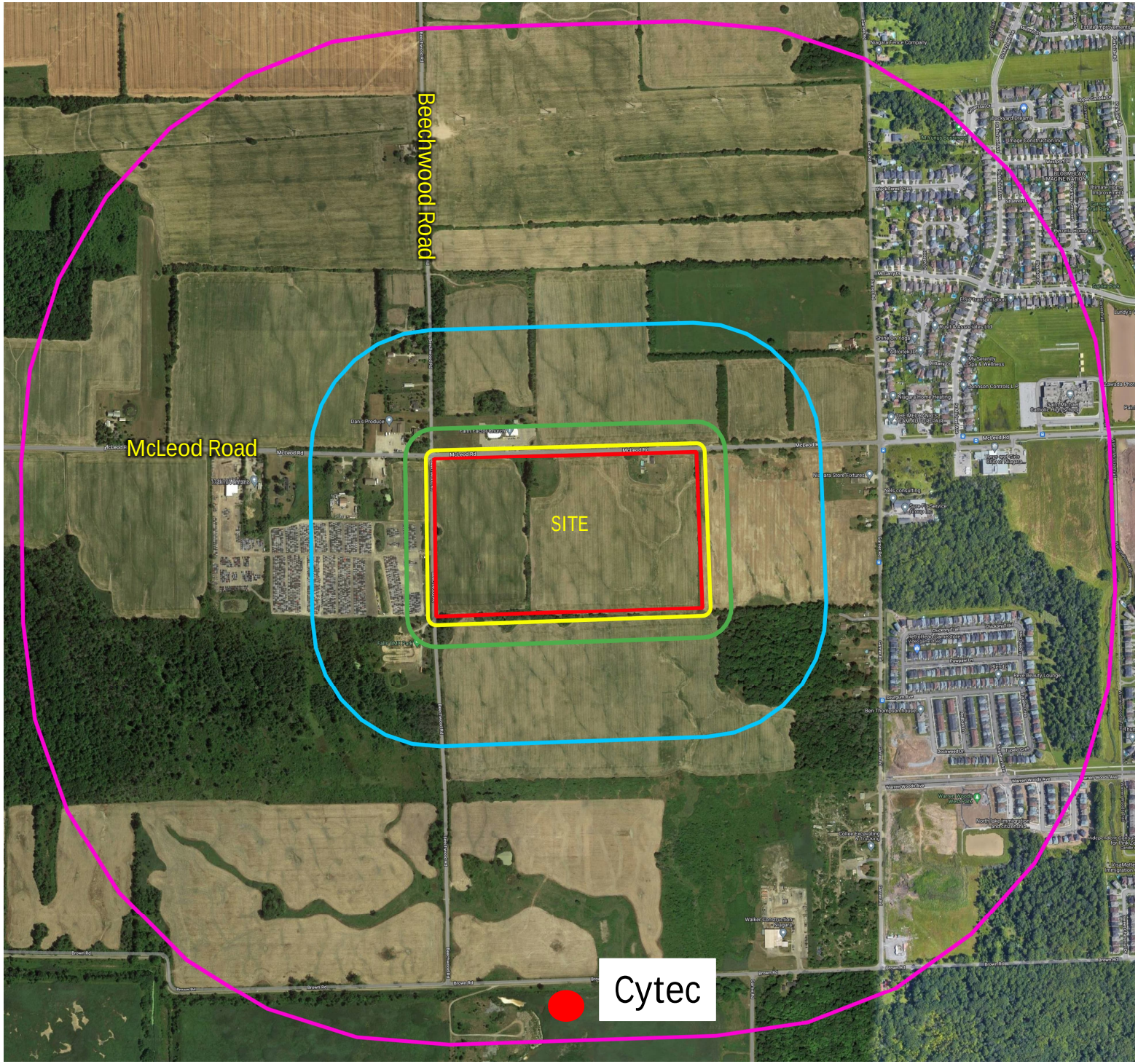
800460 ONTARIO LTD.

9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO

GUIDELINE D-6 SEPARATION DISTANCES TO 300 M

Scale: 1: 4,500		METRES
Date: Nov. 12, 2024	Rev 0.0	Figure No. **3a**
Project No. 241.30612.00000		

SLR



20 m Separation

70 m Separation

300 m Separation

1000 m Separation

True North

800460 ONTARIO LTD.

9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO

GUIDELINE D-6 SEPARATION DISTANCES TO 1000 M

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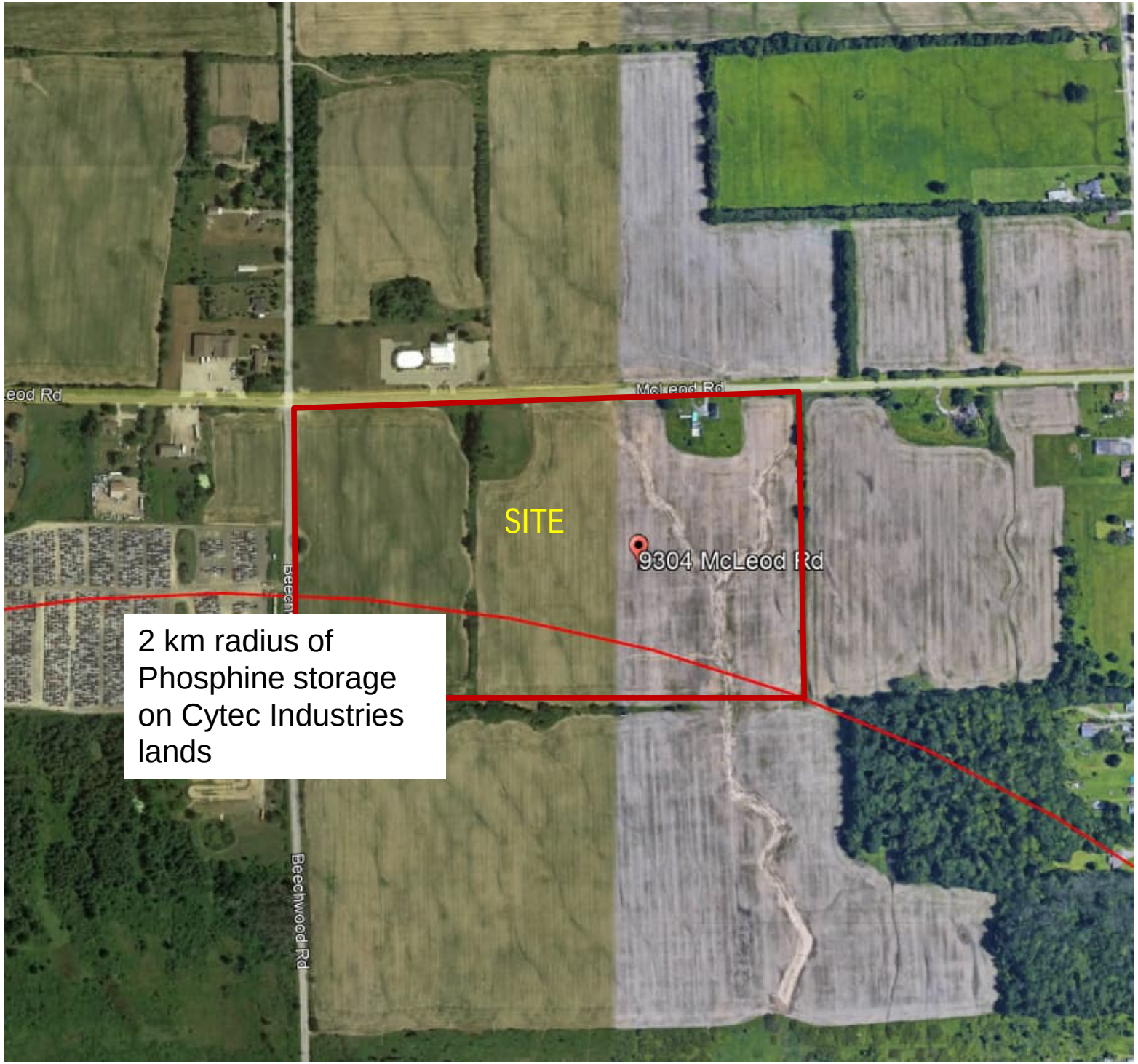
Date: Nov. 12, 2024	Rev 0.0	Figure No. **3b**
Project No. 241.30612.00000		

SLR



True North

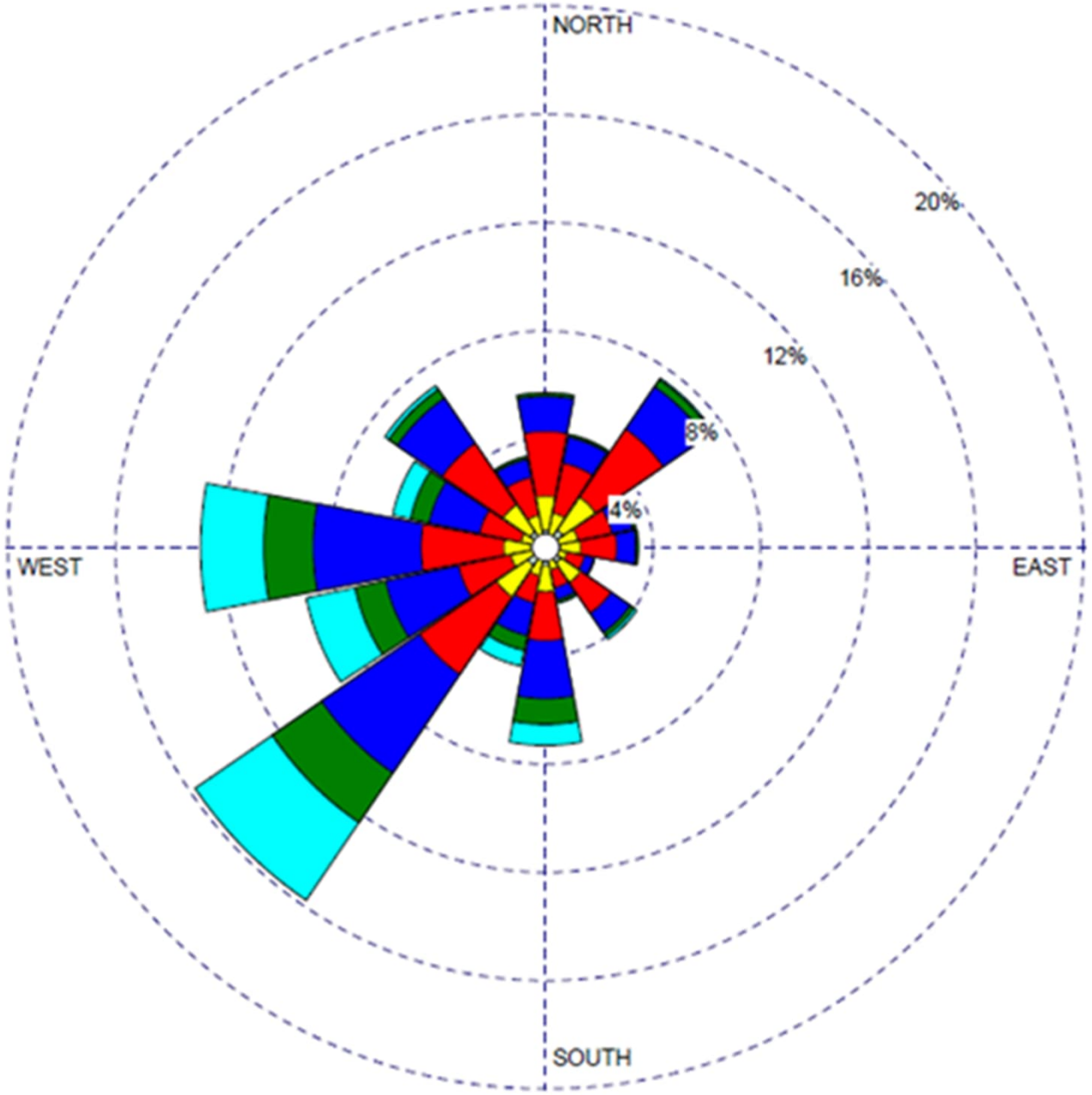
800460 ONTARIO LTD.

9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO

2 KM RADIUS OF PHOSPHINE STORAGE ON CYTEC INDUSTRIES LANDS

Scale: 1: 10,500		METRES
Date: Nov. 12, 2024	Rev 0.0	Figure No. **3b**
Project No. 241.30612.00000		

SLR



(Knots)

- >= 22
- 17 - 21
- 11 - 17
- 7 - 11
- 4 - 7
- 1 - 4

True North

800460 ONTARIO LTD.

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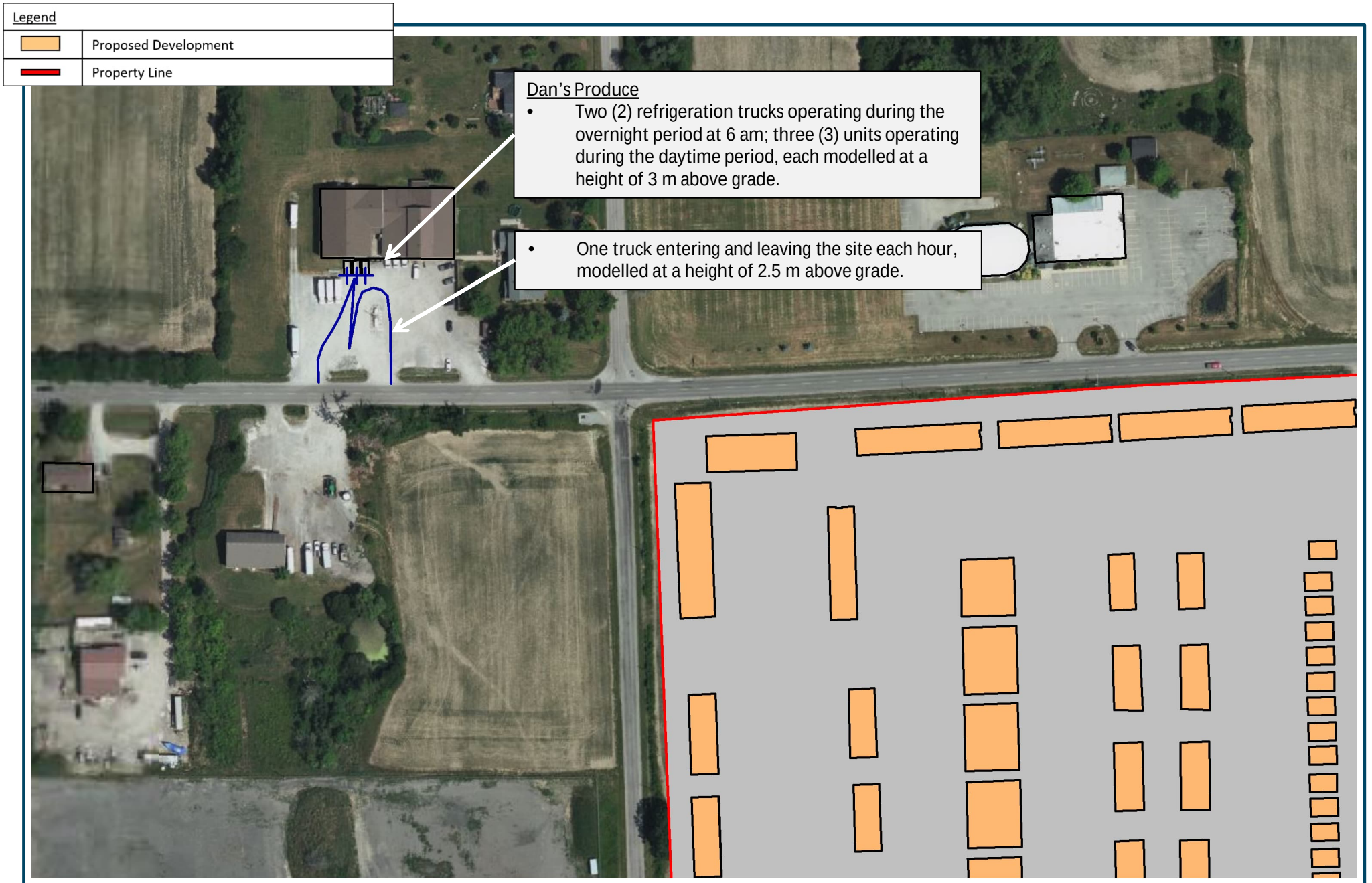
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO

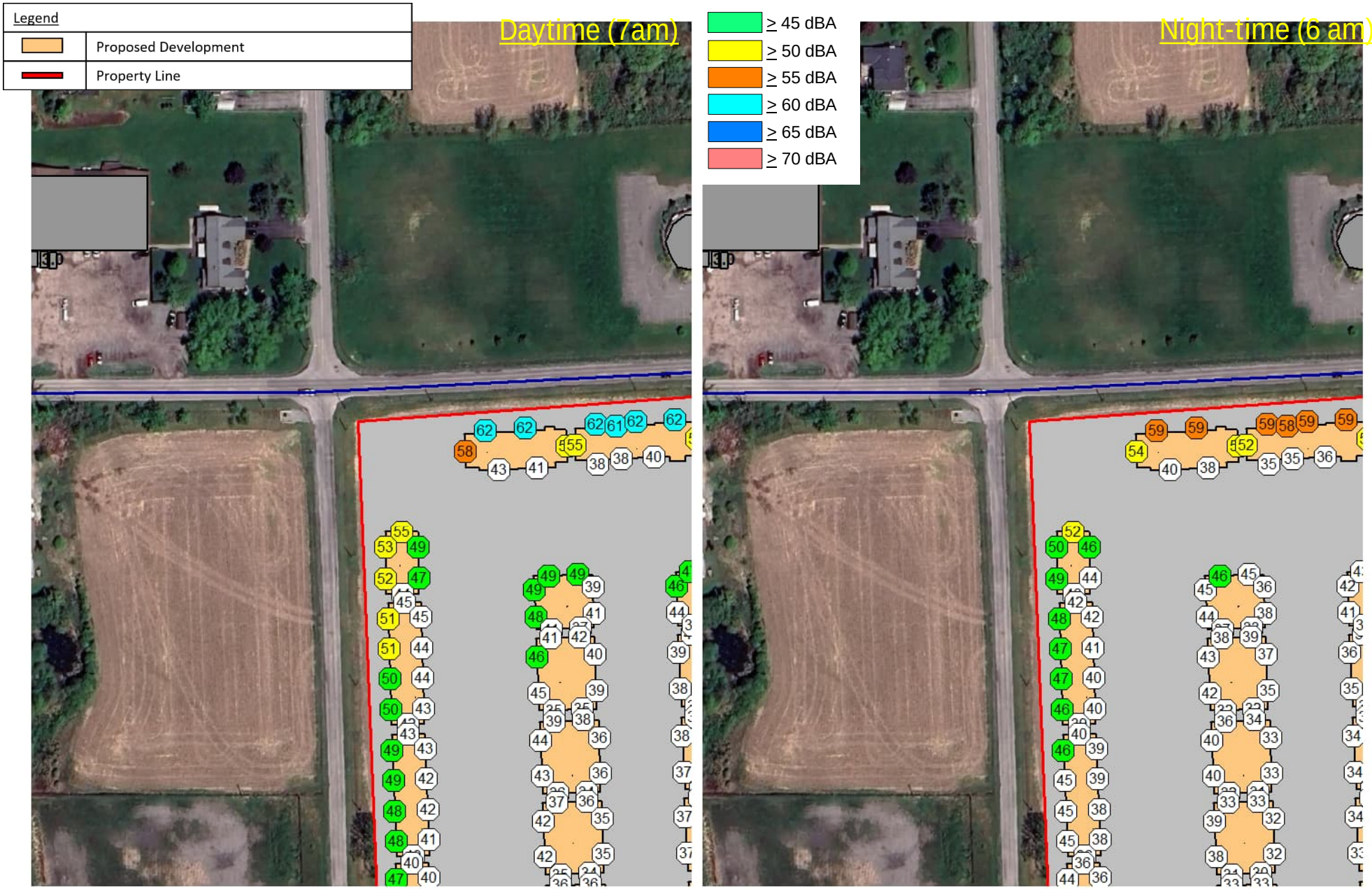
WIND FREQUENCY DISTRIBUTION DIAGRAM (WIND ROSE) WELLAND, ONTARIO 1989-2018

Scale: n/a		METRES
Date: Nov. 12, 2024	Rev 0.0	Figure No. 4
Project No. 241.30612.00000		

SLR



800460 ONTARIO LTD.	True North	Scale: 1:2,000	METRES	SLR
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Nov. 12, 2024 Rev 1	Figure No. **5**	
MODELLED STATIONARY NOISE SOURCES		Project No. 241.30612.00000		



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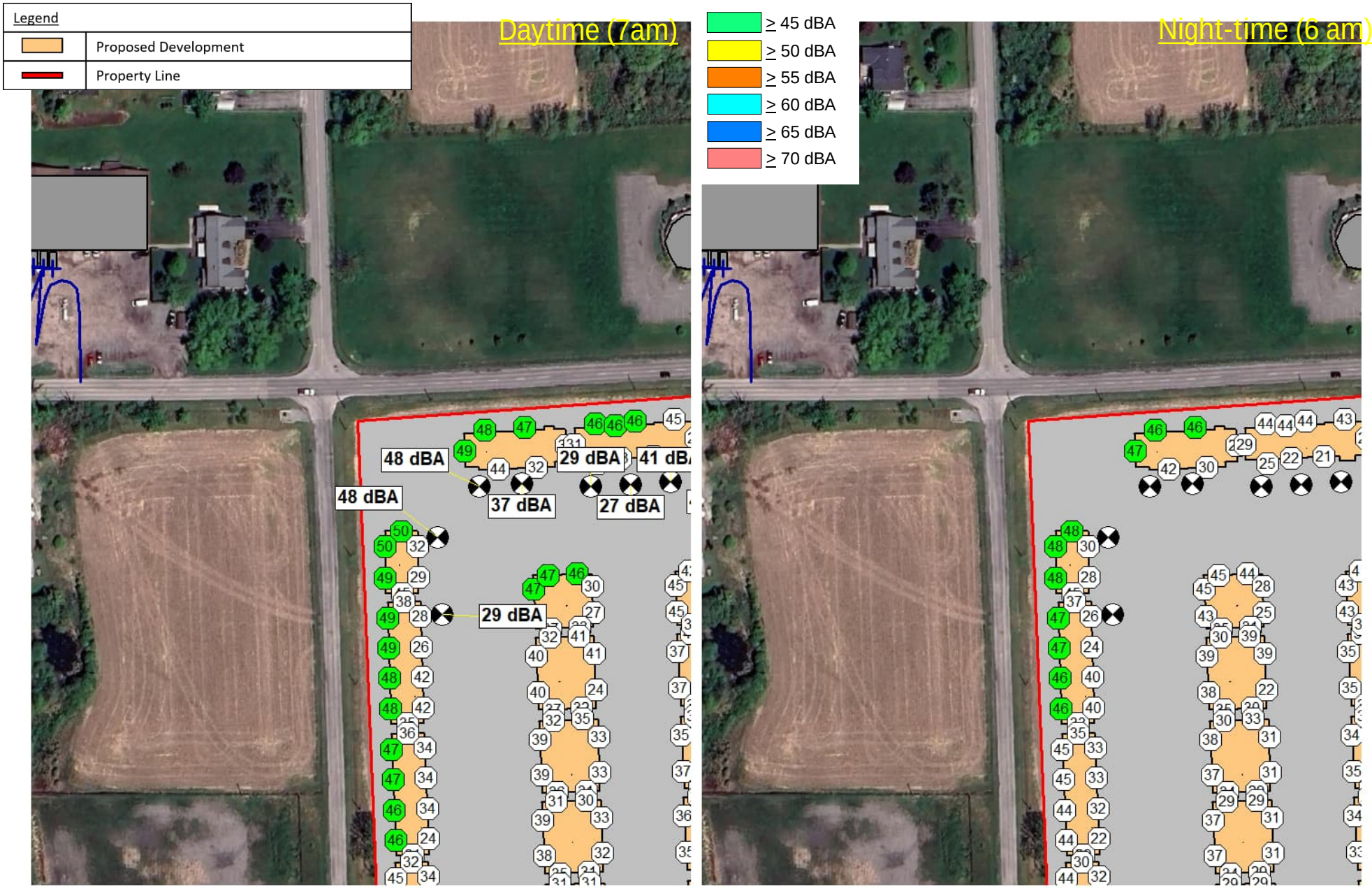
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Nov. 12, 2024 Rev 1	Figure No. **6**	
MODELLED AMBIENT SOUND LEVELS AND CORRESPONDING PUBLICATION NPC-300 CLASS 1 AREA NOISE GUIDELINE LIMITS		Project No. 241.30612.00000		



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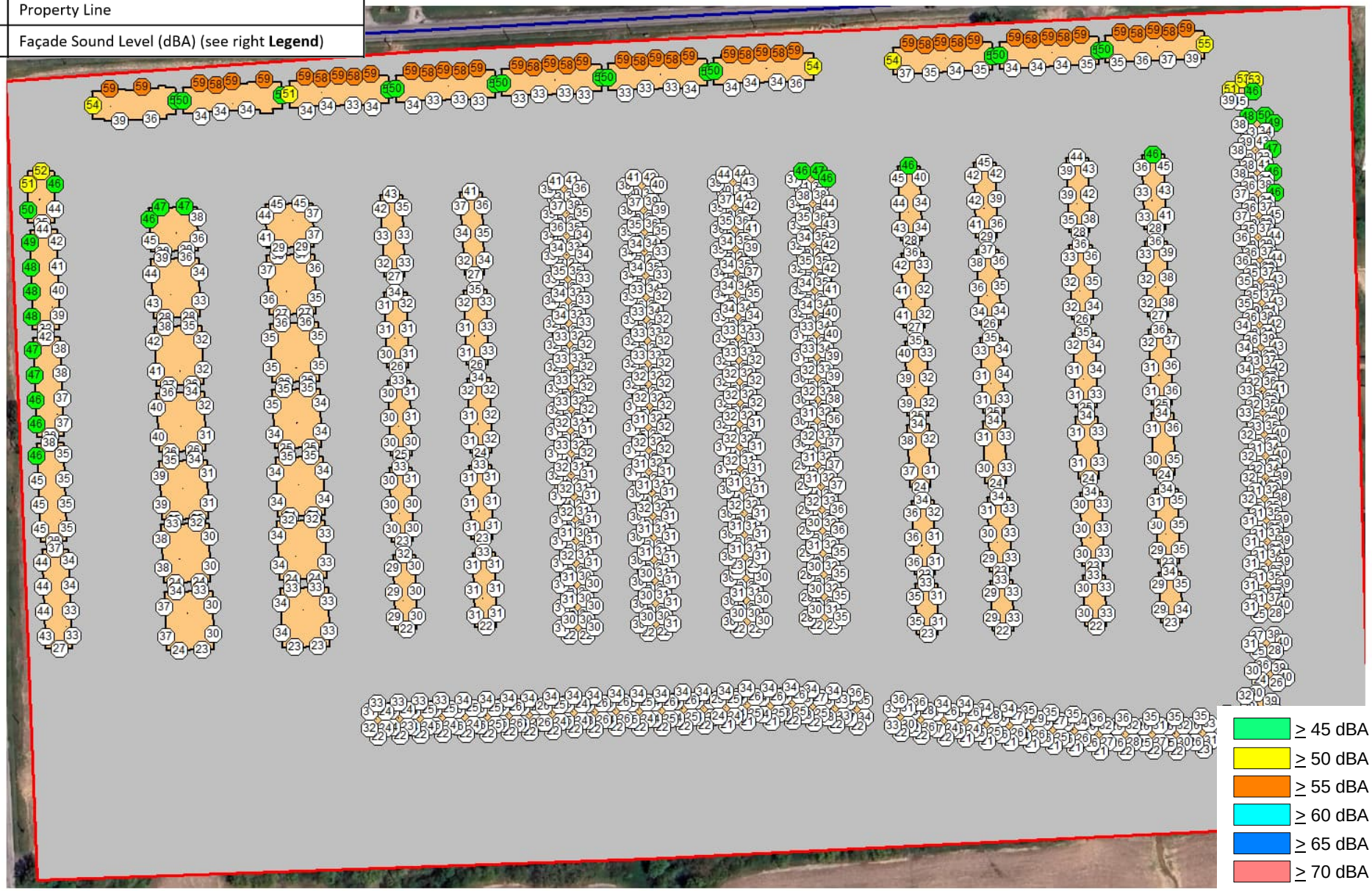
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Nov. 12, 2024 Rev 1	Figure No. **7**	SLR
MODELLED STATIONARY NOISE LEVELS		Project No. 241.30612.00000		

Legend	
	Proposed Development
	Property Line
	Façade Sound Level (dBA) (see right **Legend**)

800460 ONTARIO LTD.	True North	Scale: 1:2,500	METRES	
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Nov. 12, 2024	Rev 0.0	Figure No. **8**
MODELLED FAÇADE TRANSPORTATION NOISE IMPACTS – DAYTIME		Project No. 241.30612.00000		

Legend	
	Proposed Development
	Property Line
	Façade Sound Level (dBA) (see right **Legend**)



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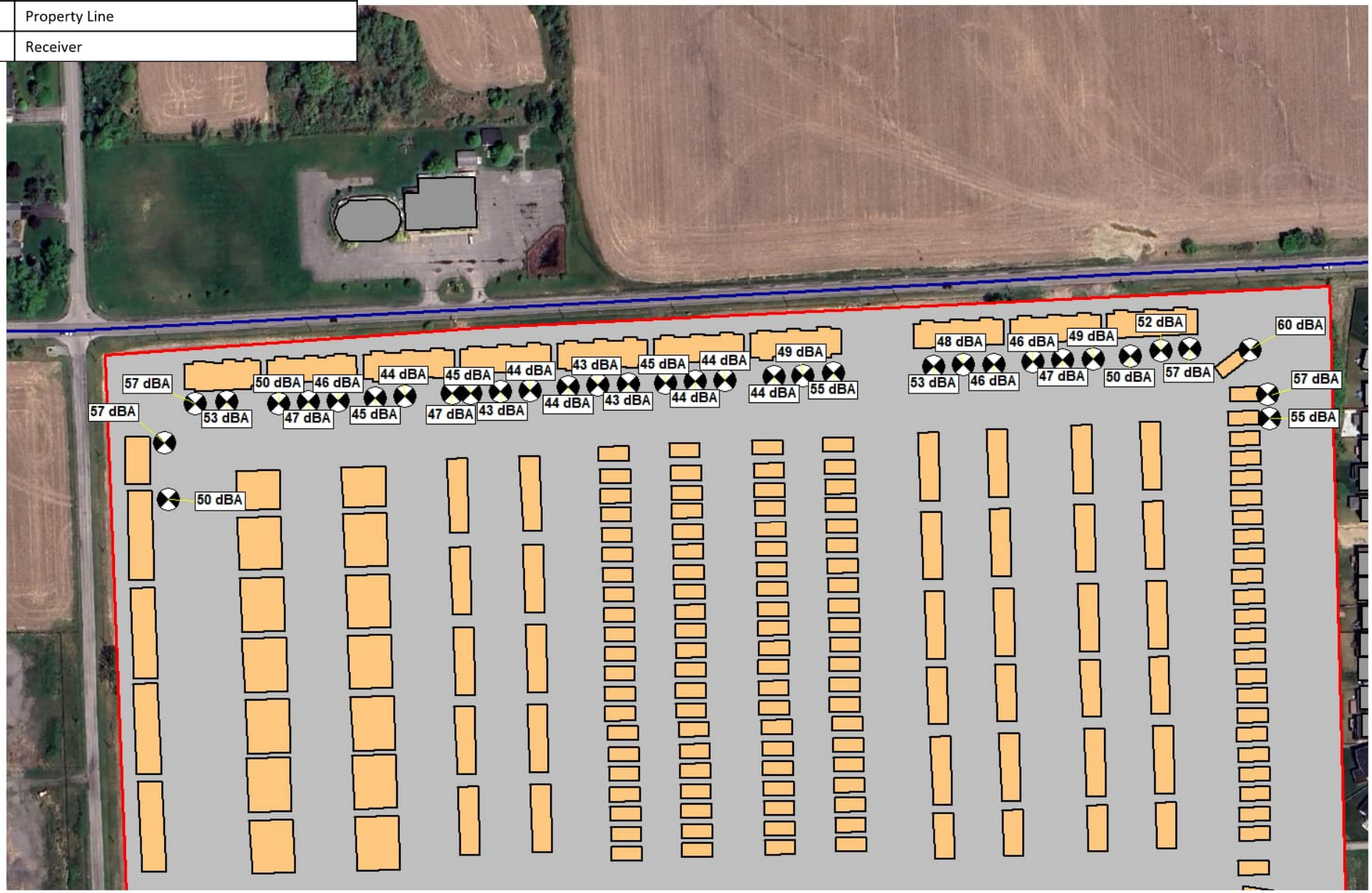
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Nov. 12, 2024 Rev 0.0	Figure No. **9**	SLR
MODELLED FAÇADE TRANSPORTATION NOISE IMPACTS – NIGHT-TIME		Project No. 241.30612.00000		

Legend	
	Proposed Development
	Property Line
	Receiver



800460 ONTARIO LTD.	True North	Scale: 1:2,750	METRES	SLR
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Nov. 12, 2024 Rev 0.0	Figure No. **10**	
MODELLED OLA TRANSPORTATION NOISE IMPACTS – DAYTIME		Project No. 241.30612.00000		

Legend

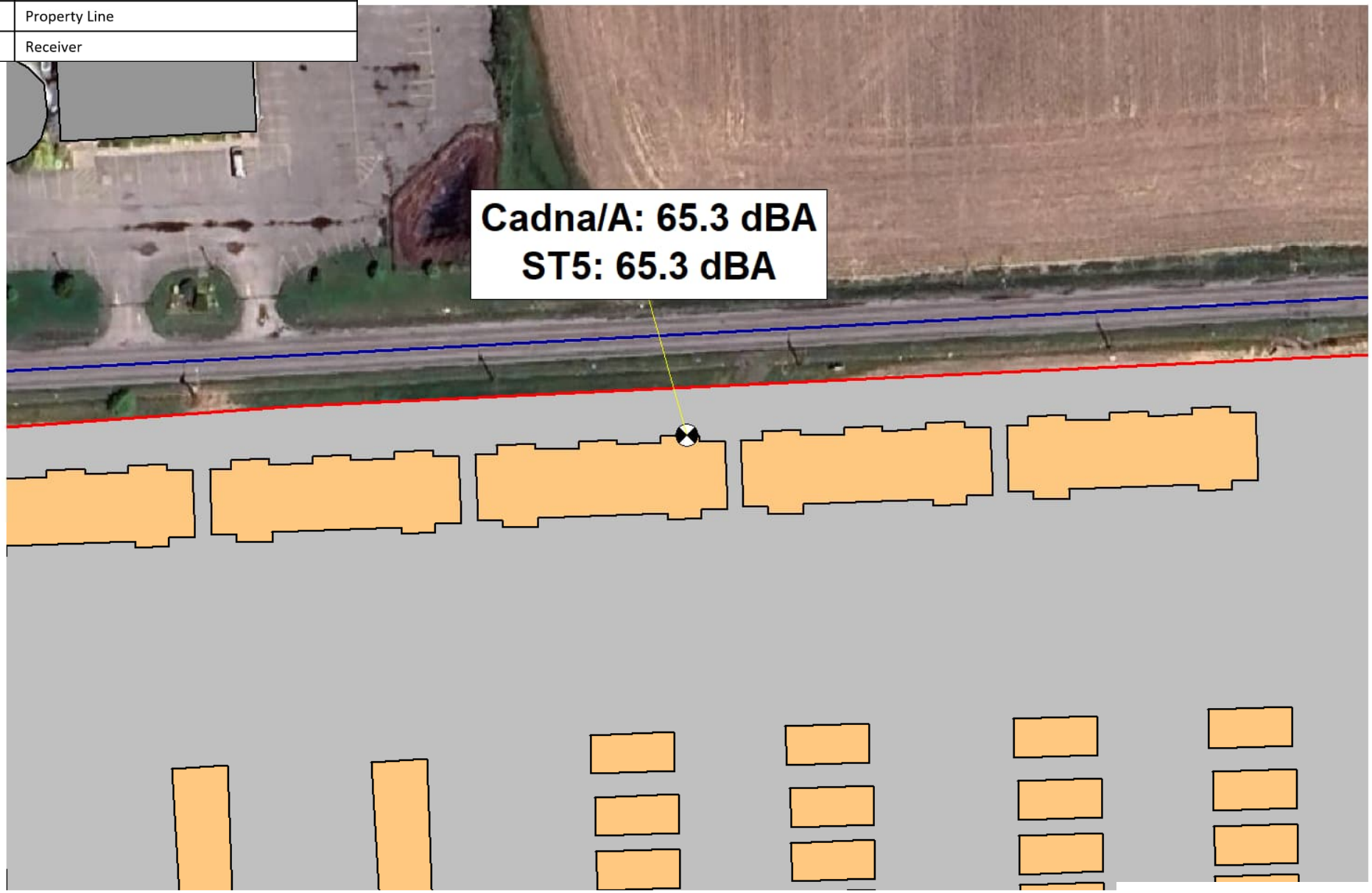
Type A

Type C

800460 ONTARIO LTD.	True North	Scale: NTS	METRES
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Nov. 12, 2024 Rev 1	Figure No. **11**
SUMMARY OF WARNING CLAUSE AND VENTILATION DESIGN REQUIREMENTS (SITE PLAN FROM UPPER CANADA CONSULTANTS, PRINTED OCTOBER 2024)		Project No. 241.30612.00000	

SLR

Legend	
	Proposed Development
	Property Line
	Receiver



Aerial Photography from Google Earth

800460 ONTARIO LTD.	True North	Scale: 1:1,000	METRES	SLR
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Nov. 12, 2024 Rev 0.0	Figure No. **E.1**	
STAMSON VS. CADNAA VALIDATION		Project No. 241.30612.00000		

Appendix A Demonstration Plan

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

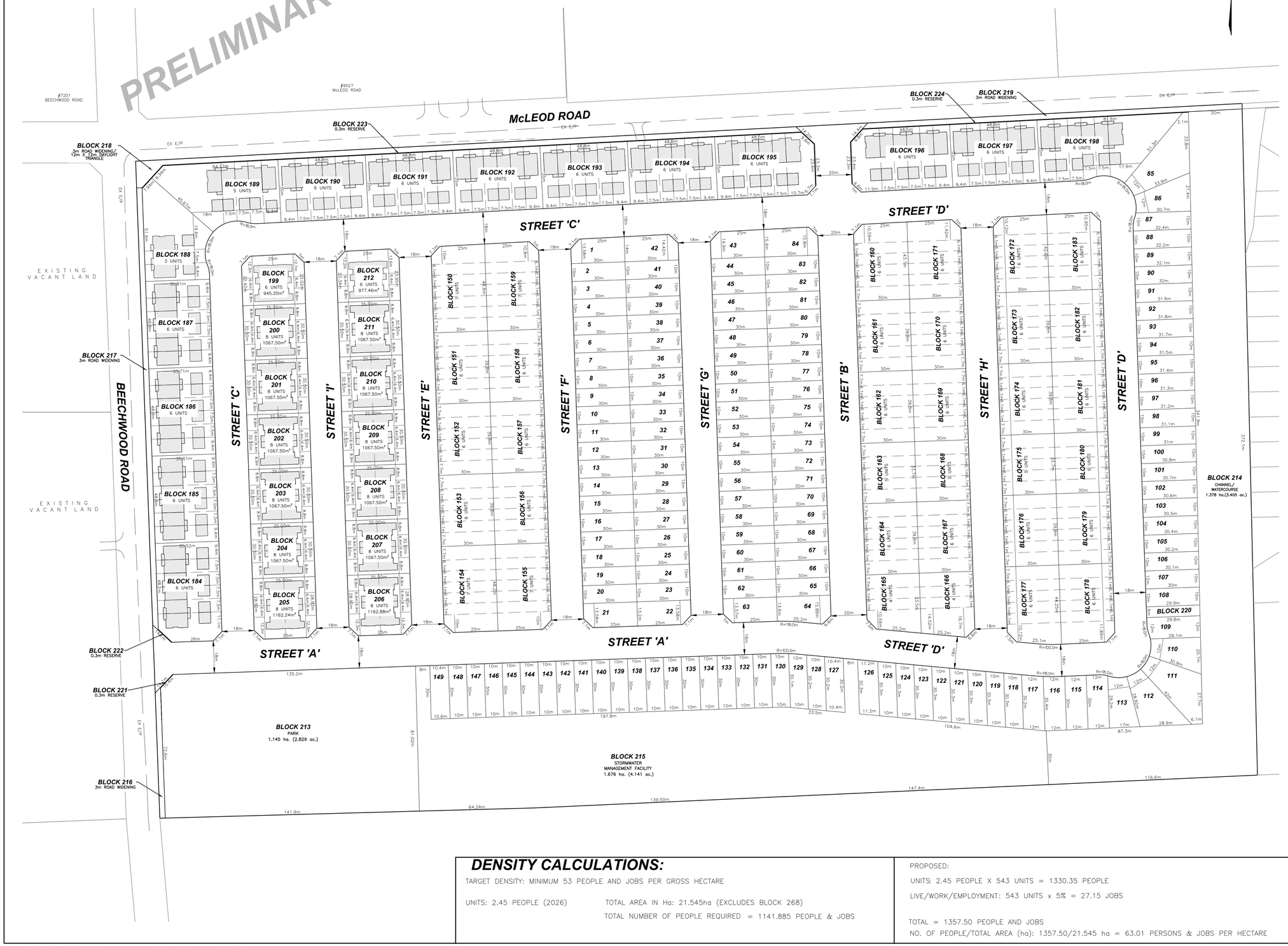
800460 Ontario Ltd.

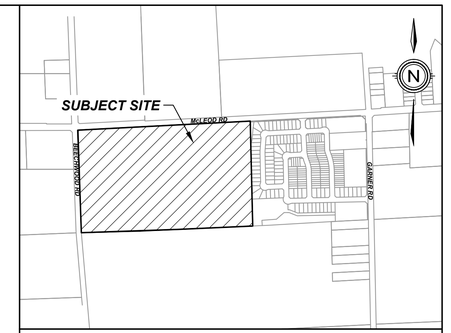
SLR Project No.: 241.03612.00000

November 12, 2024

McLEOD MEADOWS
CITY OF NIAGARA FALLS

PRELIMINARY





KEY PLAN
N.T.S.

DEMONSTRATION PLAN OF SUBDIVISION

LEGAL DESCRIPTION

PART 1 & PART 2, PLAN 59R-16846; PART OF LOT 181
GEOGRAPHIC TOWNSHIP OF STANFORD
NOW IN THE
CITY OF NIAGARA FALLS
REGIONAL MUNICIPALITY OF NIAGARA

LOTTING BREAKDOWN

FRONTAGE	No. of UNITS	% of TOTAL
10m Single-detached	138	25.41%
12m Single-detached	11	2.03%
6.1m Street Towns	200	36.83%
Rear Lane Towns	86	15.84%
Back-to-Back Towns	108	19.89%
TOTAL	543	100%

LAND USE SCHEDULE

LAND USE	LOT/BLOCK	# OF UNITS	AREA(ha)	AREA(%)
SINGLE FAMILY RESIDENTIAL	LOT 1-149	149	4.749	20.72
STREET TOWN RESIDENTIAL	BLOCK 150-183	200	4.097	17.87
REVERSE FRTG STREET TOWN	BLOCK 184-198	86	2.712	11.83
B2B STREET TOWN	BLOCK 199-212	108	1.492	6.51
PARKLAND	BLOCK 213		1.145	5.00
CHANNEL/WATERCOURSE	BLOCK 214		1.378	6.01
STORMWATER MGMT FACILITY	BLOCK 215		1.676	7.31
3.0m ROAD WIDENING/DAYLIGHT	BLOCK 216-219		0.285	1.24
6m SERVICING ACCESS	BLOCK 220		0.018	0.08
0.3m RESERVE	BLOCK 221-224		0.020	0.09
ROADWAY			5.317	23.20
TOTAL		543	22.923	100.00

DEVELOPABLE AREA: 21.545 ha (EXCLUDES BLOCK 214)
DEVELOPABLE DENSITY = 25.20 units/ha

.	.	.	.
.			
0	ISSUED FOR REVIEW	2024-10-22	MK
#	REVISION	DATE	INIT

UPPER CANADA CONSULTANTS
ENGINEERS / PLANNERS

DENSITY CALCULATIONS:

TARGET DENSITY: MINIMUM 53 PEOPLE AND JOBS PER GROSS HECTARE

UNITS: 2.45 PEOPLE (2026)

TOTAL AREA IN Ha: 21.545ha (EXCLUDES BLOCK 268)

TOTAL NUMBER OF PEOPLE REQUIRED = 1141.885 PEOPLE & JOBS

PROPOSED:

UNITS: 2.45 PEOPLE X 543 UNITS = 1330.35 PEOPLE

LIVE/WORK/EMPLOYMENT: 543 UNITS x 5% = 27.15 JOBS

TOTAL = 1357.50 PEOPLE AND JOBS

NO. OF PEOPLE/TOTAL AREA (ha): 1357.50/21.545 ha = 63.01 PERSONS & JOBS PER HECTARE

DRAWING TITLE

DEMONSTRATION PLAN OF SUBDIVISION (REVISED)

DRAFTING	MK/TA
DATE	AUGUST 15, 2024
PRINTED	OCTOBER 22, 2024
SCALE	1:1000
DWG No.	REV
2054-DEM15	**0**

DRAWING FILE: F:\2054\Planning\2054_Demonstration Plan-15.dwg PLOTTED: Oct 22, 2024 - 2:54pm PLOTTED BY: mark

Appendix B Draft McLeod Meadows OPA

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

Appendix E – Draft Official Plan Amendment and Schedule

OFFICIAL PLAN AMENDMENT NO. XXX

PART 1 – PREAMBLE

(i) **Purpose of the Amendment**

The purpose of the amendment is to redesignate the lands known municipally as 9304 McLeod Road to "Residential" and "Open Space" and to be identified as Special Policy Area "XX" as shown on the map attached entitled Map 1 to Amendment XXX.

(ii) **Location of the Amendment**

The amendment applies to lands shown as "Special Policy Area XX" on Map 1 to Amendment XXX.

(iii) **Details of the**

Amendment Text

Change

PART 2, SECTION 13 – SPECIAL POLICY AREAS, is amended as outlined in PART 2 – BODY OF THE AMENDMENT.

(iv) **Basis of the Amendment**

The City of Niagara Falls completed an Employment Lands Strategy to provide a long-term land use and planning policy framework for the City to enhance the competitive position for industrial and office employment. The study assessed "the City's long-term employment land needs to the 2051 planning horizon, considered the adequacy and marketability of the City's 'shovel-ready' employment lands in the near-term, and provided a number of policy recommendations for implementation to achieve consistency, conformity and alignment with upper-tier and provincial planning policy."[5]

Watson & Associated Economists Ltd (Watson), in partnership with Dillon Consulting Ltd (Dillon), and MOB Insight Inc. (MOB), completed the Employment Land Strategy. The Niagara Falls Employment Land Strategy was subject to a thorough public process including the required statutory public meetings.

The Strategy resulted in the adoption of Official Plan Amendment No. 147 on

[5] City of Niagara Falls, Official Plan Amendment No. 147, Basis of the Amendment

March 21, 2023 by Niagara Falls City Council. The Region of Niagara approved Amendment 147, with modifications, on August, 17, 2023. Amendment 147 is currently under appeal and before the Ontario Land Tribunal.

The Subject Lands, 9304 McLeod Road, were reviewed and assessed in the Niagara Falls Employment Land Strategy. The Strategy concluded the Subject Lands would be redesignated to "Residential". Specific policies relative to land use compatibility were included in Amendment 147, relative to the Subject Lands. The specific policies were further modified by the Region of Niagara in its approval.

The City of Niagara Falls has also approved a Zoning By-law and a Plan of Subdivision for the Subject Lands. The Zoning By-law has been appealed to the Ontario Land Tribunal. The Plan of Subdivision ("McLeod Meadows") is draft approved and not under appeal. The Draft Plan of Subdivision is being revised to incorporate changes in the layout. The revisions to the Draft Plan of Subdivision require changes to the City's Official Plan and Zoning By-law. In order for the proposed revisions to the Draft Plan of Subdivision to be addressed by the City, applications for an Official Plan Amendment and Zoning By-law Amendment are required.

Proposed Amendment XXX incorporates the findings of the Niagara Falls Employment Land Strategy and the Special Policy Area policies as detailed in the Region of Niagara's approval of Amendment 147.

PART 2 – BODY OF THE AMENDMENT

All of this part of the document entitled PART 2 – BODY OF THE AMENDMENT, consisting of the following text and attached map, constitute Amendment No. XXX to the Official Plan of the City of Niagara Falls.

DETAILS OF THE AMENDMENT

The Official Plan of the City of Niagara Falls is hereby amended as follows:

1. **MAP CHANGES**

SCHEDULE "A" – FUTURE LAND USE PLAN is amended by designating lands currently identified as Part 1 as shown on the map attached entitled Map 1 to Amendment No. XXX as "Residential".

SCHEDULE "A" – FUTURE LAND USE PLAN is amended by designating lands currently identified as Part 2 as shown on the map attached entitled Map 1 to Amendment No. XXX as "Open Space".

2. **TEXT CHANGES**

Policy 13.XX SPECIAL POLICY AREA "XX".

Special Policy Area "XX" applies to 22.9 hectares of land on the south side of McLeod Road, east of Beechwood Road, known municipally as 9304 McLeod Road.

1. The Residential designation of the lands will come into effect only when the following conditions are cleared by the City of Niagara Falls in consultation with Niagara Region
    a. That as part of any development application submission on the lands, the applicant shall undertake a Risk Assessment for review and approval to support a Residential designation on the lands.

        i. In advance of the Risk Assessment commencing, the applicant shall submit a Risk Assessment Terms of Reference to Niagara Region for review and approval. The Region will consult with the City of Niagara Falls on the Risk Assessment Terms of Reference. The City will be afforded a reasonable timeframe to provide input on the Terms of Reference.
        ii. Niagara Region will undertake a peer review of the Risk Assessment to confirm that the methodology utilized is appropriate and to certify that the Risk Assessment complies with the approved Terms of Reference.

iii. If the Risk Assessment determines that Residential uses are not appropriate for the lands, due to there being an unacceptable risk to public health or safety or other factors, the Risk Assessment shall identify appropriate non-residential uses to be considered for the lands.

b. That as part of any development application submission on the lands, the applicant shall prepare a Land Use Compatibility Study in accordance with Provincial D-6 Guidelines, which shall be peer reviewed.

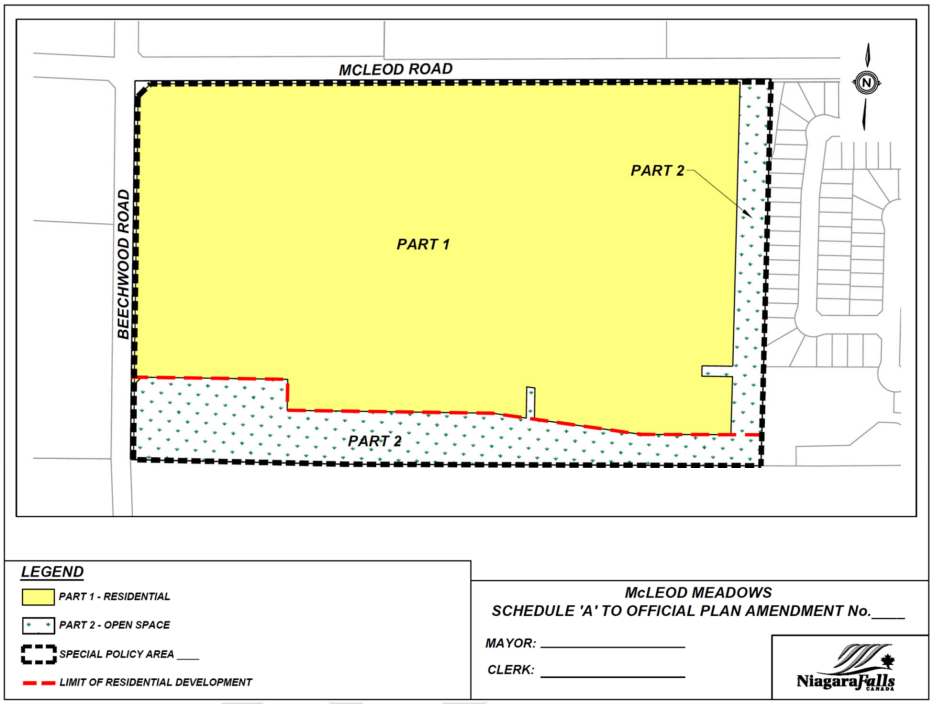
c. That as part of any development application submission on the lands, the applicant shall provide written acknowledgement demonstrating the gross floor area of non-residential space being retained for a similar number of jobs to remain accommodated on the site to support the conversion of the lands in accordance with Part 2, Policy 8.33 of this Plan.

2. A "Limit of Residential Development" is included on Map 1 to Official Plan Amendment XXX. Land use south of the "Limit of Residential Development" shall be restricted to the following uses: conservation use, existing agricultural use, wildlife management, work of a conservation authority, recreational uses without residential uses, and public services including walkways but excluding schools.

3. That any Residential development on the lands within Special Policy Area "XX" shall have a maximum building height of 12 metres.

4. Notice/warning clause(s) shall be registered on title to any future Residential lots/units to notify the owners that there is potential odour, air and noise emissions, including provision of high intensity lighting emanating from neighbouring industries, including the heavy industrial uses located west Garner Road and north of Chippawa Creek Road, and from the Region's Garner Road Biosolids Treatment Facility.

5. The lands within Special Policy Area "XX" are located within the Thompson Creek Watershed. Prior to any development, a comprehensive Stormwater Management Report is required to assess the impact on Thompson Creek.



LEGEND

- PART 1 - RESIDENTIAL
- PART 2 - OPEN SPACE
- SPECIAL POLICY AREA ___
- LIMIT OF RESIDENTIAL DEVELOPMENT

McLEOD MEADOWS
SCHEDULE 'A' TO OFFICIAL PLAN AMENDMENT No.____

MAYOR: _____

CLERK: _____

Niagara Falls

Appendix C Industrial Information

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

Industry Listing - 9304 McLeod Road, Niagara Falls

Name	Address	Description	MECP ECA or EASR No. (Date)	MECP Guideline D-6					
				Class	A of I	R M S	Actual Dist.	Within A of I?	Within R M S?
Dan's Produce	7201 Beechwood Road	Produce Wholesaler	-	I (Air) II (Noise)	300	70	75	Yes	-
Cytec Canada Inc.	9061 Garner Road	Chemical Manufacturing	9547-C5ULRS (2022)	III	1000	300	850	Yes	-
Niagara Store Fixtures	7317 Garner Road	Custom Store Fixtures Manufacturing and Commercial Millwork	-	I	70	20	330	-	-
Sure-Fix Service Group Inc.	7334 Garner Road	HVAC Contractor	-	I	70	20	425	-	-
The Mechanic's Team Auto Repair Inc.	8943 McLeod Road	Auto Repair Shop	-	I	70	20	425	-	-
Walker Construction Niagara	9101 Brown Road	Construction Company	-	II	300	70	680	-	-
BVGlazing Systems	9946 McLeod Road	Warehousing Storage		I	70	20	400	-	-
Boys' & Girls' Club of Niagara	8800 McLeod Road		8357-8L8Q8B (2011)	I	70	20	600	-	-
Bruce Mark Reaman	9788 McLeod Road	Waste management	R-004-4423838228 (2014) A920442 (2008)	I	70	20	180	-	-
Terratec Environmental	8800 Garner Road	Composting Facility	3203-5JBHQF (2003)	II	300	70	1700	-	-

Notes:

A of I = Areas of Influence: Class I = 70m, Class II = 300m, Class III = 1,000m

R M S = Recommended Mimimum Separation Distances: Class 1 = 20m, Class II = 70m, Class III = 300m.

Appendix D Cytec Canada In. MECP Permit

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 9547-C5ULRS
Issue Date: February 3, 2022

Cytec Canada Inc.
9061 Garner Rd
Niagara Falls, Ontario
L2H 0Y2

Site Location: Cytec Canada Inc.
9061 Garner Rd
Niagara Falls City, Regional Municipality of Niagara
L2E 6S5

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 phosphine and phosphine derivatives facility, consisting of the following processes and support units:

- Phosphine Plant including derivatives section;
- Purification, mixing and packaging; and;
- Research and development pilot plant;

and the following *Equipment with Specific Operational Limits* :

- one (1) emergency flare located in the phosphine building equipped with a natural gas fired continuous pilot burner system having a maximum thermal input of 142,290 kilojoules per hour combined for the three burner units, used to burn spills, releases from safety valves, rupture disk type vents and vapour headspace in reaction vessels from Train 1 operations. Under the worst case upset, the flare combusts pyrophoric waste gas originating from a safety valve of an autoclave, having a maximum volumetric flow rate of 1,262 standard cubic metres per minute;
- one (1) emergency flare located in the flare and thermal oxidizer building equipped with a natural gas fired continuous pilot burner system having a maximum thermal input of 1,106,700 kilojoules per hour combined for the three burner units, used to burn spills, releases from safety valves, rupture disk type vents and vapour headspace in reaction vessels from Train 2 operations. Under the worst case

upset, the flare combusts pyrophoric waste gas originating from a safety valve of an autoclave, having a maximum volumetric flow rate of 1,262 standard cubic metres per minute;

- one (1) natural gas fired thermal oxidizer serving Train 1, designed for a maximum heat input of 7,157,000 kilojoules per hour equipped with a natural gas fired burner used to incinerate the following streams:
    - waste gas comprising of phosphine, nitrogen, isobutylene, butene, low levels of all raw materials and phosphine compounds from the vessel vapour headspaces, having a maximum volumetric flow rate of 4.39 standard cubic metres per minute;
    - waste organic liquid, a mixture of organic solvents and phosphine derivatives, consisting of toluene, isopropyl alcohol mixture, octene, organophosphines, diisobutylene, tri-isobutyl phosphine, methyl tosylate, cyclooctadiene, hexene and isopar-M, having a maximum flow rate of 2.5 litres per minute; and
    - waste aqueous having a volumetric flow rate of 7.57 litres per minute.

  The thermal oxidizer operates at a temperature of 871 degrees Celsius with a minimum gas residence time of 2 seconds and is equipped with a continuous monitoring and recording system, a quench section, a venturi scrubber and a mist eliminator comprising of polyester fiber filters, having a dust removal efficiency of not less than 90 percent. The thermal oxidizer temperature will drop to 843 degrees Celsius during swings in operation before the waste organic liquid is shut off;
- one (1) natural gas fired thermal oxidizer serving Train 2, designed for a maximum heat input of 10,736,000 kilojoules per hour equipped with a natural gas fired burner, used to incinerate the following streams:
    - waste gas comprising of phosphine, nitrogen, isobutylene, butene, low levels of all raw materials and phosphine compounds from the vessel vapour headspaces, having a maximum volumetric flow rate of 4.39 standard cubic metres per minute;
    - waste organic liquid, a mixture of organic solvents and phosphine derivatives, consisting of toluene, isopropyl alcohol mixture, octene, organophosphines, diisobutylene, tri-isobutyl phosphine, methyl tosylate, cyclooctadiene, hexene and isopar-M, having a maximum flow rate of 3.75 litres per minute; and
    - waste aqueous having a volumetric flow rate of 11.4 litres per minute.

  The thermal oxidizer operates at a temperature of 871 degrees Celsius and a minimum gas residence time of 2 seconds, and is equipped with a continuous monitoring and recording system, a quench section, a venturi scrubber and a mist eliminator comprising of polyester fiber filters, having a dust removal efficiency of

not less than 90 percent. The thermal oxidizer will drop to 843 degrees Celsius during swings in operation before the waste organic liquid is shut off;
- two (2) natural gas fired boilers located in the steam plant, each having a total maximum heat input of 13,900,000 kilojoules per hour;
- two (2) natural gas fired boilers located in the utilities building, each having a total maximum heat input of 22,051,788 kilojoules per hour;

including the Equipment and any other ancillary and support processes and activities, operating at a Facility Production Limit of up to **40,000 tonnes of phosphine based chemicals 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. "ACB list" means the document entitled “Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants”, as amended from time to time and published by the Ministry and available on a Government website;
2. "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. is not identified in the ACB list, or
    b. is identified in the ACB list as belonging to the category “Benchmark 2” and has a concentration at a Point of Impingement that exceeds the concentration set out for the contaminant in that document.
    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;
3. "Acoustic Assessment Report" means the report, prepared in accordance with Publication NPC-233 and Appendix A of the Basic Comprehensive User Guide, by Slavi Grozev, P.Eng. / RWDI AIR Inc. and dated October 7, 2021 submitted in support of the application, that documents all sources of noise emissions and Noise Control Measures present at the Facility, as updated in accordance with Condition 5 of this Approval;
4. "Acoustic Assessment Summary Table" means a table prepared in accordance with the Basic Comprehensive User Guide summarising the results of the Acoustic Assessment Report, as updated in accordance with Condition 5 of this Approval;

5. "Approval" means this entire Environmental Compliance Approval and any Schedules to it;
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 Plan for Facility Flares" means a document or a set of documents which describe record keeping and notification processes for Flaring Events at the Facility;
8. "Company" means **Cytec Canada Inc.** 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;
9. "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;
10. "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;
11. "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;
12. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;
13. "Emission Summary Table" means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;
14. "Environmental Assessment Act" means the *Environmental Assessment Act,* R.S.O. 1990, c.E.18;
15. "EPA" means the *Environmental Protection Act,* R.S.O. 1990, c.E.19;
16. "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;
17. "Equipment with Specific Operational Limits" means emergency flares, natural gas fired thermal oxidizers, natural gas fired boilers each with a heat input greater than 10.5 gigajoules per hour and any Equipment related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other Equipment that is specifically referenced in any published Ministry document that outlines specific operational guidance that must be considered by the Director in issuing an Approval;
18. "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;

19. "Facility" means the entire operation located on the property where the Equipment is located;
20. "Facility Production Limit" means the production limit placed by the Director on the main product(s) or raw materials used by the Facility;
21. "Flaring Event" means the operation of an emergency flare that was reported to the Ministry's Spills Action Centre and/or the discharge of greater than 10 kilograms of phosphine (CAS no.7803-51-2) to an emergency flare;
22. "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;
23. "Low Flow Event" means a discharge of phosphine (CAS no.7803-51-2) to flare other than a Flaring Event and includes low flow and/or low volume discharges to flare;
24. "Minister" means the Minister of the Environment, Conservation and Parks or such other member of the Executive Council as may be assigned the administration of the EPA under the Executive Council Act;
25. "Ministry" means the ministry of the Minister;
26. "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;
27. "Noise Control Measures" means measures to reduce the noise emissions from the Facility and/or Equipment including, but not limited to, silencers, acoustic louvres, enclosures, absorptive treatment, plenums and barriers;
28. "O. Reg. 419/05" means Ontario Regulation 419/05: Air Pollution – Local Air Quality, made under the EPA;
29. "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 RWDI AIR Inc. and dated September 30, 2020

submitted in support of the application, and includes any changes to the report made up to the date of issuance of this Approval;

30. "Point of Impingement" has the same meaning as in section 2 of O. Reg. 419/05;
31. "Point of Reception" means Point of Reception as defined by Publication NPC-300;
32. "Procedure Document" means Ministry guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2018, as amended;
33. "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;
34. "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;
35. "Publication NPC-233" means the Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended;
36. "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;
37. "*Report EPS 1/PG/7"* means the report titled "Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Power Generation" dated December 2005 and published by Environment Canada, as amended.
38. "Schedules" means the following schedules attached to this Approval and forming part of this Approval namely:
    - Schedule A - Supporting Documentation
    - Schedule B - Continuous Temperature Monitor and Recorder;
    - Schedule C - Carbon Monoxide Monitor and Recorder;
    - Schedule D - Continuous Oxygen Monitor and Recorder; and
    - Schedule E - Flaring Event Emission Summary and Dispersion Modelling Report.
39. "Thermal Oxidizers" means the two (2) thermal oxidizers (referenced in the Original ESDM Report as sources 74 and AH) each equipped with a quenched

section, venturi scrubber and mist eliminator, described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval;

40. "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; and
41. "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. 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 - Continuous Temperature Monitor and Recorder;
        - Schedule C - Carbon Monoxide Monitor and Recorder;
        - Schedule D - Continuous Oxygen Monitor and Recorder; and
        - Schedule E - Flaring Event Emission Summary and Dispersion Modelling Report.

2. **LIMITED OPERATIONAL FLEXIBILITY**
    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. 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; and
   b. Modifications to the Facility that would be subject to the Environmental Assessment Act.

3. Condition 2.1 of this Approval shall expire December 19, 2027, 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 and an Acoustic Assessment Report that describes the Facility as of the date of the renewal application.

3. **REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION**
   1. Prior to making a Modification to the Facility that satisfies Condition 2.1.a. and 2.1.b., the Company shall prepare a proposed update to the ESDM Report to reflect the proposed Modification.
   2. The Company shall request approval of an Acceptable Point of Impingement Concentration for a Compound of Concern if the Compound of Concern is not identified in the ACB list as belonging to the category “Benchmark 1” 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 exceeds the concentration set out for the contaminant in the ACB list; or
         ii. the Compound of Concern is not identified in the ACB list; or
      b. The concentration of the Compound of Concern in the updated ESDM Report exceeds the higher of,
         i. the most recent Acceptable Point of Impingement Concentration, and
         ii. the concentration set out for the contaminant in the ACB list, if the contaminant is identified in that document.
   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.

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.
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.
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.
7. The re-submission mentioned in Condition 3.6 shall be deemed a new submission under Condition 3.2.
8. If the Director approves the request, the Company shall update the ESDM Report to reflect the Modification.
9. Condition 3 does not apply if Condition 2.1 has expired.

4. **PERFORMANCE LIMITS**
    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 is identified in the ACB list as belonging to the category "Benchmark 1" and the discharge results in the concentration at a Point of Impingement exceeding the Benchmark 1 concentration; or
        b. the Compound of Concern is not identified in the ACB list as belonging to the category “Benchmark 1” 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 concentration set out for the contaminant in the ACB list, if the contaminant is identified in that document.
    2. Condition 4.1 does not apply if the benchmark set out in the ACB list 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.

3. The Company shall, at all times, ensure that the noise emissions from the Facility comply with the limits set out in Ministry Publication NPC-300.
4. The Company shall, at all times, ensure that the vibration emissions from the Facility comply with the limits set out in Ministry Publication NPC-207.
5. The Company shall operate any Equipment with Specific Operational Limits approved by this Approval in accordance with the Original ESDM Report and Conditions 7, 8, 10, 11 and 12 in this Approval.

5. **DOCUMENTATION REQUIREMENTS**
    1. The Company shall maintain an up-to-date Log.
    2. No later than March 31 in each year, the Company shall update the Acoustic Assessment Report and shall update the ESDM Report in accordance with section 26 of O. Reg. 419/05 so that the information in the reports is accurate as of December 31 in the previous year.
    3. The Company shall make the Emission Summary Table (see section 27 of O. Reg. 419/05) and Acoustic Assessment Summary Table 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.
    4. The Company shall, within three (3) months after the expiry of Condition 2.1 of this Approval, update the ESDM Report and the Acoustic Assessment Report such that the information in the reports is accurate as of the date that Condition 2.1 of this Approval expired.
    5. Conditions 5.1 and 5.2 do not apply if Condition 2.1 has expired.

6. **REPORTING REQUIREMENTS**
    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 and by email to Environment.Niagara@ontario.ca 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 2.1.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 or resulted in a change in the sound levels reported in the Acoustic Assessment Summary Table at any Point of

Reception.

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

7. **OPERATION AND MAINTENANCE**
    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 prevent upset conditions;
        c. procedures to minimize all fugitive emissions;
        d. procedures to prevent and/or minimize odorous emissions;
        e. procedures to prevent and/or minimize noise emissions;
        f. procedures for record keeping activities relating to the operation and maintenance program;
        g. routine and emergency operating and maintenance procedures recommended by Thermal Oxidizers, the continuous monitoring and recording systems and emergency flares suppliers;
        h. calibration procedures of the continuous monitoring and recording systems;
        i. operator training which is to be provided by an individual experienced with Thermal Oxidizer Systems and emergency flares;
        j. procedures for optimizing the operation of the Thermal Oxidizers to minimize the emissions from the Thermal Oxidizers;
        k. periodic inspection of the Thermal Oxidizers which are to be conducted by individuals experienced with the Thermal Oxidizers;
        l. procedures for recording and responding to complaints regarding the operation of the Thermal Oxidizers;
        m. procedures to record the usage rate of chemicals in fume hoods; and
        n. The Company shall ensure that any Equipment subject to Guideline A-9 is operated in compliance with the requirements of Guideline A-9, and that the emissions of nitrogen oxides, expressed collectively as nitrogen dioxide equivalent, from the natural gas fired boilers having a maximum heat input greater than 10.5 gigajoules per hour, shall not exceed the nitrogen oxides emission limit of 26 grams per gigajoule of input fuel energy.

2. The Company shall ensure that the combustion chambers of each of the thermal oxidizers are not loaded unless the continuous temperature monitoring system is fully operational.
3. The Company shall ensure that no substances containing chlorinated and/or fluorinated and/or brominated compounds, including polyvinyl chloride and Teflon are combusted in the Thermal Oxidizers.
4. 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.

8. **FLARE OPERATIONS**
    1. The Company shall immediately implement the Best Management Practices Plan for Facility Flares entitled "Best Management Practices Plan (BMPP) for Facility Flares", dated January 27, 2022, as amended.
        a. The Company shall:
            i. review and evaluate on a yearly basis, the Best Management Practices Plan for Facility Flares;
            ii. record the results of each yearly review and update the Best Management Practices Plan for Facility Flares within two (2) months of the completion of the yearly review;
            iii. maintain the updated Best Management Practices Plan for Facility Flares at the Facility;
            iv. implement, at all times, the most recent version of the Best Management Practices Plan for Facility Flares.

    2. The Company shall notify the District Manager as soon as reasonably possible of each Flaring Event, and provide the following information following each Flaring Event as soon as reasonable possible:
        a. the start and end times of the Flaring Event;
        b. the type of gas sent to flare;
        c. estimated total volume and mass of gas sent to flare;
        d. the contaminants and the mass of each contaminant discharged during the Flaring Event;
        e. a summary of investigations conducted including an assessment of root causes and failure analyses linked to the Flaring Event;
        f. a summary of findings from investigations conducted;
        g. corrective actions taken to prevent future Flaring Events;

h. any remaining actions and their proposed completion dates;
i. wind direction/weather details at time of Flaring Event;
j. available photos/video during the Flaring Event; and
k. details regarding if, when and how neighbours were notified of the Flaring Event.

3. The Company shall notify the District Manager as soon as reasonably possible of each Low Flow Event, and provide the following information following each Low Flow Event:
   a. the start and end times of the Low Flow Event;
   b. estimated total volume and mass of phosphine (CAS no.7803-51-2) sent to flare;
   c. the contaminants and the mass of each contaminant discharged during the Low Flow Event;
   d. a summary of investigations conducted including an assessment of root causes and failure analyses linked to the Low Flow Event;
   e. a summary of findings from investigations conducted;
   f. corrective actions taken to prevent future Low Flow Events;
   g. any remaining actions and their proposed completion dates;
   h. wind direction/weather details at time of Low Flow Event;
   i. available photos/video during the Low Flow Event; and
   j. details regarding if, when and how neighbours were notified of the Low Flow Event.

4. The Company shall prepare, at the end of each calendar quarter, and retain on-site for inspection by the Ministry, upon request, a report for the previous calendar quarter that includes at a minimum:
   a. a list of Flaring Events and Low Flow Events, provided in table format, including start and end times, type and total volume and mass of gas sent to flare, and the contaminants discharged during the events;
   b. a summary of the assessment of root cause and failure analyses;
   c. a summary of actions taken to prevent future Flaring Events and Low Flow Events;
   d. a summary of pending actions to be taken to prevent future Flaring Events and Low Flow Events; and
   e. as established within the Best Management Practices Plan for Facility

Flares, a summary of efforts taken to notify local communities and other interested parties of Flaring Events and Low Flow Events.

5. The Company shall prepare, at the end of each calendar quarter, and provide to the District Manager a Flaring Event Emission Summary and Dispersion Modelling Report in accordance with section 26 of O.Reg. 419/05 and prepared in accordance with the requirements outlined in Schedule E. The Flaring Event Emission Summary and Dispersion Modelling Report shall assess each Flaring Event during the previous calendar quarter, and shall be provided within 4 weeks of the receipt of, from the Ministry, local meteorological data reflective of meteorological and local land use conditions for each of the Flaring Events during the calendar quarter.
    a. Despite subsection 5, the Director may waive in writing the requirement to assess a specific Flaring Event.

9. **COMPLAINTS RECORDING AND REPORTING**
    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. Notify the District Manager of the complaint within two (2) business days after the complaint is received, or in a manner acceptable to the District Manager.
        c. 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.
        d. Complete and retain on-site a report written within five (5) business days 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.

10. **RECORD KEEPING REQUIREMENTS**
    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.

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. a copy of each version of the Acoustic Assessment Report;
    c. supporting information used in the emission rate calculations performed in the ESDM Reports and Acoustic Assessment Reports;
    d. the records in the Log;
    e. copies of each Written Summary Form provided to the Ministry under Condition 6.1 of this Approval;
    f. records of maintenance, repair and inspection of Equipment related to all Processes with Significant Environmental Aspects;
    g. all records on maintenance, repair and inspection of the continuous monitoring and recording system, and original date that work was recommended;
    h. all records produced by the continuous monitoring and recording system;
    i. all records on operators training;
    j. all records of the usage rate of chemicals in fumehoods;
    k. description of all upset conditions associated with the operation of the Thermal Oxidizers and remedial action taken; and
    l. all records related to environmental complaints made by the public as required by Condition 9 of this Approval.

11. **EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS**
    1. The Company shall ensure that the Thermal Oxidizers, used to incinerate waste gas, waste organic liquid and water containing organic are designed and operated to comply, at all times, with the following performance requirements:
        a. the temperature in the combustion chamber, as recorded by the continuous monitoring and recording system, shall be at least 871 degrees Celsius throughout the combustion cycle but may drop to 843 degrees Celsius during swings in operation before the waste organic liquid is shut off; and

b. the minimum residence time of the combustion gases in the combustion chamber shall be 2.0 seconds, operating at a temperature of not less than 843 degrees Celsius.

12. **CONTINUOUS MONITORING**
    1. The Company shall install, conduct and maintain a program to continuously monitor:
        a. the temperature at the location in the combustion chamber of the Train 1 Thermal Oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 843 degrees Celsius at 2 seconds is achieved. The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule B1. The continuous monitoring and recording system shall comply with the requirements outlined in the attached Schedule B2 by January 31, 2023.
        b. the temperature at the location in the combustion chamber of the Train 2 Thermal Oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 843 degrees Celsius at 2 seconds is achieved. The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule B2.
        c. carbon monoxide at an accessible location where the measurements are representative of the actual concentrations of carbon monoxide in the gases leaving each of the Thermal Oxidizers. The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule C.
        d. oxygen at an accessible location where the measurements are representative of the actual concentrations of oxygen in the gases leaving each of the Thermal Oxidizers. The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule D.

13. **REVOCATION OF PREVIOUS APPROVALS**
    1. 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

1. Environmental Compliance Approval Application, dated October 29, 2020, signed by Heidi Kelly and submitted by the *Company;*
2. Acoustic Assessment Report, prepared by Slavi Grozev, P.Eng., RWDI AIR Inc. and dated October 7, 2021;
3. Emission Summary and Dispersion Modelling Report, prepared by RWDI AIR Inc. and dated September 30, 2020;
4. The emails from Sharon Schajnoha, RWDI Air Inc. dated July 10, 11 and 24, 2017.
5. The letter dated March 10, 2017 and signed by Hedi Kelly, Health, Safety and Environmental Engineer, Cytec Canada Inc.; and
6. The letters (e-mails) dated March 10 and 13, 2017 and provided by Katie Allen and Sharon Schajnoha, RWDI AIR Inc.

SCHEDULE B1

Continuous Temperature Monitoring and Recording System Requirements

PARAMETER:

Temperature

LOCATION:

The sample point for the Continuous Temperature Monitoring and Recording system shall be located at a location where the measurements are representative of the minimum temperature of the gases leaving the combustion chamber of the Thermal Oxidizer.

PERFORMANCE:

The Continuous Temperature Monitoring system shall meet the following minimum performance specifications for the following parameters.

PARAMETERS	SPECIFICATION
Type	shielded "K" type thermocouple, or equivalent
Accuracy	± 1.5 percent of the minimum gas

	temperature

RECORDER:

The recorder must be capable of registering continuously the measurement of the monitoring system without a significant loss of accuracy and with a time resolution of 1 minute or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

SCHEDULE B2

Continuous Temperature Monitoring and Recording System Requirements

PARAMETER:

Temperature

LOCATION:

The sample point for the Continuous Temperature Monitoring and Recording system shall be located at a location where the measurements are representative of the minimum temperature of the gases leaving the combustion chamber of the Thermal Oxidizer.

PERFORMANCE:

The Continuous Temperature Monitoring system shall meet the following minimum performance specifications for the following parameters.

PARAMETERS	SPECIFICATION
Type	shielded "K" type thermocouple, or equivalent
Accuracy	± 1.5 percent of the minimum gas temperature
Response Time (95%)	60 sec. (max)
Operating Range (Full Scale)	1.5 times approval limit
Standard Tolerance	± 2.2 ºC or ± 0.75%
Resolution	0.1 ºC

Calibration	Per manufacturer’s recommendations

RECORDER:

The recorder must be capable of registering continuously the measurement of the monitoring system without a significant loss of accuracy and with a time resolution of 1 minute or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time for each calendar quarter during the first full year of operation, and 95 percent, thereafter.

SCHEDULE C

Carbon Monoxide Monitor and Recorder

PARAMETER:

Carbon Monoxide

INSTALLATION:

The continuous carbon monoxide monitor shall be installed at an accessible location where the measurements are representative of the actual concentrations of carbon monoxide in the gases leaving each of the Thermal Oxidizers and shall meet the following installation specifications:

PARAMETERS	SPECIFICATION
Range (parts per million, ppm)	0 to highest concentration anticipated from the source
Calibration Gas Ports	close to the sample point

PERFORMANCE:

The continuous carbon monoxide monitor shall meet the following minimum performance specifications for the following parameters:

PARAMETERS	SPECIFICATION
Span Value (nearest ppm equivalent)	2 times the average normal concentration of the source
Relative Accuracy	< 10 percent of the mean value of the reference method test
Calibration Error	< 2 percent of actual concentration
System Bias	< 4 percent of the mean value of the reference method test

Procedure for Zero and Span Calibration Check	all system components check
Zero Calibration Drift (24-hour)	< 5 percent of span value
Span Calibration Drift (24-hour)	< 5 percent of span value
Response Time (90 percent response to step change)	< 90 seconds
Operational Test Period	> 168 hours without corrective maintenance

CALIBRATION:
Daily calibration drift checks on the monitor shall be performed and recorded when each of the Thermal Oxidizers are operating and in accordance with the requirements of Report EPS 1/PG/7.

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 2 minutes or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time for each calendar quarter during the first full year of operation, and 95 percent, thereafter when each of the Thermal Oxidizers is operating.

SCHEDULE D

Continuous Oxygen Monitor and Recorder

INSTALLATION:

The continuous oxygen monitor shall be installed at an accessible location where the measurements are representative of the actual concentrations of oxygen in the gases leaving each of the Thermal Oxidizers and shall meet the following installation specifications:

PARAMETERS	SPECIFICATION
Range (percentage)	0 to highest concentration anticipated from the source
Calibration Gas Ports	close to the sample point

PERFORMANCE:
The continuous oxygen monitor shall meet the following minimum performance specifications for the following parameters:

PARAMETERS	SPECIFICATION
Span Value (percentage)	2 times the average normal concentration of the source
Relative Accuracy	< 10 percent of the mean value of the reference method test
Calibration Error	0.25 percent O2
System Bias	< 4 percent of the mean value of the reference method test
Procedure for Zero and Span Calibration Check	all system components checked
Zero Calibration Drift (24-hour)	< 0.5 percent O2
Span Calibration Drift (24-hour)	< 0.5 percent O2
Response Time (90 percent of full scale)	< 90 seconds
Operational Test Period	> 168 hours without corrective maintenance

CALIBRATION:
Daily calibration drift checks on the monitor shall be performed and recorded when each of the Thermal Oxidizers is operating and in accordance with the requirements of Report EPS 1/PG/7.

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 2 minutes or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time for each calendar quarter during the first full year of operation, and 95 percent, thereafter when each of the Thermal Oxidizers is operating.

SCHEDULE E

Flaring Event Emission Summary and Dispersion Modelling Report

1. A Flaring Event Emission Summary and Dispersion Modelling Report required by condition 8.5. shall be prepared in accordance with the following requirements:

2. The Flaring Event Emission Summary and Dispersion Modelling Report need only be prepared with respect to discharges of Phosphine, Phosphorous Pentoxide and

Phosphoric Acid during each Flaring Event and need not list all contaminants that are discharged from the Facility, despite anything to the contrary in section 26 of O.Reg. 419/05; the Flaring Event Emission Summary and Dispersion Modelling Report must include all discharges of these contaminants from all sources of these contaminants at the Facility in accordance with section 3 and 26 of O.Reg. 419/05;

3. The Flaring Event Emission Summary and Dispersion Modelling Report shall be prepared with respect to each discharge of Phosphine, Phosphorous Pentoxide and Phosphoric Acid for 1-hour and 24-hour averaging periods for each Flaring Event;

4. Despite Section 10 of O.Reg. 419/05, an approved dispersion model shall be used in accordance with a scenario that uses actual operating data for the Facility during each Flaring Event;

5. Despite Section 11 of O.Reg. 419/05, an approved dispersion model shall be used with an emission rate that is an accurate reflection of the emission rate of each contaminant during each Flaring Event, reflected through the use and input of variable emissions by hour;

6. Where the Flaring Event Emission Summary and Dispersion Modelling Report is being prepared with respect to a 1-hour averaging period, the rolling hour during each Flaring Event that would result in the highest concentration of the contaminant at a Point of Impingement must be used; and

7. The approved dispersion model shall be used with local meteorological data approved under paragraph 3 of subsection 13 (1) of O.Reg. 419/05 as an accurate reflection of meteorological and local land use conditions during the period of each Flaring Event.

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

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

3. **DOCUMENTATION REQUIREMENTS**
   Condition No. 5 is included to require the Company to maintain ongoing documentation that demonstrates compliance with the performance limits as specified in Condition 4 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.

4. **REPORTING REQUIREMENTS**
   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.

5. **OPERATION AND MAINTENANCE**
   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.

6. **FLARE OPERATIONS**
   Condition No. 8 is included to require the Company to develop documentation and maintain records that require best management practices to reduce the potential for Flaring Events.

7. **COMPLAINTS RECORDING AND REPORTING PROCEDURE**
   Condition No. 9 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.

8. **RECORD KEEPING REQUIREMENTS**
   Condition No. 10 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 as specified in Condition 4 of this

Approval is necessary.

9. **EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS**
   Condition No. 11 is included to outline the specific operational limits considered necessary to prevent an adverse effect resulting from the operation of each of the Thermal Oxidizers. This condition is also included to emphasize that the Thermal Oxidizers must be operated according to a procedure that will result in compliance with the EPA, the regulations and this Approval.
10. **CONTINUOUS MONITORING**
    Condition No. 12 is included to require the Company to gather accurate information on a continuous basis so that compliance with the EPA, the regulations and this Approval can be verified.
11. **REVOCATION OF PREVIOUS APPROVALS**
    Condition No. 13 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). 1282-AQRMJB issued on December 19, 2017

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, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks 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:

a. 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;
b. 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:

1. The name of the appellant;
2. The address of the appellant;

3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. 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:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Minister of the Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto, Ontario
M7A 2J3

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** 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 https://ero.ontario.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 3rd day of February, 2022

Bijal Shah, P.Eng.
Director
appointed for the purposes of Part II.1 of the *Environmental Protection Act*

MS/
c: District Manager, MECP Niagara
Heidi Kelly, Cytec Canada Inc.

Content Copy Of Original

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 3197-8LNHYU
Notice No. 1
Issue Date: September 7, 2012

Cytec Canada Inc.
9061 Garner Rd
Niagara Falls, Ontario
L2E 6S5

Site Location: Cytec Welland Plant
9061 Garner Rd
Niagara Falls City, Regional Municipality Of Niagara
L2E 6T4

You are hereby notified that I have amended Approval No. 3197-8LNHYU issued on December 13, 2011 for a phosphine and phosphine derivatives facility compring of phosphine plant including derviatives section, purification , mixing and packaging section, research and development pilot plant, one (1) existing modified natural gas fired thermal oxidizer, one (1) existing emergency flare, one (1) new natural gas fired thermal oxidizer, one (1) new emergency flare, two (2) boilers including equipment and processes and support processes ***operating at a maximum production rate of up to 40,000 tonnes per year*** *of phosphine based chemicals , as follows:*

- revisions to conditions:

- 10. 1 (b) remove the term " undiluted" ie carbon monoxide at an accesible location where the measurements are representative of the actual concentrations of carbon monoxide in the gases leaving the new Thermal Oxidizer.

remove the term " undiluted" from Schedule "C" ie "The continuous carbon monoxide monitor shall be installed at an accessible location where the measurements are representative of the actual concentrations of carbon monoxide in the gases leaving the new Thermal Oxidizer and shall meet the following ..."

- 10.1 (c) remove the term " undiluted" ie oxygen at an accesible location where the measurements are representative of the actual concentrations of oxygen in the gases leaving the new Thermal Oxidizer.

remove the term " undiluted" from Schedule "D" ie "The continuous oxygen monitor shall be installed at an accessible location where the measurements are representative of the actual concentrations of oxygen in the gases leaving the new Thermal Oxidizer and shall meet the following ..."

- 11.1 (a) remove "butene" ie "The *Company* shall perform *Source Testing* to determine the

concentration of phosphorous pentoxide, formaldehyde and tolune in the exhaust stack of each Thermal Oxider."

Add " Furthermore, The *Company* shall perform *Source Testing* to determine concentrations of total hydrocarbons in the exhaust stack of new Thermal Oxider stack, after the quench, venturi scrubber and brink filter."

all in accordance with the email correspondences from Rowan Williams Davies & Irvin Inc. (RWDI) and dated July10 2012 and July 20, 2012 and telephone discussion with Ken Milo of Cytec Canada Inc. dated August 24, 2012.

This Notice shall constitute part of the approval issued under Approval No. 3197-8LNHYU dated December 13, 2011

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. 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:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** 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) 314-4506 or www.ert.gov.on.ca

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

DATED AT TORONTO this 7th day of September, 2012

Ian Parrott, P.Eng.
Director
appointed for the purposes of Part II.1 of the *Environmental Protection Act*

AK/
c: District Manager, MOE Niagara
Sharon Schajnoha, RWDI AIR Inc.

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 3197-8LNHYU
Issue Date: December 13, 2011

Cytec Canada Inc.
9061 Garner Rd
Niagara Falls, Ontario
L2E 6S5

Site Location: Cytec Welland Plant
9061 Garner Rd
Niagara Falls City, Regional Municipality Of Niagara
L2E 6T4

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:

A phosphine and phosphine derivatives facility, consisting of the following process and support units:

- Phosphine Plant including derivatives section;
- Purification, mixing and packaging; and
- Research and development pilot plant;

Existing Modified Source

- one (1) natural gas fired thermal oxidizer designed for a maximum heat input of 7,157,000 kilojoules per hour equipped with an auxiliary natural fired burner having a maximum heat input of 1,265,000 kilojoules per hour, used to incinerate the following streams:

. waste gas comprising of phosphine, nitrogen, isobutylene, butene, low levels of all raw materials and phosphine compounds from the vessel vapour spaces, having a maximum volumetric flow rate of 4.39 standard cubic metres per minute with a maximum heat input of 302,000 kilojoules per hour;
. waste organic liquid, a mixture of organic solvents and phosphine derivatives, consisting of toluene, isopropyl alcohol mixture, octene, organophosphines, diisobutylene, tri-isobutyl phosphine, methyl tosylate, cyclooctadiene, hexene and isopar-M, having a maximum flow rate of 2.5 litres per minute with a maximum heat input of 5,590,000 kilojoules per hour; and
. waste aqueous having a volumetric flow rate of 7.57 litres per minute.

The thermal oxidizer operates at a normal temperature of 871 degrees Celsius with a minimum gas residence time of 2 seconds and is equipped with a continuous monitoring and recording system, a quench section, a venturi scrubber and a mist eliminator comprising of polyester fiber filters, having a dust removal efficiency of not less than 90 percent. The thermal oxidizer temperature will drop to 843 degrees Celsius during swings in operation before the waste organic liquid is shut off;

Existing Sources

- one (1) emergency flare located in the phosphine building equipped with a natural gas fired continuous pilot having a maximum thermal input of 241,000 kilojoules per hour, used to burn spills, releases from safety valves, rupture disk type vents and vapour headspace in reaction vessels. Under the worst case upset, the flare combusts pyrophoric waste gas originating from a safety valve of an autoclave, having a maximum volumetric flow rate of 1262 standard cubic metres per minute;

- two (2) natural gas fired boilers located in the steam plant, each having a total maximum heat input of 13,900,000 kilojoules per hour;

New Sources

- one (1) natural gas fired thermal oxidizer designed for a maximum heat input of 10, 736,000 kilojoules per hour equipped with an auxiliary natural fired burner having a maximum heat input of 1,898,000 kilojoules per hour, used to incinerate the following streams:

. waste gas comprising of phosphine, nitrogen, isobutylene, butane, low levels of all raw materials and phosphine compounds from the vessel vapour spaces, having a maximum volumetric flow rate of 4.39 standard cubic metres per minute with a maximum heat input of 453,000 kilojoules per hour;
. waste organic liquid, a mixture of organic solvents and phosphine derivatives, consisting of toluene, isopropyl alcohol mixture, octene, organophosphines, diisobutylene, tri-isobutyl phosphine methyl tosylate, cyclooctadiene, hexene and isopar-M, having a maximum flow rate of 3.75 litres per minute with a maximum heat input of 8,385,000 kilojoules per hour; and
. waste aqueous having a volumetric flow rate of 11.4 litres per minute.

The thermal oxidizer operates at a normal temperature of 871 degrees Celsius with a volumetric gas flow rate of 8.36 actual cubic metres per second and a minimum gas residence time of 2 seconds, and is equipped with a continuous monitoring and recording system, a quench section, a venturi scrubber and a mist eliminator comprising of polyester fiber filters, having a dust removal efficiency of not less than 90 percent. The thermal oxidizer will drop to 843 degrees Celsius during swings in operation before the waste organic liquid is shut off;

- one (1) emergency flare located in the proposed flare and thermal oxidizer building equipped with a natural gas fired continuous pilot having a maximum thermal input of 242,663 kilojoules per hour, used to burn spills, releases from safety valves, rupture disk type vents and vapour headspace in reaction vessels from the proposed expansion plant. Under the worst case upset, the flare combusts pyrophoric waste gas originating from a safety valve of an autoclave, having a maximum volumetric flow rate of 1262 standard cubic metres per minute; and

- two (2) natural gas fired boilers located in the utilities building, each having a total maximum heat input of 21,797,500 kilojoules per hour;

including the Equipment, processes and any other ancillary and support processes and activities, **operating at a maximum production rate of up to 40,000 tonnes per year** of phosphine based chemicals, exhausting to the atmosphere as described in the ESDM Report.

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

1. "*Acceptable Maximum Ground Level Concentration"* means a concentration accepted by the *Ministry,* as described in the *Guide to Applying for Approval (Air & Noise),* for a *Compound of Concern* listed in the *Original ESDM Report* that has no *Ministry Point of Impingement* Limit and no *Jurisdictional Screening Level,* or the concentration at a *Point of Impingement* exceeds the *Jurisdictional Screening Level.*

2. *"Acoustic Assessment Report"* means the report, prepared in accordance with *Publication NPC-233* and Appendix A of the *Basic Comprehensive User Guide,* by Sharon Schajnoha, RWDI AIR Inc. and dated August 29, 2011, submitted in support of the application, that documents all sources of noise emissions and *Noise Control Measures* present at the *Facility* and includes all up-dated *Acoustic Assessment Reports* as required by the Documentation Requirements conditions of this *Approval* to demonstrate continued compliance with the *Performance Limits* following the implementation of any

Modification.

3. "*Acoustic Assessment Summary Table"* means a table prepared in accordance with the *Basic Comprehensive User Guide* summarising the results of the *Acoustic Assessment Report,* up-dated as required by the Documentation Requirements conditions of this *Approval.*

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

5. "*Approval"* means this entire Approval document and any Schedules to it, including the application and *Supporting Documentation.*

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

7. "*Company"* means Cytec Canada Inc.and includes any successors and assign in accordance with section 19 of the *EPA*.

8. "*Compound of Concern"* means a contaminant that, based on generally available information, may be emitted to the atmosphere in a quantity from the *Facility* that is non-negligible in accordance with section 8 of *O. Reg. 419/05* either in comparison to the relevant *Ministry Point of Impingement Limit* or if a *Ministry Point of Impingement Limit* is not available for the compound then, based on generally available toxicological information, the compound may cause an adverse effect as defined by the *EPA* at a *Point of Impingement.*

9. "*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.*

10. "*Director"* means a person appointed by the Minister pursuant to section 5 of the *EPA*.

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

12. "*Emission Summary Table"* means the most updated table contained in the *ESDM Report,*which is prepared in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* listing the appropriate *Point of Impingement* concentration for each *Compound of Concern* from the *Facility* and providing comparison to the corresponding *Ministry Point of Impingement Limit* or *Maximum Concentration Level Assessment,* or *Jurisdictional Screening Level.*

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

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

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

16. "*Equipment with Specific Operational Limits"* means natural gas fired thermal oxidizers, emergency flares, natural gas fired boilers each with a heat input greater than 10,540,000 kilojoules per hour and any *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other *Equipment* that is specifically referenced in any published *Ministry* document that outlines specific operational guidance that must be considered by the *Director* in issuing an *Approval.*

17. "*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,* is prepared after the issuance of this *Approval* in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* by the *Company* or its consultant, and is periodically updated to incorporate all *Modifications* to and changes on discharge from the *Facility,* as required by the Documentation Requirements conditions of this *Approval.*

18. "*Facility"* means the entire operation located on the property where the *Equipment* is located.

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

Facility that represents the design capacity of the *Facility* and assists in the definition of the operations approved by the *Director*.

20. "*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.

21. "*Log"* means the up-to-date log that is used to track all *Modifications* to the *Facility* since the date of this *Approval* as required by the Documentation Requirements conditions of this *Approval.*

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

23. "*Maximum Concentration Level Assessment"* means the Maximum Concentration Level Assessment for the purposes of an *Approval,* described in the *Basic Comprehensive User Guide,* prepared by a *Toxicologist* using currently available toxicological information, that demonstrates that the concentration at any *Point of Impingement* for a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* is not likely to cause an adverse effect as defined by the *EPA*. The concentration at *Point of Impingement* for a *Compound of Concern* must be calculated in accordance with *O. Reg. 419/05*.

24. "*Ministry"* means the ministry of the government of Ontario responsible for the *EPA* and includes all officials, employees or other persons acting on its behalf.

25. "*Ministry Point of Impingement Limit"* means the applicable Standard listed in Schedule 2 or 3 of *O.Reg. 419/05* or a limit listed in the *Ministry* publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution - Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)", dated February 2008, as amended.

26. "*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 atmosphere or discharge or alter noise or vibration emissions from the *Facility*.

27. "*Noise Control Measures"* means measures to reduce the noise emissions from the *Facility* and/or *Equipment* including, but not limited to, silencers, acoustic louvres, enclosures, absorptive treatment, plenums and barriers.

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

29. "*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 Rowan Williams Davies & Irwin Inc. (RWDI) and dated August 29, 2011 submitted in support of the application, and includes any changes to the report made up to the date of issuance of this *Approval.*

30. "*Performance Limits"* means the performance limits specified in Condition 3.2 of this *Approval* titled Performance Limits.

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

32. "*Point of Reception"* means Point of Reception as defined by *Publication NPC-205* and/or *Publication NPC-232,* as applicable.

33. "*Pre-Test Information*" means the information outlined in Section 1 of the Source Testing Code.

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

35. "*Processes with Significant Environmental Aspects"* means the *Equipment* which, during regular operation, would discharge a contaminant or contaminants into the atmosphere at an amount which is not considered as negligible in

accordance with section 8 of *O. Reg. 419/05* and the *Procedure Document.*

36. "*Publication NPC-205"* means the *Ministry* Publication NPC-205, “Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)”, October, 1995, as amended.

37. "*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.

38. "*Publication NPC-232"* means the *Ministry* Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995, as amended.

39. "*Publication NPC-233"* means the *Ministry* Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended.

40. *Schedule A - Supporting Documentation*

41. *Schedule B* - Continuous Temperature Monitor and Recorder.

42. *Schedule C* - Carbon Monoxide Monitor and Recorder.

43. *Schedule D* - Continuous Oxygen Monitor and Recorder.

44. "*Source Testing*" means sampling and testing on products available to measure emissions resulting from operating each Thermal Oxidizer, used to incinerate waste gas, waste organic liquid and water containing organic under conditions which yield the worst case emissions within the approved range of operating conditions for each Thermal Oxidizer.

45. "*Source Testing Code*" means the Source Testing Code, Version 2, Report No. ARB-66-80, dated November 1980, prepared by the Ministry, as amended.

46. "*Supporting Documentation"* means the documents listed in Schedule A of this *Approval* which forms part of this *Approval.*

47. "Thermal Oxidizer Systems" means the modified existing thermal oxidizer and the proposed new thermal oxidizer each equipped with the quenched section, the venturi scrubber and the mist eliminator.

48. "*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 the *Compound of Concern* in question.

49. "*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 that must be submitted annually to the *Ministry* as required by the section of this *Approval* titled Reporting Requirements.

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 - Continuous Temperature Monitor and Recorder
Schedule C - Continuous Carbon Monoxide Monitor and Recorder

Schedule D - Continuous Oxygen Monitor and Recorder

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 alterations, extensions or replacements are approved in this *Approval* if the future alterations, extensions or replacements are *Modifications* to the *Facility* that:

(a) are within the scope of the intended 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.*

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*. The *Company* shall operate any *Equipment with Specific Operational Limits* approved by this *Approval* in accordance with the *Original ESDM Report* and Condition Nos. 4.0 and 7.0 in this *Approval;* or

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

2.3 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* and an *Acoustic Assessment Report* that incorporate all *Modifications* made to the *Facility* as of the date of the renewal application in the application as supporting information.

3. REQUEST FOR *MAXIMUM CONCENTRATION LEVEL ASSESSMENT* AND *PERFORMANCE LIMITS*

3.1 **REQUEST FOR *MAXIMUM CONCENTRATION LEVEL ASSESSMENT***

3.1.1 If the *Company* proposes to make a *Modification* to the *Facility,* the *Company* shall determine if the proposed *Modification* will result in:

(a) a discharge of a *Compound of Concern* that was not previously discharged; or

(b) an increase in the concentration at a *Point of Impingement* of a *Compound of Concern.*

3.1.2 If a proposed *Modification* mentioned in Condition 3.1.1 will result in the discharge of a *Compound of Concern* that was not previously discharged, the *Company* shall submit a *Maximum Concentration Level Assessment* to the *Director* for review by the *Air Standards Manager* in the following circumstances:

(a) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level.*

(b) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level.*

(c) Prior to the proposed *Modification,* a contaminant was discharged in a negligible amount and the proposed *Modification* will result in the discharge of the contaminant being considered a *Compound of Concern* and the *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level.*

(d) Prior to the proposed *Modification,* a contaminant was discharged in a negligible amount and the proposed *Modification* will result in the discharge of the contaminant being considered a *Compound of Concern.* Additionally, the *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level.*

3.1.3 If a proposed *Modification* mentioned in Condition 3.1.1 will result in an increase in the concentration at a *Point of Impingement* of a *Compound of Concern,* the *Company* shall submit a *Maximum Concentration Level Assessment* to the

Director for review by the *Air Standards Manager* in the following circumstances:

(a) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level* and the concentration at a *Point of Impingement* will exceed the *Acceptable Maximum Ground Level Concentration.*

(b) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level* and the concentration at a *Point of Impingement* will exceed the most recently accepted *Maximum Concentration Level Assessment* submitted under Condition 3.1.2 or this Condition.

(c) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level* and the *Acceptable Maximum Ground Level Concentration.*

(d) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level* and the most recently accepted *Maximum Concentration Level Assessment* submitted under Condition 3.1.2 or this Condition.

(e) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit, Acceptable Maximum Ground Level Concentration* or a *Maximum Concentration Level Assessment* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level.*

3.1.4 Subject to the Operational Flexibility set out in Condition 2 of this *Approval,* the *Company* may make the *Modification* if the submission of a *Maximum Concentration Level Assessment* under Condition 3.1.2 or 3.1.3 is not required.

3.1.5 A *Company* that is required to submit an assessment under Condition 3.1.2 or 3.1.3 shall submit the assessment at least thirty (30) days before the proposed *Modification* occurs.

3.1.6 The *Ministry* shall provide to the *Company* written confirmation of the receipt of the assessment under Condition 3.1.2 or 3.1.3.

3.1.7 If the *Ministry* notifies the *Company* that it does not accept the assessment submitted under Condition 3.1.2 or 3.1.3, the *Company* shall:

(a) revise and resubmit the assessment; or

(b) notify the *Ministry* that the *Company* will not be modifying the *Facility.*

3.1.8 The re-submission under Condition 3.1.7(a) is considered by the *Ministry* as a new submission.

3.1.9 If an assessment is submitted under Condition 3.1.2, the *Company* shall not modify the *Facility* unless the *Ministry* accepts the assessment.

3.1.10 If an assessment is submitted under Condition 3.1.3, the *Company* shall not modify the *Facility* unless the *Ministry:*

(a) accepts the assessment; or

(b) does not respond to the *Company* with respect to the assessment within thirty (30) days from the date of the written confirmation mentioned in Condition 3.1.6.

3.2. ***PERFORMANCE LIMITS***

3.2.1 Subject to Condition 3.2.2, the *Company* shall, at all times, ensure that all *Equipment* that is a source of a *Compound of Concern* is operated to comply with the following *Performance Limits:*

(a) for a *Compound of Concern* that has a *Ministry Point of Impingement Limit,* the maximum concentration of that *Compound of Concern* at any *Point of Impingement* shall not exceed the corresponding *Ministry Point of Impingement Limit;*

(b) for a *Compound of Concern* that has an *Acceptable Maximum Ground Level Concentration* and no *Maximum Concentration Level Assessment,* the maximum concentration of that *Compound of Concern* at any *Point of Impingement*

shall not exceed the corresponding *Acceptable Maximum Ground Level Concentration;*

(c) for a *Compound of Concern* that has a *Maximum Concentration Level Assessment,* the maximum concentration of that *Compound of Concern* at any *Point of Impingement* shall not exceed the most recently accepted corresponding *Maximum Concentration Level Assessment.*

3.2.2 If the *Company* has modified the *Facility* and was not required to submit a *Maximum Concentration Level Assessment* with respect to a *Compound of Concern* under Condition 3.1.2 or 3.1.3, the *Company* shall, at all times, ensure that all *Equipment* that is a source of the *Compound of Concern* is operated such that the maximum concentration of the *Compound of Concern* shall not exceed the concentration listed for the *Compound of Concern* in the most recent version of the *ESDM Report. ESDM Reports* are required to be updated to reflect all *Modifications* under Condition 4.1(a).

3.2.3 The *Company* shall, at all times, ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-205.*

3.2.4 The *Company* shall, at all times, ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207.*

4. DOCUMENTATION REQUIREMENTS

4.1 The *Company* shall, at all times, maintain documentation that describes the current operations of the *Facility,* including but not limited to:

(a) a current *ESDM Report* that demonstrates compliance with the *Performance Limits* for the *Facility* regarding all *Compounds of Concern* and reflects all *Modifications* made at the *Facility;*

(b) a current *Acoustic Assessment Report* that demonstrates compliance with the *Performance Limits* for the *Facility* regarding noise emissions;

(c) an up-to-date *Log* that describes each *Modification* to the *Facility;* and

(d) a record of the changes to the *ESDM Report* and *Acoustic Assessment Report* that documents how each *Modification* is in compliance with the *Performance Limits.*

4.2 The *Company* shall, during regular business hours, make the current *Emission Summary Table* and *Acoustic Assessment Summary Table* available for inspection at the *Facility* by any interested member of the public.

4.3 Subject to Condition 4.5, the *Company* shall prepare and complete no later than Aug. 15 of each year documentation that describes the activities undertaken at the *Facility* in the previous calendar year, including but not limited to:

(a) a list of all *Compounds of Concern* for which a *Maximum Concentration Level Assessment* was submitted to the *Director* for review by the *Air Standards Manager* pursuant to Condition 3.1.2 or 3.1.3 of this *Approval;*

(b) if the *Company* has modified the *Facility* and was not required to submit a *Maximum Concentration Level Assessment* with respect to a *Compound of Concern* under Condition 3.1.2 or 3.1.3, a list and concentration level of all such *Compounds of Concern:*

(c) a review of any changes to *Ministry Point of Impingement Limits* that affect any *Compounds of Concern* emitted from the *Facility;* and

(d) a table of the changes in the emission rate of any *Compound of Concern* and the resultant increase or decrease in the *Point of Impingement* concentration reported in the *ESDM Report.*

4.4 Subject to Condition 4.5, the *Company* shall, at all times, maintain the documentation described in Condition 4.3.

4.5 Conditions 4.3 and 4.4 do not apply if Condition 2.1 has expired.

4.6 The *Company* shall, within three (3) months after the expiry of Condition 2.1 of this *Approval,* update the *ESDM Report* and the *Acoustic Assessment Report* such that they describe the *Facility* as it was at the time that Condition 2.1 of this *Approval* expired.

5. REPORTING REQUIREMENTS

5.1 Subject to Condition 5.2, the *Company* shall provide the *Ministry* and the *Director* no later than Aug. 15 of each year, a *Written Summary Form* that shall include the following:

(a) a declaration that 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* that took place in the previous calendar year that resulted in a change in the previously calculated concentration at the *Point of Impingement* for any *Compound of Concern* or resulted in a change in the sound levels reported in the *Acoustic Assessment Summary Table* at any *Point of Reception.*

5.2 Condition 5.1 does not apply if Condition 2.1 has expired.

6. OPERATION AND MAINTENANCE

6.1 The *Company* shall prepare and implement, not later than three (3) months from the commissioning of the *Equipment,* 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 prevent upset conditions;

(c) procedures to minimize all fugitive emissions;

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

(e) procedures to prevent and/or minimize noise emission;

(f) procedures for record keeping activities relating to the operation and maintenance programs;

(g) procedures to record the use of emergency flares;

(h) the routine and emergency operating and maintenance procedures recommended by Thermal Oxidizer Systems, the continuous monitoring and recording systems and emergency flares suppliers;

(i) the calibration procedures of the continuous monitoring and recording systems;

(j) the operator training which is to be provided by an individual experienced with Thermal Oxidizer Systems and emergency flares;

(k) procedures for optimizing the operation of Thermal Oxidizer Systems and emergency flares to minimize the emissions from Thermal Oxidizer Systems and emergency flares;

(l) the periodic inspection of Thermal Oxidizer Systems and emergency flares which are to be conducted by individuals experienced with Thermal Oxidizer Systems and emergency
flares;

(m) procedures for recording and responding to complaints regarding the operation of Thermal Oxidizer Systems and emergency flares; and

(n) procedures to record the usage rate of chemicals in fumehoods.

6.2 The Company shall ensure that the combustion chamber of thermal oxidizers are not loaded unless the continuous temperature monitoring system is fully operational.

6.3 The Company shall ensure that no substances containing chlorinated and/or fluorinated and/or brominated compounds,

including polyvinyl chloride and Teflon are combusted into thermal oxidizers.

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

7. COMPLAINTS RECORDING PROCEDURE

7.1 If at any time, the *Company* receives any environmental complaints from the public regarding the operation of the *Equipment* approved by this *Approval,* the *Company* shall respond to these complaints according to the following procedure:

(a) the *Company* shall record and number each complaint, either electronically or in a log book, and 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) the *Company,* upon notification of a complaint, shall initiate appropriate steps to determine all possible causes of the complaint, and shall proceed to take the necessary actions to appropriately deal with the cause of the subject matter of the complaint; and

(c) the *Company* shall complete and retain on-site a report written within one (1) week of the complaint date, listing the actions taken to appropriately deal with the cause of the subject matter of the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents**.**

8. RECORD KEEPING REQUIREMENTS

8.1 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.

8.2 The *Company* shall retain, for a minimum of seven (7) years from the date of their creation, except as noted below, all reports, records and information described in this *Approval* and shall include but not be limited to:

(a) If the *Company* has updated the *ESDM Report* in order to comply with Condition 4.1(a) of this *Approval,* a copy of each new version of the *ESDM Report;*

(b) If the *Company* has updated the *Acoustic Assessment Report,* in order to comply with Condition 4.1(b) of this *Approval,* a copy of each new version of the *Acoustic Assessment Report;*

(c) supporting information used in the emission rate calculations performed in the *ESDM Reports* and *Acoustic Assessment Reports* to document compliance with the *Performance Limits* (superseded information must be retained for a period of three (3) years after *Modification);*

(d) the *Log* that describes each *Modification* to the *Facility;*

(e) all documentation prepared in accordance with Condition 4.3 of this *Approval;*

(f) copies of any *Written Summary Forms* provided to the *Ministry* under Condition 5.1 of this *Approval;*

(g) the operating procedures and maintenance programs, including records on the maintenance, repair and inspection of the *Equipment* related to all *Processes with Significant Environmental Aspects;*

(h) the complaints recording procedure, including records related to all environmental complaints made by the public as required by Condition 7.1 of this *Approval;*

(i) all records on maintenance, repair and inspection of the continuous monitoring and recording system, and original date that work was recommended;

(j) all records produced by the continuous monitoring and recording system;

(k) all records on operators training;

(l) all records of the usage rate of chemicals in fumehoods; and

(m) description of all upset conditions associated with the operation of Thermal Oxidizer Systems and flaring incidents and remedial action taken.

9. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

9.1 The *Company* shall ensure that the Thermal Oxidizer Systems, used to incinerate waste gas, waste organic liquid and water containing organic are designed and operated to comply, at all times, with the following performance requirements:

OPERATING PARAMETERS

(a) the temperature in the combustion chamber, as recorded by the continuous monitoring and recording system, shall be at least 871 degrees Celsius throughout the combustion cycle but may drop to 843 degrees Celsius during swings in operation before the waste organic liquid is shut
off ; and

(b) the minimum residence time of the combustion gases in the combustion chamber shall be 2.0 seconds for the existing Thermal Oxidizer System and the new Thermal Oxidizer System, both operating at a temperature of not less than 843 degrees Celsius.

10. CONTINUOUS MONITORING

10.1 The *Company* shall install, conduct and maintain a program to continuously monitor:

(a) the temperature at the location in the combustion chamber of the new Thermal Oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 843 degrees Celsius at 2 seconds is achieved.

> The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule "B".

(b) carbon monoxide at an accessible location where the measurements are representative of the actual concentrations of carbon monoxide in the undiluted gases leaving the new Thermal Oxidizer.

> The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule "C".

(C) oxygen at an accessible location where the measurements are representative of the actual concentrations of oxygen in the undiluted gases leaving the new Thermal Oxidizer.

> The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule "D".

11. MONITORING

11.1 The *Company* shall monitor the operation of each Thermal Oxidizer and its emissions as follows:

SOURCE TESTING

(a) The *Company* shall perform *Source Testing* to determine the concentration of phosphorous pentoxide, butene, formaldehyde and toluene and in the exhaust stack of each Thermal Oxidizer.

(b) The *Company* shall submit, not later than three (3) months after issuance of the *Certificate*, to the *Manager* a test

protocol, including the *Pre-Test Information* for the *Source Testing* required by the *Source Testing Code*. The *Company* shall finalize the test protocol in consultation with the *Manager*.

(c) The *Company* shall not commence the *Source Testing* until the *Manager* has accepted the test protocol.

(d) The *Company* shall complete the *Source Testing* not later than three (3) months after the *Manager* has accepted the test protocol.

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

(f) The *Company* shall submit a report on the *Source Testing* to the *District Manager* and the *Manager* not later than two (2) months after completing the *Source Testing*. The report shall be in the format described in the *Source Testing Code*, and shall also include:

(i) an executive summary;

(ii) records of all operating conditions;

(iii) results of all calculations for concentrations of phosphorous pentoxide, butene, formaldehyde and toluene;

(iv) results of dispersion calculations at a *Point of Impingement* in accordance to Regulation 419/05, from the operation of Thermal Oxidizer Systems, indicating the maximum concentration of at the *Point of Impingement*.

(g) The *Director* may not accept the results of the *Source Testing* if:

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

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

(iii) the *Company* failed to provide a complete report on the *Source Testing*;

(h) If the *Director* does not accept the results of the *Source Testing*, the *Director* may require re-testing.

(i) The Source Testing for each Thermal Oxidizer shall be conducted in consultation with the District Manager.

12. REVOCATION OF PREVIOUS APPROVALS

12.1 This *Approval* replaces and revokes all Certificates of Approval (Air) issued under section 9 EPA and dated prior to the date of this *Approval.*

SCHEDULE A

Supporting Documentation

(a) Application for Approval (Air & Noise), dated August 24, 2011 signed by Rene Lemay, Site Manager and submitted by the C*ompany;*

(b) Emission Summary and Dispersion Modelling Report, prepared by Rowan Williams Davies & Irwin Inc. (RWDI) and dated August 29, 2011 dated ;

(c) Acoustic Assessment Report dated August 29, 2011 and signed by Sharon Schajnoha, RWDI AIR Inc.

(d) The letter (e-mail) dated October 14, 2011 signed by Benjamin Coulson, RWDI AIR Inc.

(e) Other supporting documentation, including:

(1) correspondence from Sharon Schajnoha of RWDI AIR Inc. to Asad Khaja of the Ontario Ministry of the Environment dated September 26, 2011, October 20, 2011, November 3, 2011and November 4, 2011 including the supporting documentation;

(f) All other supporting information associated with the application.

SCHEDULE "B"

PARAMETER: TEMPERATURE

LOCATION:

The sample point for the continuous temperature monitor shall be located in the combustion chamber of each Thermal Oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 843 degrees Celsius at about 2.0 seconds is achieved.

PERFORMANCE:

The continuous temperature monitor shall meet the following minimum performance specifications for the following parameters.

	PARAMETERS	SPECIFICATION
1.	Type:	shielded "K" type thermocouple, or equivalent
2.	Accuracy:	± 1.5 percent of the minimum gas temperature

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor without a significant loss of accuracy and with a time resolution of 1 minute or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

SCHEDULE "C"

CONTINUOUS CARBON MONOXIDE MONITOR AND DATA RECORDER

INSTALLATION:

The continuous carbon monoxide monitor shall be installed at an accessible location where the measurements are representative of the actual concentrations of carbon monoxide in the undiluted gases leaving the new Thermal Oxidizer and shall meet the following installation specifications:

	PARAMETERS	SPECIFICATION
1	Range (parts per million, ppm):	0 to highest concentration anticipated from the source
2	Calibration Gas Ports:	close to the sample point

PERFORMANCE:

The continuous carbon monoxide monitor shall meet the following minimum performance specifications for the following parameters:

	PARAMETERS	SPECIFICATION
1	Span Value (nearest ppm equivalent):	2 times the average normal concentration of the source
2	Relative Accuracy:	≤ 10 percent of the mean value of the reference method test
3	Calibration Error:	≤ 2 percent of actual concentration
4	System Bias:	≤ 4 percent of the mean value of the reference method test
5	Procedure for Zero and Span Calibration Check:	all system components check
6	Zero Calibration Drift (24-hour):	≤ 5 percent of span value
7	Span Calibration Drift (24-hour):	≤ 5 percent of span value
8	Response Time (90 percent response to step change):	≤ 90 seconds
9	Operational Test Period :	≥ 168 hours without corrective maintenance

CALIBRATION:

Daily calibration drift checks on the monitor shall be performed and recorded when the new Thermal Oxidizer is operating and in accordance with the requirements of Report EPS 1/PG/7.

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 2 minutes or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time for each calendar quarter during the first full year of operation, and 95 percent, thereafter when the new Thermal Oxidizer is operating.

SCHEDULE "D"

CONTINUOUS OXYGEN MONITOR AND DATA RECORDER

INSTALLATION:

The continuous oxygen monitor shall be installed at an accessible location where the measurements are representative of the actual concentrations of oxygen in the undiluted gases leaving the new Thermal Oxidizer and shall meet the following installation specifications:

	PARAMETERS	SPECIFICATION
1	Range (percentage):	0 to highest concentration anticipated from the source
2	Calibration Gas Ports:	close to the sample point

PERFORMANCE:

The continuous oxygen monitor shall meet the following minimum performance specifications for the following parameters:

	PARAMETERS	SPECIFICATION
1	Span Value (percentage):	2 times the average normal concentration of the source
2	Relative Accuracy:	≤ 10 percent of the mean value of the reference method test
3	Calibration Error:	0.25 percent O2
4	System Bias:	≤ 4 percent of the mean value of the reference method test
5	Procedure for Zero and Span Calibration Check:	all system components checked
6	Zero Calibration Drift (24-hour):	≤ 0.5 percent O2
7	Span Calibration Drift (24-hour):	≤ 0.5 percent O2
8	Response Time (90 percent of full scale):	≤ 90 seconds
9	Operational Test Period:	≥ 168 hours without corrective maintenance

CALIBRATION:

Daily calibration drift checks on the monitor shall be performed and recorded when the new Thermal Oxidizer is operating and in accordance with the requirements of Report EPS 1/PG/7.

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 2 minutes or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time for each calendar quarter during the first full year of operation, and 95 percent, thereafter when the new Thermal Oxidizer is operating.

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

GENERAL

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

LIMITED OPERATIONAL FLEXIBILITY, REQUEST FOR *MAXIMUM CONCENTRATION LEVEL ASSESSMENT* AND *PERFORMANCE LIMITS*

Conditions No. 2 and 3 are included to limit and define the *Modifications* permitted by this *Approval,* and to set out the circumstances in which the *Company* shall submit a *Maximum Concentration Level Assessment* 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

Condition No. 4 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

Condition No. 5 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

Condition No. 6 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 PROCEDURE

Condition No. 7 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

Condition No. 8 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.

EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

Condition No. 9 is included to outline the specific operational limits considered necessary to prevent an adverse effect resulting from the operation of *Thermal Oxidizer Systems.* This condition is also included to emphasize that *Thermal Oxidizer Systems* must be operated according to a procedure that will result in compliance with the *EPA*, the regulations and this *Approval.*

CONTINUOUS MONITORING

Condition No. 10 is included to require the *Company* to gather accurate information on a continuous basis so that compliance with the *EPA*, the regulations and this *Approval* can be verified.

MONITORING

Condition No. 11 is included to require the *Company* to gather accurate information so that the environmental impact and subsequent compliance with the EPA, the regulations and this can be verified.

REVOCATION OF PREVIOUS APPROVALS

Condition No. 12 is included to identify that this *Approval* replaces all Section 9 Certificate(s) of Approval that have been previously issued for this *Facility.*

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 7785-7BAKT7 issued on April 27, 2008, and

Approval Nos:

5134-5YNRMU issued on June 22, 2002,

3555-54OKW6 issued on November 22, 2001,
8318-4ZUKLX issued on August 23, 2001,
8-2279-96-976 issued on January 31, 1997,
8-2149-98-006 issued on December 9, 1998,
8-2207-98-006 issued on November 26, 1998,
8-2169-92-006 issued on August 25, 1992,
8-2213-96-006 issued on November 8, 1996,
8-2132-85-977 issued on February 20, 1997,
8-2032-89-006 issued on July 26, 1989,
8-2095-97-006 issued on June 11, 1997,
8-2099-92-006 issued on May 28, 1992,
8-2080-92-938 issued on May 26, 1993,
8-2284-97-986 issued on February 20, 1998,
8-2249-92-936 issued on February 16, 1993,
8-2207-92-006 issued on December 4, 1992,
8-2023-92-006 issued on March 9, 1992,
8-2110-86-006 issued on June23, 1986,
8-2051-95-006 issued on May 15, 1995,
8-2125-85-006 issued on November 21, 1985,
8-2027-82-82-877 issued on October 21, 1996,
8-2080-92-007 issued on August 25, 1992,
8-2047-82-877 issued on July 13, 1987, and
8-2120-80-006 issued on October 28, 1980.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. 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:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of
the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** 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) 314-4506 or www.ert.gov.on.ca**

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

DATED AT TORONTO this 13th day of December, 2011

Ian Greason, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

AK/
c: District Manager, MOE Niagara
Sharon Schajnoha, RWDI AIR Inc.

Ontario

Ministry of the Environment **Ministère de l'Environnement**

AMENDED CERTIFICATE OF APPROVAL
AIR
NUMBER 7785-7BAKT7
Issue Date: April 27, 2008

Cytec Canada Inc.
9061 Garner Rd
Post Office Box, No. 240
Niagara Falls, Ontario
L2E 6T4

Site Location: Cytec Welland Plant
9061 Garner Rd
Niagara Falls City, Regional Municipality Of Niagara
L2E 6T4

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

Description Section

A phosphine and phosphine derivatives facility, consisting of the following process and support units:

- Phosphine Plant including derivatives section;
- Purification, mixing and packaging; and
- Research and development pilot plant;

- one (1) natural gas fired thermal oxidizer designed for a maximum heat input of 6,851,000 kilojoules per hour equipped with an auxiliary natural fired burner having a maximum heat input of 1,265,000 kilojoules per hour, used to incinerate the following streams:

. waste gas comprising of phosphine, nitrogen, isobutylene, butene, low levels of all raw materials and phosphine compounds from the vessel vapour spaces, having a maximum volumetric flow rate of 4.39 standard cubic metres per minute with a maximum heat input of 6,838,000 kilojoules per hour;
. waste organic liquid, a mixture of organic solvents and phosphine derivatives, consisting of toluene, isopropyl alcohol mixture, octene-1/octane, isobutylene, organophosphines, diisobutylene, tri-isobutyl phosphine sulphide, cyclooctadiene, hexene and isopar-M, having a maximum flow rate of 1.9 litres per minute with a maximum heat input of 4,3000,000 kilojoules per hour; and
. water containing organic having a volumetric flow rate of 7.57 litres per minute.

The thermal oxidizer operates at a temperature of 871 degrees Celsius with a gas residence time of 2 seconds and is equipped with a continuous monitoring and recording system, a quench section, a venturi scrubber and a mist eliminator comprising of polyester fiber filters, having a dust removal efficiency of not less than 90 percent.

- one (1) emergency flare located in the phosphine building equipped with a natural gas fired continuous pilot having a maximum thermal input of 241,000 kilojoules per hour, used to burn spills, releases from safety valves, rupture disk type vents and vapour headspace in reaction vessels. Under the worst case upset, the flare combusts pyrophoric waste gas originating from a safety valve of an autoclave, having a maximum volumetric flow rate of 1262 standard cubic metres per minute.

- one (1) natural gas fired boiler located in the steam plant, having a total maximum heat input of 13,900,000 kilojoules per hour;

- one (1) natural gas fired boiler located in the steam plant, having a total maximum heat input of 13,900,000 kilojoules per hour;

including the Equipment, processes and any other ancillary and support processes and activities, **operating at a**

maximum production rate of up to 1063 tonnes per year of phosphine exhausting to the atmosphere as described in the ESDM Report.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

1. *"Air Standards Manager"* means the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, as those duties relate to the conditions of this *Certificate.*

2. *"Basic Comprehensive User Guide"* means the *Ministry* document titled "Basic Comprehensive Certificates of Approval (Air) User Guide" dated April 2004, as amended.

3. *"Certificate"* means this entire certificate of approval document, issued in accordance with section 9 of the *EPA* and includes all the *Schedules,* and the *Supporting Documentation.*

4. *"Company"* means Cytec Canada Inc. that is responsible for the construction or operation of the Facility and includes any successors and assigns.

5. *"Compound of Concern"* means a contaminant that, based on generally available information, may be emitted to the atmosphere in a quantity from any source at the *Facility* that is significant either in comparison to the relevant *Ministry Point of Impingement Limit* or if a *Ministry Point of Impingement Limit* is not available for the compound then, based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the *EPA* at a *Point of Impingement.*

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

7. *"Director"* means any person appointed in writing by the Minister of the Environment pursuant to section 5 of the *EPA* as a Director for the purposes of section 9 of the *EPA*.

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

9. *"Emission Summary Table"* means the table prepared in accordance with O. Reg. 419/05 and the *Procedure Document* listing the appropriate *Point of Impingement* concentrations of each *Compound of Concern* from the Facility and providing comparison to the corresponding *Ministry Point of Impingement Limit* or *Maximum Concentration Level Assessment.*

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

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

12. *"Equipment"* means equipment or processes described in the *ESDM Report,* this *Certificate* and in the *Supporting Documentation* referred to herein and any other equipment or processes.

13. *"Equipment with Specific Operational Limits"* means the natural gas fired thermal oxidizer, emergency flare, natural gas fired boilers each with a heat input greater than10,540,000 kilojoules per hour and any other *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other *Equipment* that is specifically referenced in any published *Ministry* document that outlines specific operational guidance that must be considered by the *Director* in issuing of a Certificate of Approval.

14. *"ESDM Report"* "*ESDM Report*" means the Emission Summary and Dispersion Modelling Report prepared in accordance with the *Procedure Document* by Rowan Williams Davies & Irwin Inc. (RWDI) and dated September 9, 2004 submitted in support of the application, and includes any amendments to the ESDM Report listed in *Schedule A* and all up-dated ESDM Reports prepared as required by the Documentation Requirements conditions of this *Certificate.*

15. *"Facility"* means the entire operation located on the property where the *Equipment* is located.

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

Facility that represents the design capacity of the *Facility* and assists in the definition of the operations approved by the *Director*.

17. *"Log"* means the up-to-date log that is used to track all *Modifications* to the *Facility* since the date of this *Certificate* as required by the Documentation Requirements conditions of this *Certificate.*

18. *"Maximum Concentration Level Assessment"* means the Maximum Concentration Level Assessment for the purposes of a Basic Comprehensive Certificate of Approval, described in the *Basic Comprehensive User Guide,* prepared by a *Toxicologist* using currently available toxicological information, that demonstrates that the concentration at any *Point of Impingement* for a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* is not likely to cause an adverse effect as defined by the *EPA*. The concentration at *Point of Impingement* for a *Compound of Concern* must be calculated in accordance with O. Reg. 419/05.

19. *"Ministry"* means the ministry of the government of Ontario responsible for the *EPA* and includes all officials, employees or other persons acting on its behalf.

20. *"Ministry Point of Impingement Limit"* means the appropriate Standard from Schedule 1, 2 or 3 from O. Reg. 419/05 and if a standard is not provided for a *Contaminant of Concern* the appropriate criteria listed in the *Ministry* publication titled "Summary of O. Reg. 419/05 Standards and Point of Impingement Guidelines and Ambient Air Quality Criteria (AAQCs)", dated December 2005, as amended.

21. *"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 atmosphere.

22. *"Operating Envelope"* means the limits on the *Company's* approved operations set out in Conditions 2.3 to 2.7 of this *Certificate.*

23. *"O. Reg. 419/05"* means Ontario Regulation 419/05, Air Pollution - Local Air Quality.

24. *"Performance Limits"* means the performance limits specified in the section of this *Certificate* titled Performance Limits.

25. *"Point of Impingement"* means any point outside the facility in the natural environment and as defined by s. 2 of O. Reg. 419/05.

26. *"Procedure Document"* means *Ministry* Procedure titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated July 2005, as amended.

27. *"Processes with Significant Environmental Aspects"* means the *Equipment* which, during regular operation or if not properly operated or maintained, may cause or are likely to cause an adverse effect.

28. *"Publication NPC-205"* means the *Ministry* Publication NPC-205, "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October, 1995 as amended.

29. *"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, August 1978, published by the *Ministry.*

30. *"Publication NPC-232"* means the *Ministry* Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995 as amended.

31. *"Schedules"* means the following schedules attached to the *Certificate* and forming part of the *Certificate* namely:

Schedule A - Supporting Documentation
Schedule B - Continuous Temperature Monitor

32. *"Supporting Documentation"* means the documents listed in Schedule A of this *Certificate* which forms part of this *Certificate.*

33. " Thermal Oxidizer System" means the thermal oxidizer equipped with the quenched section, the venturi scrubber and the mist eliminator.

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

35. *"Written Summary"* means the written summary that must be submitted annually to the *Ministry* as required by the Section titled Reporting Requirements of this *Certificate.*

You are hereby notified that this 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 *Certificate,* the *Facility* shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this *Certificate* and in accordance with the application, the *ESDM Report,* plans, specifications and *Supporting Documentation* submitted and the following *Schedules* attached hereto:

Schedule A - Supporting Documentation
Schedule B - Continuous Temperature Monitor

2. OPERATIONAL FLEXIBILITY

2.1 The *Company* may make *Modifications* to the *Facility* in accordance with this *Certificate.*

2.2 Despite Condition 2.1, all *Modifications* made by the *Company* shall be within the *Operating Envelope* of the *Facility* as defined by conditions 2.3 to 2.7.

2.3 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that are outside the scope of the intended operations of the *Facility* as described in the *Description Section.*

2.4 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that result in an increase of the *Facility Production Limit* above the level specified in this *Certificate.*

2.5 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that would add any *Equipment with Specific Operational Limits.* The *Company* shall operate *Equipment with Specific Operational Limits* approved by this *Certificate* in accordance with the original *ESDM Report* and Condition No. 4 in the *Certificate.*

2.6 Despite Condition 2.1, the *Company* shall only make *Modifications* to the *Facility* which comply with the *Performance Limits.*

2.7 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* if the *Modifications* would be subject to the *Environmental Assessment Act.*

2.8 Condition 2.1 of this *Certificate* shall expire on February 1, 2013*,* unless this *Certificate* is revoked prior to this date. Upon expiry of Condition 2.1 of this *Certificate,* the Company shall apply for amendment to include the current *ESDM Report* in Schedule A as *Supporting Documentation* to this *Certificate*.

3. PERFORMANCE LIMITS

3.1 The *Company* shall, at all times, ensure that all *Equipment* that are a source of a *Compound of Concern* from the *Facility* are operated to comply with the following *Performance Limits:*

(a) the maximum concentration of any *Compound of Concern* at a *Point of Impingement* shall not exceed the

corresponding *Ministry Point of Impingement Limit;*

(b) for any *Compound of Concern* that does not have a *Ministry Point of Impingement Limit,* the maximum concentration of any *Compound of Concern* at a *Point of Impingement* shall not be greater than a level assessed as part of the original *ESDM Report; or*

(c) for any *Compound of Concern* that does not have a *Ministry Point of Impingement Limit,* the maximum concentration of any *Compound of Concern* at a *Point of Impingement* shall not be greater than the *Maximum Concentration Level Assessment* submitted to the *Ministry* and accepted by the *Air Standards Manager.*

3.2 The *Company* shall, no later than thirty (30) days prior to:

(a) the introduction of a new *Compound of Concern* that does not have a *Ministry Point of Impingement Limit;*

(b) an increase to the concentration at a *Point of Impingement* of a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* such that the resulting concentration at a *Point of Impingement* will be greater than the level that was reviewed as part of the original *ESDM Report;* or

(c) an increase to the concentration at a *Point of Impingement* of a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* such that the resulting concentration at a *Point of Impingement* will be greater than the corresponding *Maximum Concentration Level Assessment* previously accepted by the *Air Standards Manager;*

submit a proposed or revised *Maximum Concentration Level Assessment* for the *Compound of Concern* to the *Director* for review by the *Air Standards Manager*.

3.3 The *Company* may not use the *Maximum Concentration Level Assessment* prior to thirty (30) days from the date of an acknowledgment letter from the *Ministry* unless the *Company* receives written acceptance by the *Director.*

3.4 If the *Air Standards Manager* does not accept the proposed *Maximum Concentration Level Assessment*, the *Company* shall not introduce or increase the emission rate of the *Compound of Concern* without approval from the *Director.*

3.5 The *Company* shall, at all times, ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-205* and/or *Publication NPC-232,* as applicable.

3.6 The *Company* shall, at all times, ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207.*

4. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

4.1 The *Company* shall ensure that the Thermal Oxidizer System, used to incinerate waste gas, waste organic liquid and water containing organic is designed and operated to comply, at all times, with the following performance requirements:

OPERATING PARAMETERS

(a) the temperature in the combustion chamber, as recorded by the continuous monitoring and recording system, shall be at least 871 degrees Celsius throughout the combustion cycle; and

(b) the residence time of the combustion gases in the combustion chamber shall be 2.0 seconds at a temperature of not less than 871 degrees Celsius.

5. DOCUMENTATION REQUIREMENTS

5.1 The *Company* shall, at all times, maintain documentation that describes the current operations of the *Facility,* including but not limited to:

(a) a current *ESDM Report* that demonstrates compliance with the *Performance Limits* for the *Facility* regarding all *Compounds of Concern;*

(b) an up-to-date *Log* that describes each *Modification* to the *Facility;* and

(c) a record of the changes to the *ESDM Report* that documents how each *Modification* is in compliance with the *Performance Limits.*

5.2 The *Company* shall, during regular business hours, make the current *Emission Summary Table* available for inspection at the *Facility* by any interested member of the public.

6. CONTINUOUS MONITORING

6.1 The *Company* shall install, conduct and maintain a program to continuously monitor:

(a) the temperature at the location in the combustion chamber of the thermal oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 871 degrees Celsius at 2 seconds is achieved.

> The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule "B".

7. REPORTING REQUIREMENTS

7.1 The *Company* shall provide the *District Manager* and the *Director* no later than June 1 of each year, a *Written Summary* of activities undertaken in the previous calendar year that shall include the following:

(a) a signed statement that the *Facility* was in compliance with the *Performance Limits;*

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

(c) a list of each *Compound of Concern* submitted to the *Air Standards Manager* for review in the previous calendar year;

(d) a review of any changes to a *Ministry Point of Impingement Limit* undertaken in the previous calendar year that affect a *Compound of Concern* emitted from the *Facility;*

(e) a tabulated summary of the changes in the emission rate of any *Compound of Concern* and the resultant increase or decrease in the *Point of Impingement* concentration reported in the *ESDM Report* over the previous calendar year; and

(f) the *Emission Summary Table* for the *Facility* as of December 31 from the previous calendar year.

8. OPERATION AND MAINTENANCE

8.1 The *Company* shall prepare and implement, not later than three (3) months from the date of this *Certificate,* operating procedures and maintenance programs for all *Processes with Significant Environmental Aspects.* The *Company* shall ensure that all *Processes with Significant Environmental Aspects* are operated and maintained at all times in accordance with this *Certificate,* the operating procedures and maintenance programs. The operating procedures and maintenance programs shall specify as a minimum:

(a) frequency of inspections and scheduled preventative maintenance;

(b) procedures to prevent upset conditions;

(c) the routine and emergency operating and maintenance procedures recommended by the Thermal Oxidizer System, the continuous monitoring and recording system and the emergency flare suppliers;

(d) the calibration procedures of the continuous monitoring and recording system;

(e) the operator training which is to be provided by an individual experienced with the Thermal Oxidizer System and the

emergency flare;

(f) procedures for optimizing the operation of the Thermal Oxidizer System and the emergency flare to minimize the emissions from the Thermal Oxidizer System and the emergency flare;

(g) the periodic inspection of the Thermal Oxidizer System and the emergency flare which is to be conducted by individuals experienced with the Thermal Oxidizer System and the emergency flare;

(h) procedures for recording and responding to complaints regarding the operation of the Thermal Oxidizer System and the emergency flare;

(i) procedures to record the usage rate of chemicals in fumehoods;

(j) procedures to minimize all fugitive emissions;

(k) no substances containing chlorinated and/or fluorinated compounds, including polyvinyl chloride and Teflon are combusted into the thermal oxidizer;

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

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

8.2 The Company shall ensure that the combustion chamber of the thermal oxidizer is not loaded unless the continuous temperature monitoring system is fully operational.

9. COMPLAINTS RECORDING PROCEDURE

9.1 If at any time, the *Company* receives any environmental complaints from the public regarding the operation of the *Equipment* approved by this *Certificate*, the *Company* shall respond to these complaints according to the following procedure:

(a) the *Company* shall record and number each complaint, either electronically or in a log book, and 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 the address of the complainant, if known;

(b) the *Company*, upon notification of a complaint, shall initiate appropriate steps to determine all possible causes of the complaint, and shall take any action necessary to deal with the cause of the subject matter of the complaint; and

(c) the *Company* shall complete and retain on-site a report written within one (1) week of the complaint date, listing the actions taken to appropriately deal with the cause of the subject matter of the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents**.**

10. RECORD KEEPING REQUIREMENTS

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

10.2 The *Company* shall retain, for a minimum of seven (7) years from the date of their creation, except as noted below, all reports, records and information described in this *Certificate* which shall include but not be limited to:

(a) the *ESDM Report*;

(b) supporting information used in the emission rate calculations performed in the *ESDM Report* to document compliance

with the *Performance Limits* (superseded information must be retained for a minimum period of three (3) years after *Modification*);

(c) the *Log* that describes each *Modification* to the *Facility*;

(d) the *Written Summaries* provided to the *Ministry*;

(e) the operating procedures and maintenance programs, including records on the maintenance, repair and inspection of the *Equipment* related to all *Processes with Significant Environmental Aspects*;

(f) the complaints recording procedure, including records related to all environmental complaints made by the public as required by the section titled Complaints Recording Procedure of this *Certificate.*

(h) all records on maintenance, repair and inspection of the continuous monitoring and recording system, and original date that work was recommended;

(i) all records produced by the continuous monitoring and recording system;

(j) all records on operator training;

(k) all records of the usage rate of chemicals in fumehoods; and

(l) description of all upset conditions associated with the operation of the Thermal Oxidizer System and the emergency flare and remedial action taken.

11. REVOCATION OF PREVIOUS CERTIFICATES OF APPROVAL(Air & Noise)

11.1 This *Certificate* replaces and revokes all Section 9 Certificates of Approval issued to the *Facility* and dated prior to the date of this *Certificate.*

SCHEDULE "A"

Supporting Documentation

Application dated July 25, 2007 signed by Martin Lehman and submitted by the C*ompany* for a Certificate of Approval (Air & Noise) along with the supporting information associated with the application;

Emission Summary and Dispersion Modelling Report, dated September 9, 2004;

Other supporting documentation and correspondence, including:

(a) a memorandum from Scott Shayko of RWDI Inc. to Asad Khaja of the Ontario Ministry of the Environment dated November 23, 2004 including the supporting documentation;

(b) correspondence from Ken Milo of Cytec Canada Inc.to Asad Khaja of the Ontario Ministry of the Environment dated December 10, 2004, January 19, 2005 and January 24, 2005;

(c) correspondence from Scott Shayko of RWDI Inc. to Asad Khaja of the Ontario Ministry of the Environment dated January 4, 2005 including the supporting documentation.

(d) correspondence from Nicole Vadori of RWDI Inc. dated January 18, 2005 including thermal oxidizer calculations by John Zink Process Systems dated October 30, 1980; and heat and mass balance calculations of the thermal oxidizer by R. B. Pinder of Cyanamid Canada Inc. addressed to P. DeAngelis dated October 20, 1980.

(e) correspondence from Dave Cunningham of Cytec Canada Inc. including heat and mass balance calculations of the thermal oxidizer addressed to carried out by Asad Khaja of the Ontario Ministry of the Environment dated February 8, 2005.

(f) correspondence from Ken Milo of Cytec Canada Inc. to Asad Khaja of the Ontario Ministry of the Environment dated July 12, 2005.

SCHEDULE "B"

PARAMETER: TEMPERATURE

LOCATION:

The sample point for the continuous temperature monitor shall be located in the combustion chamber of the thermal oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 871degrees Celsius at about 2.0 seconds is achieved.

PERFORMANCE:

The continuous temperature monitor shall meet the following minimum performance specifications for the following parameters.

	PARAMETERS	SPECIFICATION
1.	Type:	shielded "K" type thermocouple, or equivalent
2.	Accuracy:	± 1.5 percent of the minimum gas temperature

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor without a significant loss of accuracy and with a time resolution of 1 minute or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

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

1. GENERAL

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

2. OPERATIONAL FLEXIBILITY AND PERFORMANCE LIMITS

Condition Nos. 2 and 3 are included to limit *Modifications* and define the operating envelope permitted by this *Certificate.* The holder of the *Certificate* 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 *Certificate* places performance based limits that can not be exceeded under the terms of this *Certificate. Certificate* 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.*

3. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

Condition No. 4 is included to outline the specific operational limits considered necessary to prevent an adverse effect resulting from the operation of the Thermal Oxidizer System. This condition is also included to emphasize that the Thermal Oxidizer System must be operated according to a procedure that will result in compliance with the Act, the regulations and this Certificate.

4. DOCUMENTATION REQUIREMENTS

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

5. MONITORING

Condition No. 6 is included to require the Company to gather accurate information so that the environmental impact and subsequent compliance with the Act, the regulations and this Certificate can be verified.

6. REPORTING REQUIREMENTS

Condition No. 7 is included to require the *Company* to provide a yearly *Written Summary* to the *Ministry.*

7. OPERATION AND MAINTENANCE

Condition No. 8 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.

8. COMPLAINTS RECORDING PROCEDURE

Condition No. 9 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.

9. RECORD KEEPING REQUIREMENTS

Condition No. 10 is included to require the *Company* to retain all documentation related to this *Certificate* and provide access to *Ministry* staff, upon request, so that the *Ministry* can determine if a more detailed review of compliance with the *Performance Limits* is necessary.

10. REVOCATION OF PREVIOUS CERTIFICATES OF APPROVAL (Air & Noise)

Condition No. 11 is included to confirm that this *Certificate* replaces all Section 9 Certificate(s) of Approval that have been previously issued for this *Facility.*

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 9339-6FSGKB issued on September 21, 2005

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the 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.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

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

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., Suite 1700
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 27th day of April, 2008

Victor Low, P.Eng.
Director
Section 9, *Environmental Protection Act*

AK/
c: District Manager, MOE Niagara
Ken Milo, Cytec Canada Inc.

Ontario

Ministry of the Environment

Ministère de l'Environnement

AMENDED CERTIFICATE OF APPROVAL
AIR
NUMBER 9339-6FSGKB
Issue Date: September 21, 2005

Cytec Canada Inc.
9061 Garner Road, P.O. Box 240
Niagara Falls, Ontario
L2E 6T4

Site Location: Cytec Welland Plant
9061 Garner Road
Niagara Falls City, Regional Municipality Of Niagara
L2E 6T4

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

Description Section

A phosphine and phosphine derivatives facility, consisting of the following process and support units:

- Phosphine Plant including derivatives section;
- Purification, mixing and packaging; and
- Research and development pilot plant;

- one (1) natural gas fired thermal oxidizer designed for a maximum heat input of 6,851,000 kilojoules per hour equipped with an auxiliary natural fired burner having a maximum heat input of 1,265,000 kilojoules per hour, used to incinerate the following streams:

. waste gas comprising of phosphine, nitrogen, isobutylene, butene, low levels of all raw materials and phosphine compounds from the vessel vapour spaces, having a maximum volumetric flow rate of 4.39 standard cubic metres per minute with a maximum heat input of 6,838,000 kilojoules per hour;
. waste organic liquid, a mixture of organic solvents and phosphine derivatives, consisting of toluene, isopropyl alcohol mixture, octene-1/octane, isobutylene, organophosphines, diisobutylene, tri-isobutyl phosphine sulphide, cyclooctadiene, hexene and isopar-M, having a maximum flow rate of 1.14 litres per minute with a maximum heat input of 2,578,000 kilojoules per hour; and
. water containing organic having a volumetric flow rate of 7.57 litres per minute.

The thermal oxidizer operates at a temperature of 871 degrees Celsius with a gas residence time of 2 seconds and is equipped with a continuous monitoring and recording system, a quench section, a venturi scrubber and a mist eliminator comprising of polyester fiber filters, having a dust removal efficiency of not less than 90 percent.

- one (1) emergency flare located in the phosphine building equipped with a natural gas fired continuous pilot having a maximum thermal input of 241,000 kilojoules per hour, used to burn spills, releases from safety valves, rupture disk type vents and vapour headspace in reaction vessels. Under the worst case upset, the flare combusts pyrophoric waste gas originating from a safety valve of an autoclave, having a maximum volumetric flow rate of 1262 standard cubic metres per minute.

- one (1) natural gas fired boiler located in the steam plant, having a total maximum heat input of 13,900,000 kilojoules per hour;

- one (1) natural gas fired boiler located in the steam plant, having a total maximum heat input of 13,900,000 kilojoules per hour;

including the Equipment, processes and any other ancillary and support processes and activities, **operating at a**

maximum production rate of up to 1063 tonnes per year of phosphine exhausting to the atmosphere as described in the ESDM Report.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

1. "*Air Standards Manager*" means the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, as those duties relate to the conditions of this *Certificate*.

2. "*Basic Comprehensive User Guide*" means the *Ministry* document titled "Basic Comprehensive Certificates of Approval (Air) User Guide" dated April 2004.

3. "*Certificate*" means this entire certificate of approval document, issued in accordance with section 9 of the *EPA* and includes all the *Schedules*, and the *Supporting Documentation*.

4. "*Company*" means Cytec Canada Inc. that is responsible for the construction or operation of the *Facility*and includes any successors and assigns.

5. "*Compound of Concern*" means a contaminant that, based on generally available information, may be emitted to the atmosphere in a quantity from any source at the *Facility* that is significant either in comparison to the relevant *Ministry Point of Impingement Limit* or if a *Ministry Point of Impingement Limit* is not available for the compound then, based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the *EPA* at a *Point of Impingement*.

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

7. "*Director*" means any person appointed in writing by the Minister of the Environment pursuant to section 5 of the *EPA* as a Director for the purposes of section 9 of the *EPA*.

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

9. "*Emission Summary Table*" means the table prepared in accordance with the *Procedure Document* listing the maximum half hour average *Point of Impingement* concentrations of each *Compound of Concern* from the *Facility* and providing comparison to the corresponding *Ministry Point of Impingement Limit* or *Maximum Concentration Level Assessment.*

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

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

12. "*Equipment*" means equipment or processes described in the *ESDM Report*, this *Certificate* and in the *Supporting Documentation* referred to herein and any other equipment or processes.

13. "*Equipment with Specific Operational Limits*" means the natural gas fired thermal oxidizer, emergency flare, natural gas fired boilers each with a heat input greater than10,540,000 kilojoules per hour and any other *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other *Equipment* that is specifically referenced in any published *Ministry* document that outlines specific operational guidance that must be considered by the *Director* in issuing of a Certificate of Approval.

14. "*ESDM Report*" means the Emission Summary and Dispersion Modelling Report prepared in accordance with the *Procedure Document* by Rowan Williams Davies & Irwin Inc. (RWDI) and dated September 9, 2004 submitted in support of the application, and includes all up-dated ESDM Reports prepared as required by the Documentation Requirements conditions of this *Certificate*.

15. "*Facility*" means the entire operation located on the property where the *Equipment* is located.

16. "*Facility Production Limit*" means the production limit placed on the main product(s) or raw materials used by the *Facility* that represents the design capacity of the *Facility* and assists in the definition of the operations approved by the *Director*.

17. "*Log*" means the up-to-date log, that is used to track all *Modifications* to the *Facility* since the date of this *Certificate* as required by the Documentation Requirements conditions of this *Certificate*.

18. "*Maximum Concentration Level Assessment*" means the Maximum Concentration Level Assessment for the purposes of a Basic Comprehensive Certificate of Approval, described in the *Basic Comprehensive User Guide,* prepared by a *Toxicologist* using currently available toxicological information, that demonstrates that the predicted concentration at any *Point of Impingement* for a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* is not likely to cause an adverse effect as defined by the *EPA*. The predicted concentration at *Point of Impingement* for a *Compound of Concern* is based on the site specific maximum half hour emission rate scenario documented in the *ESDM Report*.

19. "*Ministry*" means the ministry of the government of Ontario responsible for the *EPA* and includes all officials, employees or other persons acting on its behalf.

20. "*Ministry Point of Impingement Limit*" means the Maximum Half Hour Average Point of Impingement Limit listed in the *Ministry* publication titled "Summary of Point of Impingement Standards, Point of Impingement Guidelines and Ambient Air Quality Criteria (AAQCs)", September 2001.

21. "*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 atmosphere.

22. "*Operating Envelope*" means the limits on the *Company's* approved operations set out in Conditions 2.3 to 2.7 of this *Certificate*.

23. "*Performance Limits*" means the performance limits specified in the section of this *Certificate* titled Performance Limits.

24. "*Point of Impingement*" means any point in the natural environment located outside the *Company's Facility* property boundaries, at which the highest concentration of a *Compound of Concern* is expected to occur, when that concentration is calculated in accordance with the *Procedure Document* using the dispersion models included in the Appendix to Regulation 346 written under the *EPA*, or any other method accepted in writing by the *Director*.

25. "*Pre-Test Information*" means the information outlined in Section 1 of the Source Testing Code.

26. "*Procedure Document*" means *Ministry* Procedure titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated June 1998.

27. "*Processes with Significant Environmental Aspects*" means the *Equipment* which, during regular operation or if not properly operated or maintained, may cause or is likely to cause an adverse effect.

28. "*Publication NPC-205*" means the *Ministry* Publication NPC-205, "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October, 1995.

29. "*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, August 1978, published by the *Ministry*.

30. "*Publication NPC-232*" means the *Ministry* Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995.

31. "*Schedules*" means the schedules attached to the *Certificate* and forming part of the *Certificate*.

32. "*Source Testing*" means sampling and testing on products available to measure emissions resulting from operating the Thermal Oxidizer System used to incinerate waste gas, waste organic liquid and water containing organic under conditions which yield the worst case emissions within the approved range of operating conditions for the Thermal Oxidizer System.

33. "*Source Testing Code*" means the Source Testing Code, Version 2, Report No. ARB-66-80, dated November 1980, prepared by the Ministry, as amended.

34. "*Supporting Documentation*" means the documents listed in Schedule A of this *Certificate* which forms part of this *Certificate*.

35. " Thermal Oxidizer System" means the thermal oxidizer equipped with the quenched section, the venturi scrubber and the mist eliminator.

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

37. "*Written Summary*" means the written summary that must be submitted annually to the *Ministry* as required by the Section titled Reporting Requirements of this *Certificate.*

You are hereby notified that this 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 *Certificate*, the *Facility* shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this *Certificate* and in accordance with the application, the *ESDM Report*, plans, specifications and *Supporting Documentation* submitted and the following *Schedules* attached hereto:

Schedule A - Supporting Documentation
Schedule B - Continuous Temperature Monitor

2. OPERATIONAL FLEXIBILITY

2.1 The *Company* may make *Modifications* to the *Facility* in accordance with this *Certificate.*

2.2 Despite Condition 2.1, all *Modifications* made by the *Company* shall be within the *Operating Envelope* of the *Facility* as defined by conditions 2.3 to 2.7.

2.3 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that are outside the scope of the intended operations of the *Facility* as described in the *Description Section.*

2.4 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that result in an increase of the *Facility Production Limit* above the level specified in this *Certificate.*

2.5 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that would add any *Equipment with Specific Operational Limits.* The *Company* shall operate *Equipment with Specific Operational Limits* approved by this *Certificate* in accordance with the original *ESDM Report* and Condition No. 4 in the *Certificate.*

2.6 Despite Condition 2.1, the *Company* shall only make *Modifications* to the *Facility* which comply with the *Performance Limits*.

2.7 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* if the *Modifications* would be subject to the *Environmental Assessment Act.*

2.8 Condition 2.1 of this *Certificate* shall expire five (5) years from the date of this *Certificate,* unless this *Certificate* is revoked prior to this date. Upon expiry of Condition 2.1 of this *Certificate*, the Company shall apply for amendment to include the current *ESDM Report* in Schedule A as *Supporting Documentation* to this *Certificate*.

3. PERFORMANCE LIMITS

3.1 The *Company* shall, at all times, ensure that all *Equipment* that is a source of a *Compound of Concern* from the *Facility* are operated to comply with the following *Performance Limits*:

(a) the maximum half-hour average concentration of any *Compound of Concern* at a *Point of Impingement* shall not exceed the corresponding *Ministry Point of Impingement Limit;*

(b) for any *Compound of Concern* that does not have a *Ministry Point of Impingement Limit,* the maximum half-hour average concentration of any *Compound of Concern* at a *Point of Impingement* shall not be greater than a level assessed as part of the original *ESDM Report; or*

(c) for any *Compound of Concern* that does not have a *Ministry Point of Impingement Limit,* the maximum half-hour average concentration of any *Compound of Concern* at a *Point of Impingement* shall not be greater than the *Maximum Concentration Level Assessment* submitted to the *Ministry* and accepted by the *Air Standards Manager.*

3.2 The *Company* shall, no later than thirty (30) days prior to:

(a) the introduction of a new *Compound of Concern* that does not have a *Ministry Point of Impingement Limit;*

(b) an increase to the emission rate of a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* such that the resulting concentration at a *Point of Impingement* will be greater than the level that was reviewed as part of the original *ESDM Report*; or

(c) an increase to the emission rate of a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* such that the resulting concentration at a *Point of Impingement* will be greater than the corresponding *Maximum Concentration Level Assessment* previously accepted by the *Air Standards Manager*;

submit a proposed or revised *Maximum Concentration Level Assessment* for the *Compound of Concern* to the *Director* for review by the *Air Standards Manager*.

3.3 The *Company* may not use the *Maximum Concentration Level Assessment* prior to thirty (30) days from the date of an acknowledgment letter from the *Ministry* unless the *Company* receives written acceptance by the *Director.*

3.4 If the *Air Standards Manager* does not accept the proposed *Maximum Concentration Level Assessment*, the *Company* shall not introduce or increase the emission rate of the *Compound of Concern* without approval from the *Director*.

3.5 The *Company* shall, at all times, ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-205* and/or *Publication NPC-232*, as applicable.

3.6 The *Company* shall, at all times, ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207.*

4. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

4.1 The *Company* shall ensure that the Thermal Oxidizer System, used to incinerate waste gas, waste organic liquid and water containing organic is designed and operated to comply, at all times, with the following performance requirements:

OPERATING PARAMETERS

(a) the temperature in the combustion chamber, as recorded by the continuous monitoring and recording system, shall be at least 871 degrees Celsius throughout the combustion cycle; and

(b) the residence time of the combustion gases in the combustion chamber shall be 2.0 seconds at a temperature of not less than 871 degrees Celsius.

5. DOCUMENTATION REQUIREMENTS

5.1 The *Company* shall, at all times, maintain documentation that describes the current operations of the *Facility*, including but not limited to:

(a) a current *ESDM Report* that demonstrates compliance with the *Performance Limits* for the *Facility* regarding all *Compounds of Concern*;

(b) an up-to-date *Log* that describes each *Modification* to the *Facility*; and

(c) a record of the changes to the *ESDM Report* that documents how each *Modification* is in compliance with the *Performance Limits*.

5.2 The *Company* shall, during regular business hours, make the current *Emission Summary Table* available for inspection at the *Facility* by any interested member of the public.

6. MONITORING

6.1 The *Company* shall monitor the operation of the Thermal Oxidizer System and its emissions as follows:

SOURCE TESTING

(a) The *Company* shall perform *Source Testing* to determine the concentration of phosphorous pentoxide in the exhaust stack of the Thermal Oxidizer System.

(b) The *Company* shall submit, not later than three (3) months after issuance of the *Certificate*, to the *Manager* a test protocol, including the *Pre-Test Information* for the *Source Testing* required by the *Source Testing Code*. The *Company* shall finalize the test protocol in consultation with the *Manager*.

(c) The *Company* shall not commence the *Source Testing* until the *Manager* has accepted the test protocol.

(d) The *Company* shall complete the *Source Testing* not later than three (3) months after the *Manager* has accepted the test protocol.

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

(f) The *Company* shall submit a report on the *Source Testing* to the *District Manager* and the *Manager* not later than two (2) months after completing the *Source Testing*. The report shall be in the format described in the *Source Testing Code*, and shall also include:

(i) an executive summary;

(ii) records of all operating conditions;

(iii) results of all calculations for concentrations of phosphorous pentoxide;

(iv) results of dispersion calculations at a *Point of Impingement* in accordance to Regulation 346, from the operation of the Thermal Oxidizer System, indicating the maximum concentration of phosphorous pentoxide at the *Point of Impingement*.

(g) The *Director* may not accept the results of the *Source Testing* if:

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

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

(iii) the *Company* failed to provide a complete report on the *Source Testing*;

(h) If the *Director* does not accept the results of the *Source Testing*, the *Director* may require re-testing.

7. CONTINUOUS MONITORING

7.1 The *Company* shall install, conduct and maintain a program to continuously monitor:

(a) the temperature at the location in the combustion chamber of the thermal oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 871 degrees Celsius at 2 seconds is achieved.

The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule "B".

8. REPORTING REQUIREMENTS

8.1 The *Company* shall provide the *District Manager* and the *Director* no later than June 1 of each year, a *Written Summary* of activities undertaken in the previous calendar year that shall include the following:

(a) a signed statement that the *Facility* was in compliance with the *Performance Limits*;

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

(c) a list of each *Compound of Concern* submitted to the *Air Standards Manager* for review in the previous calendar year;

(d) a review of any changes to a *Ministry Point of Impingement Limit* undertaken in the previous calendar year that affect a *Compound of Concern* emitted from the *Facility*;

(e) a tabulated summary of the changes in the emission rate of any *Compound of Concern* and the resultant increase or decrease in the *Point of Impingement* concentration reported in the *ESDM Report* over the previous calendar year; and

(f) the *Emission Summary Table* for the *Facility* as of December 31 from the previous calendar year.

9. OPERATION AND MAINTENANCE

9.1 The *Company* shall prepare and implement, not later than three (3) months from the date of this *Certificate,* operating procedures and maintenance programs for all *Processes with Significant Environmental Aspects.* The *Company* shall ensure that all *Processes with Significant Environmental Aspects* are operated and maintained at all times in accordance with this *Certificate,* the operating procedures and maintenance programs. The operating procedures and maintenance programs shall specify as a minimum:

(a) frequency of inspections and scheduled preventative maintenance;

(b) procedures to prevent upset conditions;

(c) the routine and emergency operating and maintenance procedures recommended by the Thermal Oxidizer System, the continuous monitoring and recording system and the emergency flare suppliers;

(d) the calibration procedures of the continuous monitoring and recording system;

(e) the operator training which is to be provided by an individual experienced with the Thermal Oxidizer System and the emergency flare;

(f) procedures for optimizing the operation of the Thermal Oxidizer System and the emergency flare to minimize the

emissions from the Thermal Oxidizer System and the emergency flare;

(g) the periodic inspection of the Thermal Oxidizer System and the emergency flare which is to be conducted by individuals experienced with the Thermal Oxidizer System and the emergency flare;

(h) procedures for recording and responding to complaints regarding the operation of the Thermal Oxidizer System and the emergency flare;

(i) procedures to record the usage rate of chemicals in fumehoods;

(j) procedures to minimize all fugitive emissions;

(k) no substances containing chlorinated and/or fluorinated compounds, including polyvinyl chloride and Teflon are combusted into the thermal oxidizer;

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

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

9.2 The Company shall ensure that the combustion chamber of the thermal oxidizer is not loaded unless the continuous temperature monitoring system is fully operational.

10. COMPLAINTS RECORDING PROCEDURE

10.1 If at any time, the *Company* receives any environmental complaints from the public regarding the operation of the *Equipment* approved by this *Certificate*, the *Company* shall respond to these complaints according to the following procedure:

(a) the *Company* shall record and number each complaint, either electronically or in a log book, and 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 the address of the complainant, if known;

(b) the *Company*, upon notification of a complaint, shall initiate appropriate steps to determine all possible causes of the complaint, and shall take any action necessary to deal with the cause of the subject matter of the complaint; and

(c) the *Company* shall complete and retain on-site a report written within one (1) week of the complaint date, listing the actions taken to appropriately deal with the cause of the subject matter of the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents**.**

11. RECORD KEEPING REQUIREMENTS

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

11.2 The *Company* shall retain, for a minimum of seven (7) years from the date of their creation, except as noted below, all reports, records and information described in this *Certificate* which shall include but not be limited to:

(a) the *ESDM Report*;

(b) supporting information used in the emission rate calculations performed in the *ESDM Report* to document compliance with the *Performance Limits* (superseded information must be retained for a minimum period of three (3) years after *Modification*);

(c) the *Log* that describes each *Modification* to the *Facility*;

(d) the *Written Summaries* provided to the *Ministry*;

(e) the operating procedures and maintenance programs, including records on the maintenance, repair and inspection of the *Equipment* related to all *Processes with Significant Environmental Aspects*;

(f) the complaints recording procedure, including records related to all environmental complaints made by the public as required by the section titled Complaints Recording Procedure of this *Certificate.*

(h) all records on maintenance, repair and inspection of the continuous monitoring and recording system, and original date that work was recommended;

(i) all records produced by the continuous monitoring and recording system;

(j) all records on operator training;

(k) all records of the usage rate of chemicals in fumehoods; and

(l) description of all upset conditions associated with the operation of the Thermal Oxidizer System and the emergency flare and remedial action taken.

12. REVOCATION OF PREVIOUS CERTIFICATES OF APPROVAL(Air & Noise)

12.1 This *Certificate* replaces and revokes all Section 9 Certificates of Approval issued to the *Facility* and dated prior to the date of this *Certificate*.

SCHEDULE "A"

Application, dated September 24, 2004 and submitted by the Company, for Certificate of Approval (Air);

Emission Summary and Dispersion Modelling Report, dated September 9, 2004;

Other supporting documentation and correspondence, including:

(a) a memorandum from Scott Shayko of RWDI Inc. to Asad Khaja of the Ontario Ministry of the Environment dated November 23, 2004 including the supporting documentation;

(b) correspondence from Ken Milo of Cytec Canada Inc.to Asad Khaja of the Ontario Ministry of the Environment dated December 10, 2004, January 19, 2005 and January 24, 2005;

(c) correspondence from Scott Shayko of RWDI Inc. to Asad Khaja of the Ontario Ministry of the Environment dated January 4, 2005 including the supporting documentation.

(d) correspondence from Nicole Vadori of RWDI Inc. dated January 18, 2005 including thermal oxidizer calculations by John Zink Process Systems dated October 30, 1980; and heat and mass balance calculations of the thermal oxidizer by R. B. Pinder of Cyanamid Canada Inc. addressed to P. DeAngelis dated October 20, 1980.

(e) correspondence from Dave Cunningham of Cytec Canada Inc. including heat and mass balance calculations of the thermal oxidizer addressed to carried out by Asad Khaja of the Ontario Ministry of the Environment dated February 8, 2005.

(f) correspondence from Ken Milo of Cytec Canada Inc. to Asad Khaja of the Ontario Ministry of the Environment dated July 12, 2005.

SCHEDULE "B"

PARAMETER: TEMPERATURE

LOCATION:

The sample point for the continuous temperature monitor shall be located in the combustion chamber of the thermal oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 871degrees Celsius at about 2.0 seconds is achieved.

PERFORMANCE:

The continuous temperature monitor shall meet the following minimum performance specifications for the following parameters.

	PARAMETERS	SPECIFICATION
1.	Type:	shielded "K" type thermocouple, or equivalent
2.	Accuracy:	± 1.5 percent of the minimum gas temperature

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor without a significant loss of accuracy and with a time resolution of 1 minute or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

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

1. GENERAL

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

2. OPERATIONAL FLEXIBILITY AND PERFORMANCE LIMITS

Condition Nos. 2 and 3 are included to limit *Modifications* and define the operating envelope permitted by this *Certificate.* The holder of the *Certificate* 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 *Certificate* places performance based limits that can not be exceeded under the terms of this *Certificate. Certificat*e 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*.

3. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

Condition No. 4 is included to outline the specific operational limits considered necessary to prevent an adverse effect resulting from the operation of the Thermal Oxidizer System. This condition is also included to emphasize that the Thermal Oxidizer System must be operated according to a procedure that will result in compliance with the Act, the regulations and this Certificate.

4. DOCUMENTATION REQUIREMENTS

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

5. MONITORING

Condition No. 6 is included to require the Company to gather accurate information so that the environmental impact and subsequent compliance with the Act, the regulations and this Certificate can be verified.

6. CONTINUOUS MONITORING

Condition No. 7 is included to require the Company to gather accurate information on a continuous basis so that compliance with the Act, the regulations and this Certificate can be verified.

7. REPORTING REQUIREMENTS

Condition No. 8 is included to require the *Company* to provide a yearly *Written Summary* to the *Ministry*.

8. OPERATION AND MAINTENANCE

Condition No. 9 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.

9. COMPLAINTS RECORDING PROCEDURE

Condition No. 10 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.

10. RECORD KEEPING REQUIREMENTS

Condition No. 11 is included to require the *Company* to retain all documentation related to this *Certificate* and provide access to *Ministry* staff, upon request, so that the *Ministry* can determine if a more detailed review of compliance with the *Performance Limits* is necessary.

11. REVOCATION OF PREVIOUS CERTIFICATES OF APPROVAL (Air & Noise)

Condition No. 12 is included to confirm that this *Certificate* replaces all Section 9 Certificate(s) of Approval that have been previously issued for this *Facility*.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 2156-6A4QE5 issued on March 18, 2005.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the 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.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

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

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of Environment and Energy
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 21st day of September, 2005

Victor Low, P.Eng.
Director
Section 9, *Environmental Protection Act*

AK/
c: District Manager, MOE Niagara
Ken Milo, Environmental Coordinator, Cytec Canada Inc.

Ontario

Ministry of the Environment

Ministère de l'Environnement

AMENDED CERTIFICATE OF APPROVAL
AIR
NUMBER 2156-6A4QE5

Cytec Canada Inc.
9061 Garner Road, P.O. Box 240
Niagara Falls, Ontario
L2E 6T4

Site Location: Cytec Plant 9061 Garner Road
9061 Garner Road
Niagara Falls City, Regional Municipality Of Niagara
L2E 6T4

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

Description Section

A phosphine and phosphine derivatives facility, consisting of the following process and support units:

- Phosphine Plant including derivatives section;
- Purification, mixing and packaging; and
- Research and development pilot plant;

- one (1) natural gas fired thermal oxidizer designed for a maximum heat input of 6,851,000 kilojoules per hour equipped with an auxiliary natural fired burner having a maximum heat input of 1,265,000 kilojoules per hour, used to incinerate the following streams:

. waste gas comprising of phosphine, nitrogen, isobutylene, butene, low levels of all raw materials and phosphine compounds from the vessel vapour spaces, having a maximum volumetric flow rate of 4.39 standard cubic metres per minute with a maximum heat input of 6,838,000 kilojoules per hour;
. waste organic liquid, a mixture of organic solvents and phosphine derivatives, consisting of toluene, isopropyl alcohol mixture, octene-1/octane, isobutylene, organophosphines, diisobutylene, tri-isobutyl phosphine sulphide, cyclooctadiene, hexene and isopar-M, having a maximum flow rate of 1.14 litres per minute with a maximum heat input of 2,578,000 kilojoules per hour; and
. water containing organic having a volumetric flow rate of 7.57 litres per minute.

The thermal oxidizer operates at a temperature of 871 degrees Celsius with a gas residence time of 2 seconds and is equipped with a continuous monitoring and recording system, a quench section, a venturi scrubber and a mist eliminator comprising of polyester fiber filters, having a dust removal efficiency of not less than 90 percent.

- one (1) emergency flare located in the phosphine building equipped with a natural gas fired continuous pilot having a maximum thermal input of 241,000 kilojoules per hour, used to burn spills, releases from safety valves, rupture disk type vents and vapour headspace in reaction vessels. Under the worst case upset, the flare combusts pyrophoric waste gas originating from a safety valve of an autoclave, having a maximum volumetric flow rate of 1262 standard cubic metres per minute.

- one (1) natural gas fired boiler located in the steam plant, having a total maximum heat input of 13,900,000 kilojoules per hour;

- one (1) natural gas fired boiler located in the steam plant, having a total maximum heat input of 13,900,000 kilojoules per hour;

including the Equipment, processes and any other ancillary and support processes and activities, **operating at a maximum production rate of up to 1063 tonnes per year** of phosphine exhausting to the atmosphere as described in the

ESDM Report.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

1. "*Air Standards Manager*" means the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, as those duties relate to the conditions of this *Certificate*.

2. "*Basic Comprehensive User Guide*" means the *Ministry* document titled "Basic Comprehensive Certificates of Approval (Air) User Guide" dated April 2004.

3. "*Certificate*" means this entire certificate of approval document, issued in accordance with section 9 of the *EPA* and includes all the *Schedules*, and the *Supporting Documentation*.

4. "*Company*" means Cytec Canada Inc. that is responsible for the construction or operation of the *Facility*and includes any successors and assigns.

5. "*Compound of Concern*" means a contaminant that, based on generally available information, may be emitted to the atmosphere in a quantity from any source at the *Facility* that is significant either in comparison to the relevant *Ministry Point of Impingement Limit* or if a *Ministry Point of Impingement Limit* is not available for the compound then, based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the *EPA* at a *Point of Impingement*.

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

7. "*Director*" means any person appointed in writing by the Minister of the Environment pursuant to section 5 of the *EPA* as a Director for the purposes of section 9 of the *EPA*.

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

9. "*Emission Summary Table*" means the table prepared in accordance with the *Procedure Document* listing the maximum half hour average *Point of Impingement* concentrations of each *Compound of Concern* from the *Facility* and providing comparison to the corresponding *Ministry Point of Impingement Limit* or *Maximum Concentration Level Assessment.*

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

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

12. "*Equipment*" means equipment or processes described in the *ESDM Report*, this *Certificate* and in the *Supporting Documentation* referred to herein and any other equipment or processes.

13. "*Equipment with Specific Operational Limits*" means the natural gas fired thermal oxidizer, emergency flare, natural gas fired boilers each with a heat input greater than10,540,000 kilojoules per hour and any other *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other *Equipment* that is specifically referenced in any published *Ministry* document that outlines specific operational guidance that must be considered by the *Director* in issuing of a Certificate of Approval.

14. "*ESDM Report*" means the Emission Summary and Dispersion Modelling Report prepared in accordance with the *Procedure Document* by Rowan Williams Davies & Irwin Inc. (RWDI) and dated September 9, 2004 submitted in support of the application, and includes all up-dated ESDM Reports prepared as required by the Documentation Requirements conditions of this *Certificate*.

15. "*Facility*" means the entire operation located on the property where the *Equipment* is located.

16. "*Facility Production Limit*" means the production limit placed on the main product(s) or raw materials used by the *Facility* that represents the design capacity of the *Facility* and assists in the definition of the operations approved by the

Director.

17. "*Log*" means the up-to-date log, that is used to track all *Modifications* to the *Facility* since the date of this *Certificate* as required by the Documentation Requirements conditions of this *Certificate*.

18. "*Maximum Concentration Level Assessment*" means the Maximum Concentration Level Assessment for the purposes of a Basic Comprehensive Certificate of Approval, described in the *Basic Comprehensive User Guide,* prepared by a *Toxicologist* using currently available toxicological information, that demonstrates that the predicted concentration at any *Point of Impingement* for a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* is not likely to cause an adverse effect as defined by the *EPA*. The predicted concentration at *Point of Impingement* for a *Compound of Concern* is based on the site specific maximum half hour emission rate scenario documented in the *ESDM Report*.

19. "*Ministry*" means the ministry of the government of Ontario responsible for the *EPA* and includes all officials, employees or other persons acting on its behalf.

20. "*Ministry Point of Impingement Limit*" means the Maximum Half Hour Average Point of Impingement Limit listed in the *Ministry* publication titled "Summary of Point of Impingement Standards, Point of Impingement Guidelines and Ambient Air Quality Criteria (AAQCs)", September 2001.

21. "*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 atmosphere.

22. "*Operating Envelope*" means the limits on the *Company's* approved operations set out in Conditions 2.3 to 2.7 of this *Certificate*.

23. "*Organic Matter*" means organic matter having a carbon content expressed as equivalent methane.

24. "*Performance Limits*" means the performance limits specified in the section of this *Certificate* titled Performance Limits.

25. "*Point of Impingement*" means any point in the natural environment located outside the *Company's Facility* property boundaries, at which the highest concentration of a *Compound of Concern* is expected to occur, when that concentration is calculated in accordance with the *Procedure Document* using the dispersion models included in the Appendix to Regulation 346 written under the *EPA*, or any other method accepted in writing by the *Director*.

26. "*Pre-Test Information*" means the information outlined in Section 1 of the Source Testing Code.

27. "*Procedure Document*" means *Ministry* Procedure titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated June 1998.

28. "*Processes with Significant Environmental Aspects*" means the *Equipment* which, during regular operation or if not properly operated or maintained, may cause or is likely to cause an adverse effect.

29. "*Publication NPC-205*" means the *Ministry* Publication NPC-205, "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October, 1995.

30. "*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, August 1978, published by the *Ministry*.

31. "*Publication NPC-232*" means the *Ministry* Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995.

32. "*Schedules*" means the schedules attached to the *Certificate* and forming part of the *Certificate*.

33. "*Source Testing*" means sampling and testing on products available to measure emissions resulting from operating the Thermal Oxidizer System used to incinerate waste gas, waste organic liquid and water containing organic under conditions which yield the worst case emissions within the approved range of operating conditions for the Thermal Oxidizer System.

34. "*Source Testing Code*" means the Source Testing Code, Version 2, Report No. ARB-66-80, dated November 1980, prepared by the Ministry, as amended.

35. "*Supporting Documentation*" means the documents listed in Schedule A of this *Certificate* which forms part of this *Certificate*.

36. " Thermal Oxidizer System" means the thermal oxidizer equipped with the quenched section, the venturi scrubber and the mist eliminator.

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

38. "*Written Summary*" means the written summary that must be submitted annually to the *Ministry* as required by the Section titled Reporting Requirements of this *Certificate.*

You are hereby notified that this 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 *Certificate*, the *Facility* shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this *Certificate* and in accordance with the application, the *ESDM Report*, plans, specifications and *Supporting Documentation* submitted and the following *Schedules* attached hereto:

Schedule A - Supporting Documentation
Schedule B - Continuous Temperature Monitor

2. OPERATIONAL FLEXIBILITY

2.1 The *Company* may make *Modifications* to the *Facility* in accordance with this *Certificate.*

2.2 Despite Condition 2.1, all *Modifications* made by the *Company* shall be within the *Operating Envelope* of the *Facility* as defined by conditions 2.3 to 2.7.

2.3 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that are outside the scope of the intended operations of the *Facility* as described in the *Description Section.*

2.4 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that result in an increase of the *Facility Production Limit* above the level specified in this *Certificate.*

2.5 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that would add any *Equipment with Specific Operational Limits.* The *Company* shall operate *Equipment with Specific Operational Limits* approved by this *Certificate* in accordance with the original *ESDM Report* and Condition No. 4 in the *Certificate.*

2.6 Despite Condition 2.1, the *Company* shall only make *Modifications* to the *Facility* which comply with the *Performance Limits*.

2.7 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* if the *Modifications* would be subject to the *Environmental Assessment Act.*

2.8 Condition 2.1 of this *Certificate* shall expire five (5) years from the date of this *Certificate,* unless this *Certificate* is revoked prior to this date. Upon expiry of Condition 2.1 of this *Certificate*, the Company shall apply for amendment to include the current *ESDM Report* in Schedule A as *Supporting Documentation* to this *Certificate*.

3. PERFORMANCE LIMITS

3.1 The *Company* shall, at all times, ensure that all *Equipment* that is a source of a *Compound of Concern* from the *Facility* are operated to comply with the following *Performance Limits*:

(a) the maximum half-hour average concentration of any *Compound of Concern* at a *Point of Impingement* shall not exceed the corresponding *Ministry Point of Impingement Limit;*

(b) for any *Compound of Concern* that does not have a *Ministry Point of Impingement Limit,* the maximum half-hour average concentration of any *Compound of Concern* at a *Point of Impingement* shall not be greater than a level assessed as part of the original *ESDM Report; or*

(c) for any *Compound of Concern* that does not have a *Ministry Point of Impingement Limit,* the maximum half-hour average concentration of any *Compound of Concern* at a *Point of Impingement* shall not be greater than the *Maximum Concentration Level Assessment* submitted to the *Ministry* and accepted by the *Air Standards Manager*.

3.2 The *Company* shall, no later than thirty (30) days prior to:

(a) the introduction of a new *Compound of Concern* that does not have a *Ministry Point of Impingement Limit;*

(b) an increase to the emission rate of a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* such that the resulting concentration at a *Point of Impingement* will be greater than the level that was reviewed as part of the original *ESDM Report*; or

(c) an increase to the emission rate of a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* such that the resulting concentration at a *Point of Impingement* will be greater than the corresponding *Maximum Concentration Level Assessment* previously accepted by the *Air Standards Manager*;

submit a proposed or revised *Maximum Concentration Level Assessment* for the *Compound of Concern* to the *Director* for review by the *Air Standards Manager*.

3.3 The *Company* may not use the *Maximum Concentration Level Assessment* prior to thirty (30) days from the date of an acknowledgment letter from the *Ministry* unless the *Company* receives written acceptance by the *Director*.

3.4 If the *Air Standards Manager* does not accept the proposed *Maximum Concentration Level Assessment*, the *Company* shall not introduce or increase the emission rate of the *Compound of Concern* without approval from the *Director*.

3.5 The *Company* shall, at all times, ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-205* and/or *Publication NPC-232*, as applicable.

3.6 The *Company* shall, at all times, ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207*.

4. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

4.1 The *Company* shall ensure that the Thermal Oxidizer System, used to incinerate waste gas, waste organic liquid and water containing organic is designed and operated to comply, at all times, with the following performance requirements:

OPERATING PARAMETERS

(a) the temperature in the combustion chamber, as recorded by the continuous monitoring and recording system, shall be at least 871 degrees Celsius throughout the combustion cycle; and

(b) the residence time of the combustion gases in the combustion chamber shall be 2.0 seconds at a temperature of not less than 871 degrees Celsius.

PERFORMANCE REQUIREMENTS

(c) the concentration of *Organic Matter*, being an average of ten measurements taken at approximately one minute intervals, in the combustion gases emitted into the atmosphere from operating the Thermal Oxidizer System, shall not be greater than 100 parts per million by volume, measured on an undiluted basis.

5. DOCUMENTATION REQUIREMENTS

5.1 The *Company* shall, at all times, maintain documentation that describes the current operations of the *Facility*, including but not limited to:

(a) a current *ESDM Report* that demonstrates compliance with the *Performance Limits* for the *Facility* regarding all *Compounds of Concern*;

(b) an up-to-date *Log* that describes each *Modification* to the *Facility*; and

(c) a record of the changes to the *ESDM Report* that documents how each *Modification* is in compliance with the *Performance Limits*.

5.2 The *Company* shall, during regular business hours, make the current *Emission Summary Table* available for inspection at the *Facility* by any interested member of the public.

6. MONITORING

6.1 The *Company* shall monitor the operation of the Thermal Oxidizer System and its emissions as follows:

SOURCE TESTING

(a) The *Company* shall perform *Source Testing* to determine the concentration of phosphorous pentoxide and *Organic Matter* in the exhaust stack of the Thermal Oxidizer System.

(b) The *Company* shall submit, not later than three (3) months after issuance of the *Certificate*, to the *Manager* a test protocol, including the *Pre-Test Information* for the *Source Testing* required by the *Source Testing Code*. The *Company* shall finalize the test protocol in consultation with the *Manager*.

(c) The *Company* shall not commence the *Source Testing* until the *Manager* has accepted the test protocol.

(d) The *Company* shall complete the *Source Testing* not later than three (3) months after the *Manager* has accepted the test protocol.

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

(f) The *Company* shall submit a report on the *Source Testing* to the *District Manager* and the *Manager* not later than two (2) months after completing the *Source Testing*. The report shall be in the format described in the *Source Testing Code*, and shall also include:

(i) an executive summary;

(ii) records of all operating conditions;

(iii) results of all calculations for concentrations of phosphorous pentoxide and *Organic Matter*;

(iv) results of dispersion calculations at a *Point of Impingement* in accordance to Regulation 346, from the operation of the Thermal Oxidizer System, indicating the maximum concentration of phosphorous pentoxide at the *Point of Impingement*.

(g) The *Director* may not accept the results of the *Source Testing* if:

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

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

(iii) the *Company* failed to provide a complete report on the *Source Testing*;

(h) If the *Director* does not accept the results of the *Source Testing*, the *Director* may require re-testing.

7. CONTINUOUS MONITORING

7.1 The *Company* shall install, conduct and maintain a program to continuously monitor:

(a) the temperature at the location in the combustion chamber of the thermal oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 871 degrees Celsius at 2 seconds is achieved.

The continuous monitoring and recording system shall be equipped with continuous recording devices, and shall comply with the requirements outlined in the attached Schedule "B".

8. REPORTING REQUIREMENTS

8.1 The *Company* shall provide the *District Manager* and the *Director* no later than June 1 of each year, a *Written Summary* of activities undertaken in the previous calendar year that shall include the following:

(a) a signed statement that the *Facility* was in compliance with the *Performance Limits*;

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

(c) a list of each *Compound of Concern* submitted to the *Air Standards Manager* for review in the previous calendar year;

(d) a review of any changes to a *Ministry Point of Impingement Limit* undertaken in the previous calendar year that affect a *Compound of Concern* emitted from the *Facility*;

(e) a tabulated summary of the changes in the emission rate of any *Compound of Concern* and the resultant increase or decrease in the *Point of Impingement* concentration reported in the *ESDM Report* over the previous calendar year; and

(f) the *Emission Summary Table* for the *Facility* as of December 31 from the previous calendar year.

9. OPERATION AND MAINTENANCE

9.1 The *Company* shall prepare and implement, not later than three (3) months from the date of this *Certificate,* operating procedures and maintenance programs for all *Processes with Significant Environmental Aspects.* The *Company* shall ensure that all *Processes with Significant Environmental Aspects* are operated and maintained at all times in accordance with this *Certificate,* the operating procedures and maintenance programs. The operating procedures and maintenance programs shall specify as a minimum:

(a) frequency of inspections and scheduled preventative maintenance;

(b) procedures to prevent upset conditions;

(c) the routine and emergency operating and maintenance procedures recommended by the Thermal Oxidizer System, the continuous monitoring and recording system and the emergency flare suppliers;

(d) the calibration procedures of the continuous monitoring and recording system;

(e) the operator training which is to be provided by an individual experienced with the Thermal Oxidizer System and the

emergency flare;

(f) procedures for optimizing the operation of the Thermal Oxidizer System and the emergency flare to minimize the emissions from the Thermal Oxidizer System and the emergency flare;

(g) the periodic inspection of the Thermal Oxidizer System and the emergency flare which is to be conducted by individuals experienced with the Thermal Oxidizer System and the emergency flare;

(h) procedures for recording and responding to complaints regarding the operation of the Thermal Oxidizer System and the emergency flare;

(i) procedures to record the usage rate of chemicals in fumehoods;

(j) procedures to minimize all fugitive emissions;

(k) no substances containing chlorinated and/or fluorinated compounds, including polyvinyl chloride and Teflon are combusted into the thermal oxidizer;

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

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

9.2 The Company shall ensure that the combustion chamber of the thermal oxidizer is not loaded unless the continuous temperature monitoring system is fully operational.

10. COMPLAINTS RECORDING PROCEDURE

10.1 If at any time, the *Company* receives any environmental complaints from the public regarding the operation of the *Equipment* approved by this *Certificate*, the *Company* shall respond to these complaints according to the following procedure:

(a) the *Company* shall record and number each complaint, either electronically or in a log book, and 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 the address of the complainant, if known;

(b) the *Company*, upon notification of a complaint, shall initiate appropriate steps to determine all possible causes of the complaint, and shall take any action necessary to deal with the cause of the subject matter of the complaint; and

(c) the *Company* shall complete and retain on-site a report written within one (1) week of the complaint date, listing the actions taken to appropriately deal with the cause of the subject matter of the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents**.**

11. RECORD KEEPING REQUIREMENTS

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

11.2 The *Company* shall retain, for a minimum of seven (7) years from the date of their creation, except as noted below, all reports, records and information described in this *Certificate* which shall include but not be limited to:

(a) the *ESDM Report*;

(b) supporting information used in the emission rate calculations performed in the *ESDM Report* to document compliance with the *Performance Limits* (superseded information must be retained for a minimum period of three (3) years after *Modification*);

(c) the *Log* that describes each *Modification* to the *Facility*;

(d) the *Written Summaries* provided to the *Ministry*;

(e) the operating procedures and maintenance programs, including records on the maintenance, repair and inspection of the *Equipment* related to all *Processes with Significant Environmental Aspects*;

(f) the complaints recording procedure, including records related to all environmental complaints made by the public as required by the section titled Complaints Recording Procedure of this *Certificate.*

(h) all records on maintenance, repair and inspection of the continuous monitoring and recording system, and original date that work was recommended;

(i) all records produced by the continuous monitoring and recording system;

(j) all records on operator training;

(k) all records of the usage rate of chemicals in fumehoods; and

(l) description of all upset conditions associated with the operation of the Thermal Oxidizer System and the emergency flare and remedial action taken.

12. REVOCATION OF PREVIOUS CERTIFICATES OF APPROVAL(Air & Noise)

12.1 This *Certificate* replaces and revokes all Section 9 Certificates of Approval issued to the *Facility* and dated prior to the date of this *Certificate*.

SCHEDULE "A"

Application, dated September 24, 2004 and submitted by the Company, for Certificate of Approval (Air);

Emission Summary and Dispersion Modelling Report, dated September 9, 2004;

Other supporting documentation and correspondence, including:

(a) a memorandum from Scott Shayko of RWDI Inc. to Asad Khaja of the Ontario Ministry of the Environment dated November 23, 2004 including the supporting documentation;

(b) correspondence from Ken Milo of Cytec Canada Inc.to Asad Khaja of the Ontario Ministry of the Environment dated December 10, 2004, January 19, 2005 and January 24, 2005;

(c) correspondence from Scott Shayko of RWDI Inc. to Asad Khaja of the Ontario Ministry of the Environment dated January 4, 2005 including the supporting documentation.

(d) correspondence from Nicole Vadori of RWDI Inc. dated January 18, 2005 including thermal oxidizer calculations by John Zink Process Systems dated October 30, 1980; and heat and mass balance calculations of the thermal oxidizer by R. B. Pinder of Cyanamid Canada Inc. addressed to P. DeAngelis dated October 20, 1980.

(e) correspondence from Dave Cunningham of Cytec Canada Inc. including heat and mass balance calculations of the thermal oxidizer addressed to carried out by Asad Khaja of the Ontario Ministry of the Environment dated February 8, 2005.

SCHEDULE "B"

PARAMETER: TEMPERATURE

LOCATION:

The sample point for the continuous temperature monitor shall be located in the combustion chamber of the thermal oxidizer where the minimum retention time of the combustion gases at a minimum temperature of 871degrees Celsius at about 2.0 seconds is achieved.

PERFORMANCE:

The continuous temperature monitor shall meet the following minimum performance specifications for the following parameters.

	PARAMETERS	SPECIFICATION
1.	Type:	shielded "K" type thermocouple, or equivalent
2.	Accuracy:	± 1.5 percent of the minimum gas temperature

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor without a significant loss of accuracy and with a time resolution of 1 minute or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

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

1. GENERAL

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

2. OPERATIONAL FLEXIBILITY AND PERFORMANCE LIMITS

Condition Nos. 2 and 3 are included to limit *Modifications* and define the operating envelope permitted by this *Certificate.* The holder of the *Certificate* 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 *Certificate* places performance based limits that can not be exceeded under the terms of this *Certificate. Certificat*e 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*.

3. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

Condition No. 4 is included to outline the specific operational limits considered necessary to prevent an adverse effect resulting from the operation of the Thermal Oxidizer System. This condition is also included to emphasize that the Thermal Oxidizer System must be operated according to a procedure that will result in compliance with the Act, the regulations and this Certificate.

4. DOCUMENTATION REQUIREMENTS

Condition No. 5 is included to require the *Company* to maintain ongoing documentation that demonstrates compliance with the *Performance Limits* of this *Certificate* and allows the *Ministry* to monitor on-going compliance with the *Performance Limits*. The *Company* is required to have an up to date *ESDM Report* that describes the *Facility* at all times and make the *Emission Summary Table* from this report available to the public on an ongoing basis in order to maintain public

communication with regard to the emissions from the *Facility.*

5. MONITORING

Condition No. 6 is included to require the Company to gather accurate information so that the environmental impact and subsequent compliance with the Act, the regulations and this Certificate can be verified.

6. CONTINUOUS MONITORING

Condition No. 7 is included to require the Company to gather accurate information on a continuous basis so that compliance with the Act, the regulations and this Certificate can be verified.

7. REPORTING REQUIREMENTS

Condition No. 8 is included to require the *Company* to provide a yearly *Written Summary* to the *Ministry*.

8. OPERATION AND MAINTENANCE

Condition No. 9 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.

9. COMPLAINTS RECORDING PROCEDURE

Condition No. 10 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.

10. RECORD KEEPING REQUIREMENTS

Condition No. 11 is included to require the *Company* to retain all documentation related to this *Certificate* and provide access to *Ministry* staff, upon request, so that the *Ministry* can determine if a more detailed review of compliance with the *Performance Limits* is necessary.

11. REVOCATION OF PREVIOUS CERTIFICATES OF APPROVAL (Air & Noise)

Condition No. 12 is included to confirm that this *Certificate* replaces all Section 9 Certificate(s) of Approval that have been previously issued for this *Facility*.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No.
8-2120-80-006, issued on October 28, 1980,
8-2080-92-938, issued on May 27, 1993,
8-2125-85-006, issued on October 29, 1985,
8-2051-95-006, issued on May 18, 1985,
8-2110-86-006, issued on June 26, 1986,
8-2023-92-006, issued on March 16, 1982,
8-2207-92-006, issued on December 8, 1982,
8-2249-92-936, issued on February 17, 1993,
8-2284-97-986, issued on February 23, 1998,
8-2099-92-006, issued on May 29, 1992,
8-2095-97-006, issued on June 12, 1997,
8-2032-89-006, issued on July 28, 1989,
8-2132-85-877, issued on October 7, 1987,
8-2213-96-006, issued on November 12, 1996,

8-2169-92-006, issued on August 27, 1992,
8-2045-95-967, issued on April 10, 1996,
8-2149-98-006, issued on December 14, 1998,
8-2279-96-976, issued on February 3, 1997,
8318-4ZUKLX, issued on August 23, 2001,
3555-54PLW6, issued on November 22, 2001,
5134-5YNRMU, issued on June 22, 2004,
8-2132-85-977, issued February 20, 1997,
8-2207-98-006, issued on November 26, 1998, and
8-2047-82-877 issued on July 13, 1987.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, S.O. 1993, Chapter 28, 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 approval or each term or condition in the 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.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

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

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Environmental Commissioner
1075 Bay Street, 6th Floor
Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of Environment and Energy
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 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.ene.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 18th day of March, 2005

Neil Parrish, P.Eng.
Director
Section 9, *Environmental Protection Act*

AK/
c: District Manager, MOE Niagara

Scott Shayko, Rowan Williams Davies & Irwin Inc.

Ontario

Ministry of the Environment **Ministère de l'Environnement**

CERTIFICATE OF APPROVAL
AIR
NUMBER 5134-5YNRMU

Cytec Canada Inc.
9061 Garner Road, P.O. Box 240
Niagara Falls, Ontario
L2E 6T4

Site Location: 9061 Garner Road
Niagara Falls, Ontario

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

- one (1) storage tank, used to store phosphoric acid 50 % concentration, having a volumetric capacity of 49.5 cubic metres, exhausting into the atmosphere through a vent having an exit diameter of 0.08 metres, extending 6.4 metres above grade; and

- one (1) standby emergency diesel generator set, having a rating of 175 kilowatts, to provide power during emergency situations, exhausting to the atmosphere at a maximum volumetric flow rate of 0.72 actual cubic metres per second at an approximate temperature of 610 degrees Celsius, through a side vent having an exit diameter of 0.15 metre, extending 2.72 metres above grade;

all in accordance with the Application for a Certificate of Approval (Air) dated November 3, 2003 and signed by B.D. Jones, P.Eng., and all supporting information associated with the application.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the 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.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

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

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of Environment and Energy
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 22nd day of June, 2004

Neil Parrish, P.Eng.
Director
Section 9, *Environmental Protection Act*

JS/
c: District Manager, MOE Niagara District Office
Scott Shayko, Rowan Williams Davies & Irwin Inc.

Ontario

Ministry of the Environment | **Ministère de l'Environnement**

CERTIFICATE OF APPROVAL
AIR
NUMBER 3555-54PLW6

Cytec Canada Inc.
9061 Garner Road, P.O. Box 240
Niagara Falls, Ontario
L2E 6T4

Site Location: 9061 Garner Road
Niagara Falls, Ontario

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

- one (1) exhaust fan serving the drumming station, discharging into the atmosphere at a volumetric flow rate of 0.71 cubic metre per second through a wall opening at an elevation of 10.0 metres above grade;

- one (1) vacuum pump for the discharge of sulphur to a new glass lined reactor, equipped with two 1-micron filters and a liquid ring, discharging into the atmosphere at a volumetric flow rate of 0.14 cubic metre per second through a wall opening at an elevation of 10.0 metres above grade;

- two (2) exhaust fans serving the building, exhausting into the atmosphere at volumetric flow rates of 1.13 cubic metres per second and 2.83 cubic metres per second respectively through independent stacks, each having an exit diameter of 0.38 metre, extending 2.0 metres above the roof and 20.0 metres above grade;

all in accordance with the application for Approval (Air) and the supporting documentation submitted by Cytec Canada Inc., signed by Kenneth M. Milo, dated June 18, 2001 and the additional information provided by Cytec Canada Inc.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

(1) "Act" means the Environmental Protection Act;

(2) "Certificate" means this Certificate of Approval issued in accordance with Section 9 of the Act;

(3) "Company" means Cytec Canada Inc.;

(4) "Equipment" means the filters and the liquid ring described in the Company's application, this Certificate and in the supporting documentation referred to herein, to the extent approved by this Certificate;

(5) "Manual" means a document or a set of documents that provides written instructions;

(6) "Ministry" means Ontario Ministry of the Environment.

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

TERMS AND CONDITIONS

1. The Company shall ensure that the Equipment is properly operated and maintained at all times. The Company shall:

(1) prepare, not later than three months prior to the commencement of operation of the Equipment and update, as necessary, a Manual outlining the operating procedures and a maintenance program for the Equipment, including the routine operating and maintenance procedures in accordance with good engineering practices and the emergency procedures as recommended by the equipment suppliers and the procedures for recording of and responding to environmental complaints;

(2) implement the recommendations of the Manual.

2. The Company shall retain, for a minimum of two years from the date of their creation, all records and information related to or resulting from the operation and the maintenance required by this Certificate. These records shall be made available to staff of the Ministry upon request. The Company shall retain:

(1) all records on the maintenance, repair and inspection of the Equipment;

(2) all records on the environmental complaints; including:

(a) a description, time and date of the incident;

(b) wind direction at the time of the incident;

(c) a description of the measures taken to address the cause of the incident and to prevent a similar occurrence in the future.

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

1. Condition 1 is included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the Act, the regulations and this Certificate.

2. Condition 2 is included to require the Company to keep records for and provide information to the Ministry to ensure that the Equipment is being operated and maintained as required by the Act, the regulations and this Certificate.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, S.O. 1993, Chapter 28, 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 approval or each term or condition in the 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.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

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

This Notice must be served upon:

The Secretary* Environmental Review Tribunal 2300 Yonge St., 12th Floor P.O. Box 2382 Toronto, Ontario M4P 1E4	AND	The Environmental Commissioner 1075 Bay Street, 6th Floor Suite 605 Toronto, Ontario M5S 2B1	AND	The Director Section 9, *Environmental Protection Act* Ministry of the Environment 2 St. Clair Avenue West, Floor 12A Toronto, Ontario M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 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.ene.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 22nd day of November, 2001

Neil Parrish, P.Eng.
Director
Section 9, *Environmental Protection Act*

KW/
c: District Manager, MOE Niagara

Ontario

Ministry of the Environment | **Ministère de l'Environnement**

CERTIFICATE OF APPROVAL
AIR
NUMBER 8318-4ZUKLX

Cytec Canada Inc.
9061 Garner Road, P.O. Box 240
Niagara Falls, Ontario
L2E 6T4

Site Location: 9061 Garner Road
Niagara Falls City, Regional Municipality Of Niagara

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

- one (1) exhaust system, serving the warehouse area equipped with phosphine detectors set to alarm at 0.3 parts per million, discharging into the atmosphere at a volumetric flow rate of 2.6 cubic metres per second containing trace amount of phosphine, through a stack, having an exit diameter of 0.61 metre, extending 3.05 metres above grade;

all in accordance with the Application for Certificate of Approval along with supporting information and documentation submitted by Cytec Canada Inc.signed by Ken Milo dated March 26, 2001and the letter from Ken Milo to A. Khaja of Ontario Ministry of the Environment dated August 2, 2001.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written Notice served upon me, the Environmental Appeal Board and in accordance with Section 47 of the Environmental Bill of Rights, S.O. 1993, Chapter 28, the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Board. 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 approval or each term or condition in the 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.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

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

This Notice must be served upon:

The Secretary*
Environmental Appeal Board
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Environmental Commissioner
1075 Bay Street, 6th Floor
Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Appeal Board's requirements for an appeal can be obtained directly from the Board at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 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.ene.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 23rd day of August, 2001

Zarko Tesic, P.Eng.
Director
Section 9, *Environmental Protection Act*

AK/
c: District Manager, MOE Niagara
Ken Milo, Cytec Canada Inc.

Appendix E MECP FOI and Complaints Information

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

UPPER CANADA CONSULTANTS
ENGINEERS / PLANNERS

Upper Canada Planning & Engineering Ltd.
3-30 Hannover Drive
St. Catharines, ON
L2W 1A3
Phone 905-688-9400
Fax 905-688-5274

March 21, 2023
UCC File: **2054**

MEMO

Re: Freedom of Information Request Processing Inadequacies
Ministry of the Environment, Conservation and Parks
FOI #2022-05334 – Cytec Canada Inc.

This letter is in regards to the Freedom of Information request submitted to the Ministry of the Environment, Conservation and Parks (MECP) on July 7, 2022 (FOI Request Number #2022-05334) for documentation as part of the MECP's Environmental Compliance Approval (#9547-C5ULRS, approved February 3, 2022) for Cytec Canada Inc. The request involves the petition to obtain the "Emission Summary and Dispersion Modelling Report, prepared by RWDI Air Inc., dated September 30, 2020 as part of MECP Amended ECA #9547-C5ULRS issued February 3, 2022".

On March 16, 2023 a response was received from the analyst in charge of our request stating that a third party had submitted an appeal to releasing the requested documents, citing Section 28 of the Freedom of Information and Protection of Privacy Act regarding 'notice to affected persons'. Further conversations with the Ministry have revealed that this is not a standard appeal as they have cited legislature not commonly utilized to appeal these requests and their legal team will have to be included in further discussions to ensure this request is handled properly. Unfortunately, at the time of conversation with the analyst, both legal representatives employed by the Ministry to handle these matters were off due to contracting Covid. These reasons will continue to delay the release of the requested documents at this time.

Yours very truly,

Kurt Tiessen, E.I.T.
Junior Stormwater Management Engineer
Upper Canada Consultants

cc:

Submission summary

Thank you. Your application has been submitted.

Form name:	FIPPA – Access or Correction Request
Form number:	ON00089E
Card type:	VISA
Transaction type:	Purchase
Payment total:	$5.00 CAD
Payment status:	Successful
Payment confirmation:	23869990
Date/time:	July 7, 2022 3:49 PM
Submission confirmation number:	45625483
Submitted to:	The Ministry of Environment, Conservation and Parks

More information

Should you have any questions or comments regarding your application, please call or email the contact listed above.

Every effort is made to ensure that the online form is successfully delivered; however, making sure that the document was received remains the responsibility of the user.

Appendix F Niagara Falls Correspondence

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

---------- Forwarded message ---------
From: Julie Hannah <jhannah@niagarafalls.ca>
Date: Mon, Jul 17, 2023 at 9:18 AM
Subject: RE: [EXTERNAL]-9304 McLeod Road, Niagara Falls - Peer Review of Air Quality and Noise Study
To: Matt Kernahan <matt@gardencitydevelopment.ca>
Cc: Denise and Eric Henry <awelfa@gmail.com>, Kira Dolch <kdolch@niagarafalls.ca>, Gerald Spencer <gspencer@niagarafalls.ca>

Good morning Matt,

In regards to Comment 9, there are not any active industrial development applications and I am not aware of any pending in the area.

In regards to Comment 16, I am not aware of any dust or odour complaints from Cytec. I have cc'd Gerald, Manager of By-law Services, so he can confirm if he is aware of any.

Julie

Julie Hannah, MES, MA, MCIP, RPP | Senior Manager of Current Planning | Planning, Building, and Development | City of Niagara Falls

4310 Queen Street | Niagara Falls, ON L2E 6X5 | (905) 356-7521 ext 4107 | Fax 905-356-2354 | jhannah@niagarafalls.ca

Appendix G Region of Niagara Updated Official Plan Designations

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

Niagara Region

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Report date: n a t

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Correspondence Received

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A Place to Grow: Growth Plan for the Greater Golden Horseshoe (Growth Plan), 2020

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Appendix 1

Modifications to the City of Niagara Falls Official Plan Amendment No. 147

The following modifications are hereby made to the City of Niagara Falls Official Plan Amendment Number 147 adopted by the City of Niagara Falls on April 18, 2023. As thus modified, City of Niagara Falls Official Plan Amendment Number 147 is approved under subsection 17 (34) of the Planning Act, R.S.O. 1990, subject to the following modifications.

Part A: Text Modifications

1. Section 2 (TEXT CHANGES) e) ii) of the amendment is modified by:

i. Deleting POLICY 3.16.12 of PART 1, SECTION 3, INTENSIFICATION and its subsections entirely and renumbering subsequent policies accordingly.

2. The following policy is added after Policy 8.2 in Section 2 (TEXT CHANGES) j) of the amendment and subsequent policies are renumbered accordingly:

"The following are prohibited in all Employment Areas:

a. residential uses;
b. major retail / major commercial uses; and
c. major office uses, except major office uses permitted in Employment Areas within a strategic growth area."

3. Policy 8.3 of Section 2 (TEXT CHANGES) j) of the amendment is modified by:

i. In the first paragraph, replacing the word "reflect" with the word "**are**";
ii. In the fourth paragraph, replacing the words "meet the" with the words "**be planned to achieve the**"; and
iii. In the fourth paragraph replacing the words "of Part 2, Section 2" with the words "**to 2051 identified in Table 2 of Part 1, Section 2**".

4. Policy 8.30 of Section 2 (TEXT CHANGES) n) of the amendment is deleted entirely and subsequent policies are renumbered accordingly.

5. Policy 8.31 of Section 2 (TEXT CHANGES) n) of the amendment is modified by:

i. Adding the words "**,to the satisfaction of the City of Niagara Falls in consultation with Niagara Region**" after the words "where it has been demonstrated" and before the word "that";

ii. In subsection 8.31.4 replacing the words “and the Growth Plan” with the words “**Provincial Plans and policies, and the Niagara Official Plan**”;
iii. In subsection 8.31.5 removing the word “and” after the semicolon;
iv. Renumbering subsection “8.30.6” to “**8.31.6**”; and
v. Adding subsection 8.31.7 as follows:

“**8.31.7 conversion criteria and any related requirements set out by the Niagara Region at the time of a Regional Municipal Comprehensive Review are addressed.**”

6. Policy 8.32 of Section 2 (TEXT CHANGES) n) of the amendment is deleted in its entirety and subsequent policies are renumbered accordingly.

7. Policy 8.33 of Section 2 (TEXT CHANGES) n) of the amendment is modified by:

i. Adding the words “**outside of Employment Areas**” after the words “non-employment uses”; and
ii. Deleting the words “with an associated Regional Official Plan Amendment”.

8. Section 2 (TEXT CHANGES) o) ii) of the amendment is modified by:

i. Replacing the words “Employment Area” with the words “**Employment Lands**”.

9. Section 2 (TEXT CHANGES) o) ix) of the amendment is modified by:

i. Replacing the words “Employment Areas” with the words “**Employment Lands**”.

10. Section 2 (TEXT CHANGES) o) xviii) of the amendment is deleted in its entirety and replaced with the following:

xviii) by adding the following new policy:

Policy 13.87 SPECIAL POLICY AREA “87”.

Special Policy Area “87” applies to 18.5 hectares of land on the south side of McLeod Road, east of Beechwood Road, known municipally as 9304 McLeod Road. The Residential designation of the lands will come into effect when the following conditions are cleared by the City of Niagara Falls in consultation with Niagara Region:

a) That as part of any development application submission on the lands, the applicant shall undertake a Risk Assessment for review and approval to support a Residential designation on the lands.

i. **In advance of the Risk Assessment commencing, the applicant shall submit a Risk Assessment Terms of Reference to Niagara Region, in consultation with the City of Niagara Falls for review and approval.**

ii. **Niagara Region will undertake a peer review of the Risk Assessment to confirm that the methodology utilized is appropriate and to certify that the Risk Assessment complies with the approved Terms of Reference.**

iii. **If the Risk Assessment determines that Residential uses are not appropriate for the lands, due to there being an unacceptable risk to public health or safety or other factors, the Risk Assessment shall identify appropriate non-residential uses to be considered for the lands.**

b) **That as part of any development application submission on the lands, the applicant shall prepare a Land Use Compatibility Study in accordance with Provincial D-6 Guidelines, which shall be peer reviewed.**

c) **That as part of any development application submission on the lands, the applicant shall provide written acknowledgement demonstrating the gross floor area of non-residential space being retained for a similar number of jobs to remain accommodated on the site to support the conversion of the lands in accordance with Part 2, Policy 8.33 of this Plan.**

11. Section 2 (TEXT CHANGES) cc) iv) of the amendment is modified by:

i. Replacing the words “the policies and schedules of the Growth Plan for the Greater Golden Horseshoe” with the words “**Provincial policies and plans and the applicable policies of the Niagara Official Plan**”.

Part B: Mapping Modifications

Mapping modifications are identified through text to Official Plan Amendment No. 147 to the City of Niagara Falls Official Plan below, with corresponding numbers and illustrations of the modifications on the mapping for clarity.

12. "Map 1 to Amendment No. 147 to the Official Plan Schedule "A" – Future Land Use Plan" is modified so that lands municipally known as 9015 Stanley Avenue, in addition to lands located South of the Welland River and East of the Q.E.W. are identified as "Area affected by this amendment". Lands currently designated Resort Commercial within the "Area affected by this amendment" on Map 1 are re-designated to Employment, as depicted on Map 1 as modified below. The Legend is modified by replacing the word "ECA" with the word "**Employment**", and by adding text that identifies that the extent of the Environmental Conservation Area and Environmental Protection Area do not necessarily include the extent of the Region's Natural Environment System and that Regional mapping should be consulted.

13. The Legend to "Map 4 to Amendment No. 147 to the Official Plan Schedule "A" – Future Land Use Plan" is modified by adding the number "**87**" after the words "Special Policy Area" and by modifying the line color for the Special Policy Area from black to red.

14. Map 6 of the amendment entitled "SCHEDULE A-7 EMPLOYMENT LANDS" is modified so that the boundaries of the Employment Areas mapped reflect the addition or removal of the lands identified below:

a. Lands municipally known as 2125 Fruitbelt Parkway are added to Employment Area 1 and are designated Employment.

b. Lands bounded by Carroll Avenue to the West, Thorold Stone Road to the North, the Canadian National rail line to the East, and the southern limit of the lands municipally known as 4256 Carroll Avenue to the South, are added to Employment Area 2.

c. Lands that comprise the Hydro Canal are added to Employment Area 2.

d. Lands abutting the rail corridor, South of Whirlpool Road and Southwest of Niagara River Parkway are removed from Employment Area 2.

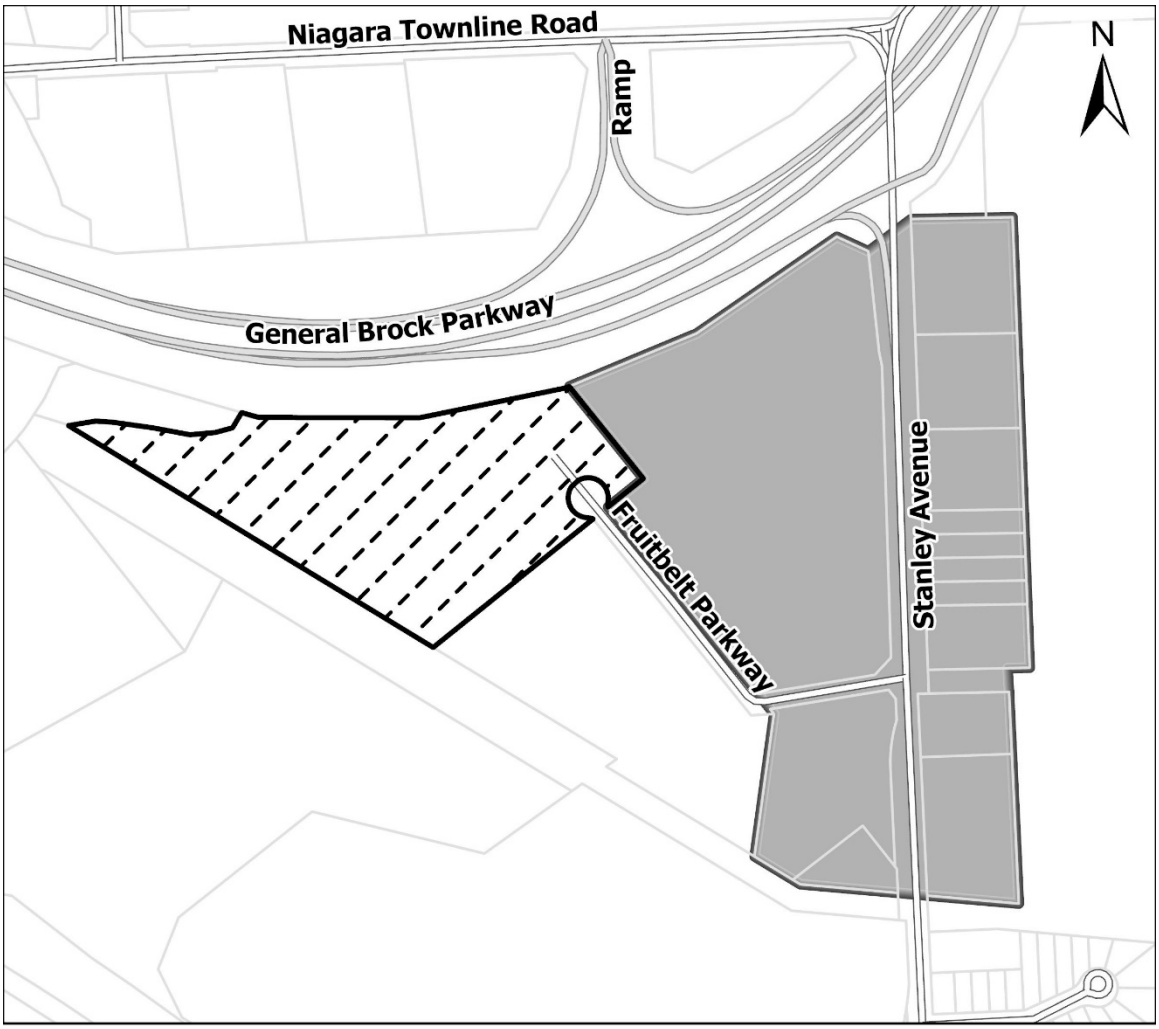
e. Lands municipally known as 7633, 7641, 7649, 7657, 7665, 7673, 7681, 7689, and 7697 Hackberry Trail, in addition to lands North of Brown Road are removed from Employment Area 5.

f. Lands located South of the Welland River and East of the Q.E.W. are added to Employment Area 5.

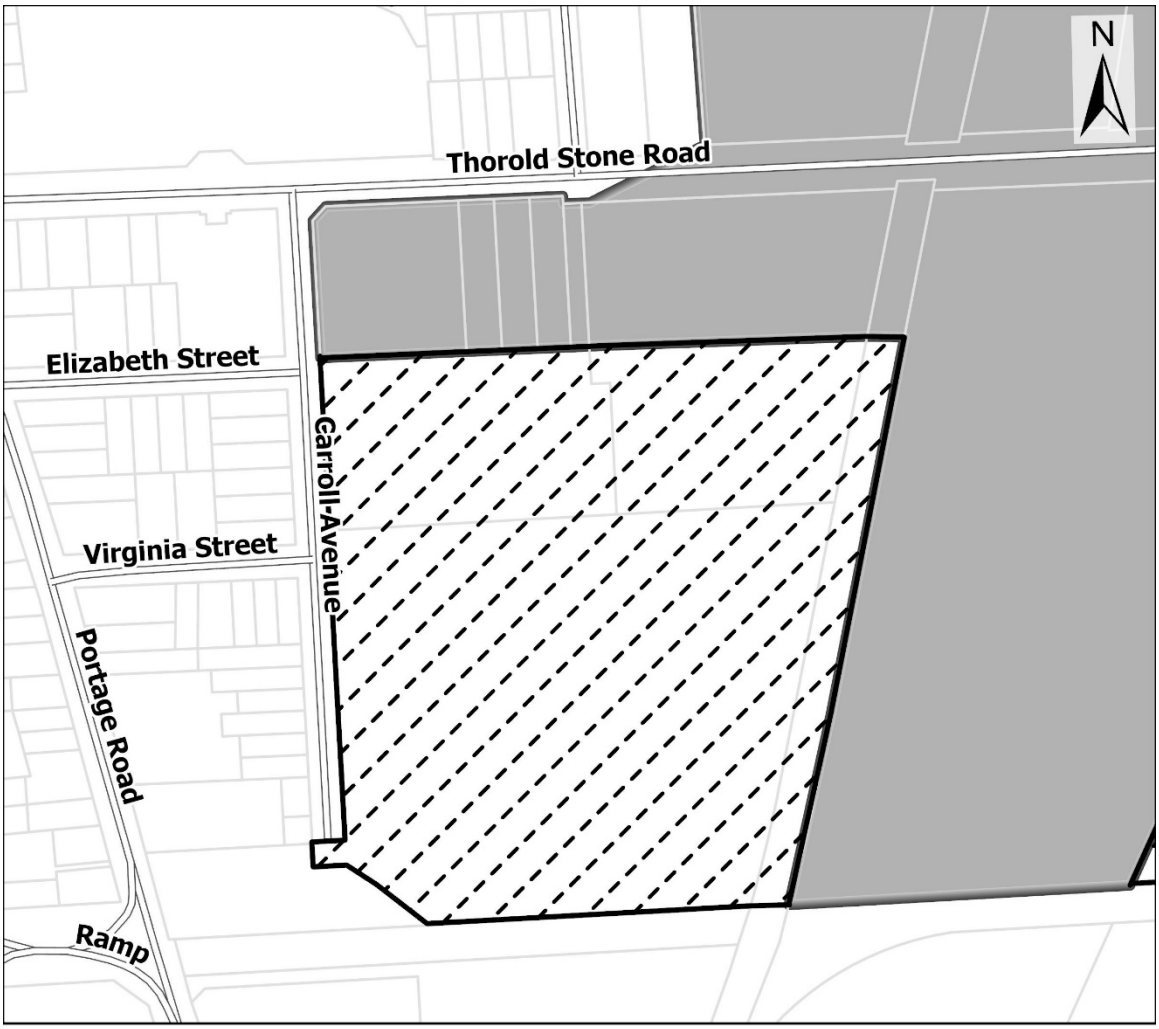
g. Lands municipally known as 9015 Stanley Avenue are added to Employment Area 5.

h. Lands bounded by Chippawa Parkway to the South, 6025 Chippawa Parkway to the West, Don Murie Street to the North, and Stanley Avenue to the East are added to Employment Area 7.

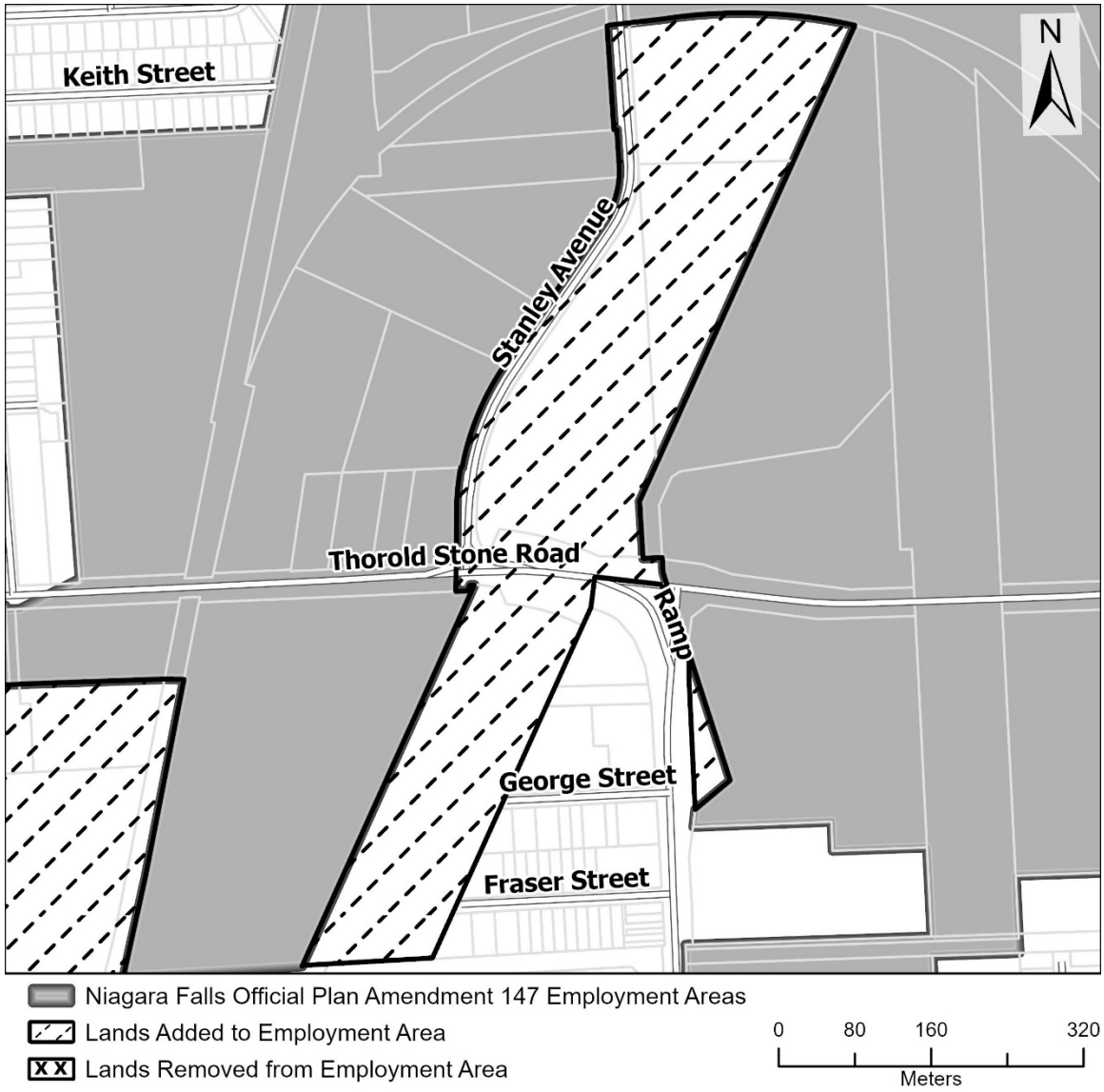
14.A. Lands municipally known as 2125 Fruitbelt Parkway are added to Employment Area 1 and are designated Employment as identified below:



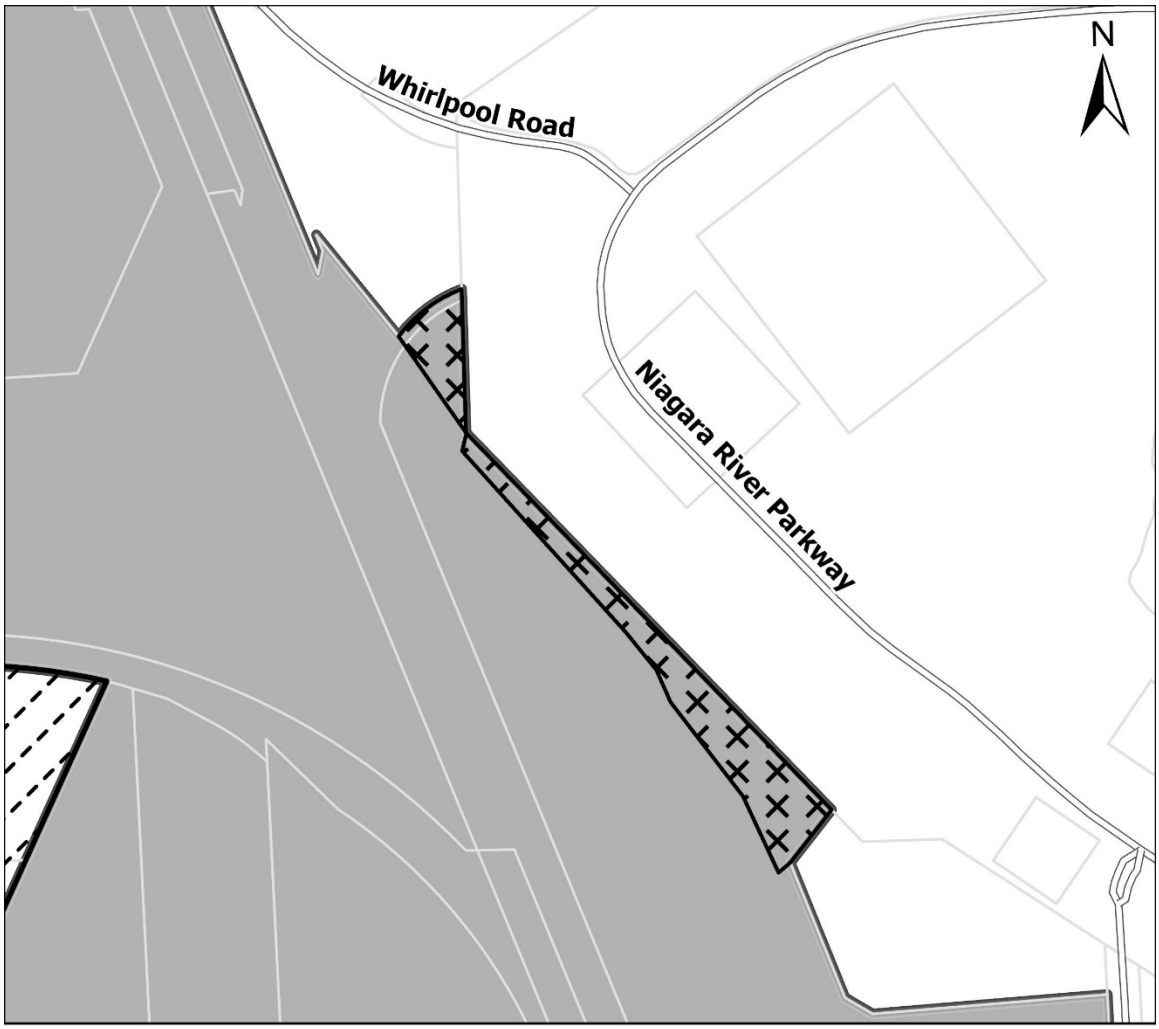
14.B. Lands bounded by Carroll Avenue to the West, Thorold Stone Road to the North, the Canadian National rail line to the East, and the southern limit of the property municipally known as 4256 Carroll Avenue to the south, are added to Employment Area 2 as identified below:



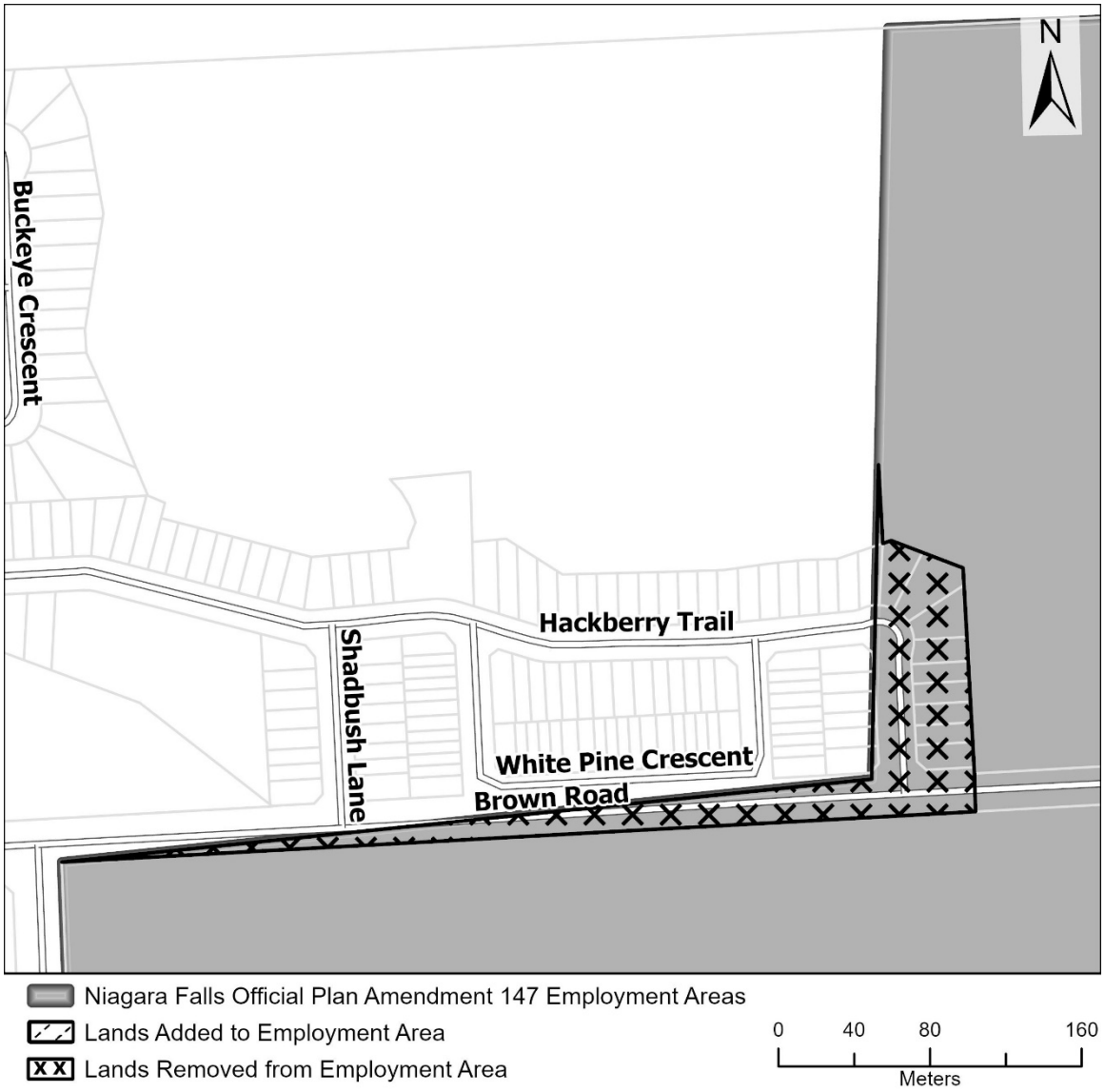
14.C. Lands that comprise the Hydro Canal are added to Employment Area 2, as identified below:



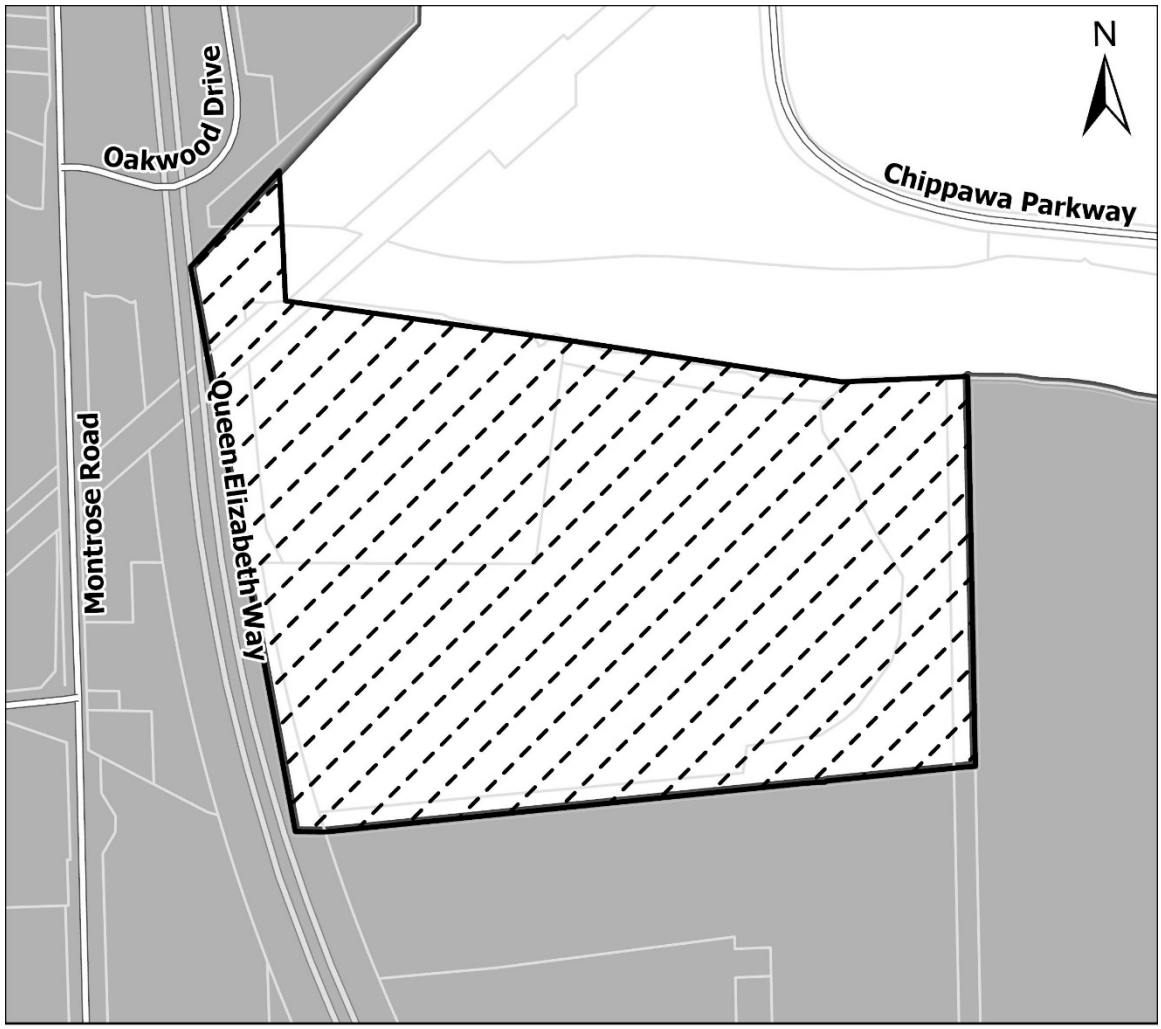
14.D. Lands abutting the rail corridor, South of Whirlpool Road and Southwest of Niagara River Parkway are removed from Employment Area 2 as identified below:



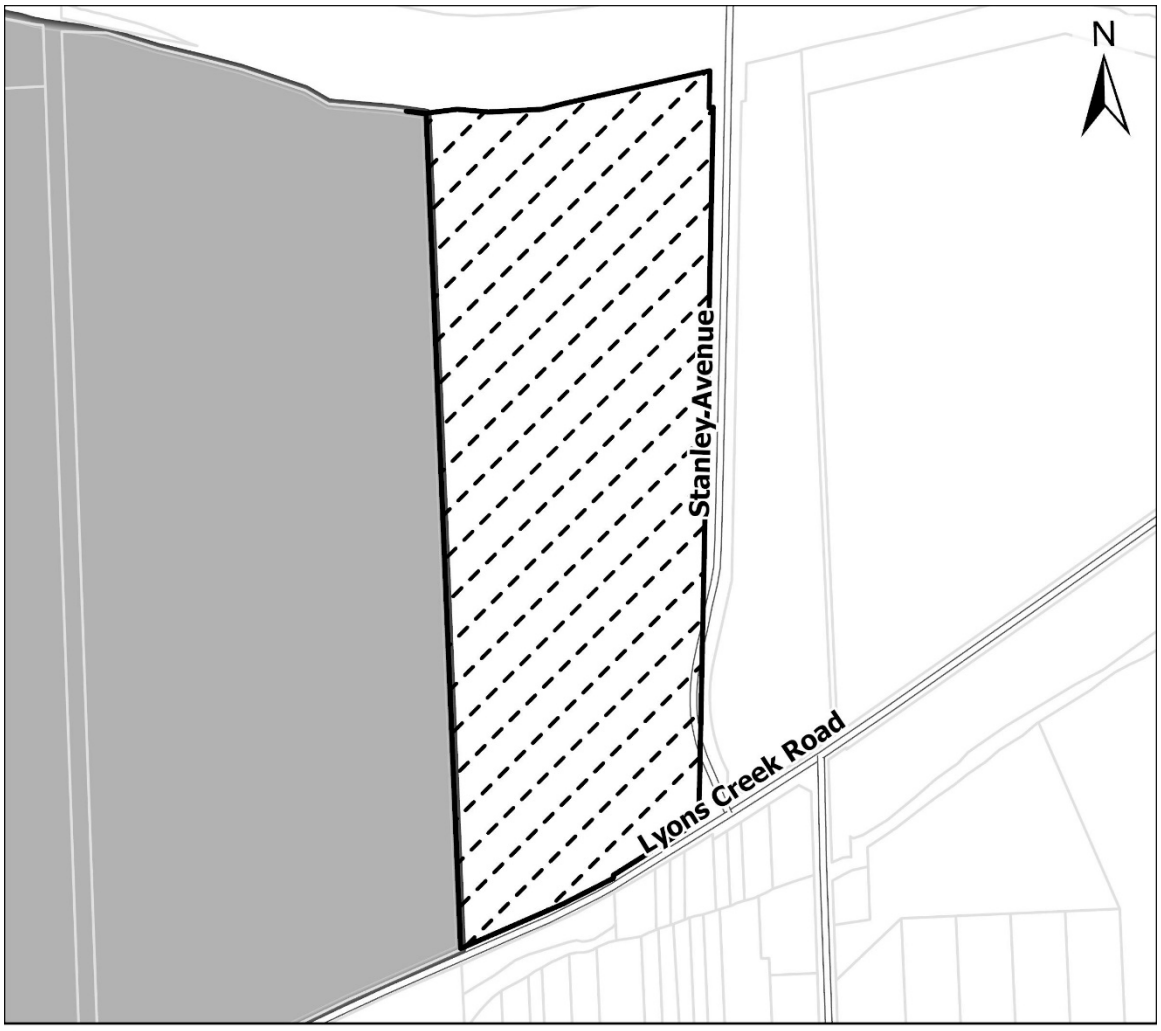
14.E. Lands municipally known as 7633, 7641, 7649, 7657, 7665, 7673, 7681, 7689, and 7697 Hackberry Trail, in addition to lands North of Brown Road are removed from Employment Area 5 as identified below:



14.F. Lands located South of the Welland River and East of the Q.E.W. are added to Employment Area 5 as identified below:



14.G. Lands municipally known as 9015 Stanley Avenue are added to Employment Area 5 as identified below.



14.H. Lands bounded by Chippawa Parkway to the South, lands municipally known as 6025 Chippawa Parkway to the West, Don Murie Street to the North, and Stanley Avenue to the East are added to Employment Area 7 as identified below:

Appendix H J.D. Barnes Existing Residential Uses

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

NOTE: THIS SKETCH IS NOT A LEGAL PLAN OF SURVEY

SKETCH TO ILLUSTRATE RESIDENCES WITHIN 2KM ARC OF SOLVAY PLANT. CITY OF NIAGARA FALLS

REGIONAL MUNICIPALITY OF NIAGARA

SCALE 1 : 7500

250 0 100 200 300 400 500 metres

J.D. BARNES LIMITED

METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTE: DISTANCES ARE THE CLOSEST DISTANCES BETWEEN PROPERTY LIMITS

STREET NAME	HOUSE NUMBER	DISTANCE FROM PROPERTY LINE
BEECHWOOD ROAD/MCLEOD ROAD	PROPOSED SUBDIVISION	±860M
GRASSY BROOK ROAD	#848	±380M
GRASSY BROOK ROAD	#872	±375M
GRASSY BROOK ROAD	#10043	±295M
GRASSY BROOK ROAD	#9963	±310M
GRASSY BROOK ROAD	#9931	±315M
GRASSY BROOK ROAD	#9887	±300M
GRASSY BROOK ROAD	#9865	±290M
GRASSY BROOK ROAD	#9849	±270M
GRASSY BROOK ROAD	#9827	±230M
GRASSY BROOK ROAD	#9695	±135M
GRASSY BROOK ROAD	#9673	±90M
GRASSY BROOK ROAD	#9497	±105M
GRASSY BROOK ROAD	#9482	±275M
GRASSY BROOK ROAD	#9395	±100M
GRASSY BROOK ROAD	#9285	±105M
GRASSY BROOK ROAD	#8986	±350M
GRASSY BROOK ROAD	#8961	±380M
GRASSY BROOK ROAD	#8899	±420M
GRASSY BROOK ROAD	#8879	±460M
BIGGAR ROAD	#9705	±1250M
BIGGAR ROAD	#9569	±370M
CHIPPAWA CREEK ROAD	#9130	±30M
CHIPPAWA CREEK ROAD	#9030	±175M
CHIPPAWA CREEK ROAD	#8923	±315M
CHIPPAWA CREEK ROAD	#8800	±315M
CHIPPAWA CREEK ROAD	#8770	±470M
BROWN ROAD	#8780	±355M
BROWN ROAD	#8950	±315M
BROWN ROAD	#9104	±20M
THOROLD TOWNLINE ROAD	#7972	±20M
THOROLD TOWNLINE ROAD	#1935	±210M
THOROLD TOWNLINE ROAD	#1849	±60M
THOROLD TOWNLINE ROAD	#1795	±25M
TURNER ROAD	#1050	±25M
HURRICANE ROAD	#1244	±715M
GARNER ROAD	#7793	±435M

CAUTION

(A) THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK.

(B) THIS SKETCH IS PROTECTED BY COPYRIGHT.

J.D.BARNES LIMITED SURVEYING MAPPING GIS
LAND INFORMATION SPECIALISTS
4318 PORTAGE ROAD - UNIT 2, NIAGARA FALLS, ON L2E 6A4
T: (905) 358-3693 F: (905) 358-6224 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
AT/SC	AH	20-16-176-00

FILE: G:\2020\20-16-176\00\Drawing\20-16-176-00 2km ARC.dgn

PLOTTED: 7/27/2023

Appendix I Stationary Noise Modelling Inputs

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

Table I.1: Summary of Noise Source Sound Power Levels

Source Description	ID	Maximum Sound Power Levels (1/1 Octave Band Levels)									Total PWL (dBA)	Notes
		32 (dB)	63 (dB)	125 (dB)	250 (dB)	500 (dB)	1000 (dB)	2000 (dB)	4000 (dB)	8000 (dB)		
Small Reefer Truck - front	reefer_sml	104	107	98	100	97	91	87	84	78	98	- Based on SLR historical data -Three Refrigeration trucks assumed to operate continuously during the daytime -Two reefer trucks assumed to operate at 6 am
Heavy Truck Passyby	Truck_Pass	67	70	70	65	65	64	60	53	47	100	- Based on SLR historical data - One Truck per hour during all times of day assumed

Appendix J Traffic Data and Calculations

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

Dylan Diebolt

From: Rebecca Conrod <RConrod@rvanderson.com>
Sent: November 22, 2022 10:01 AM
To: Dylan Diebolt
Cc: Eric Henry; Diane Freeman; Matt Kernahan
Subject: RE: 9304 McLeod Road, Niagara Falls Compatibility Study Update

Hi Dylan,

Here is the information you requested:

- Existing ADTs (Assumed based on 10x the critical (PM) two-way traffic from intersection counts)
  - McLeod Road (East of Beechwood): 5750
  - McLeod Road (West of Beechwood): 5550
  - Beechwood Road (North of McLeod): 570
  - Beechwood Road (South of McLeod): 370
- We used a 1% annual growth rate. Do you also need any volumes from future planned developments?
- We do not have day/night splits for this data
- Truck Percentages at the intersection of Beechwood Road and McLeod Road (Based on intersection counts)
  - Eastbound (McLeod)
    - AM: 7% heavy, 4% Medium
    - PM: 2% heavy, 2% Medium
  - WB (McLeod):
    - AM: 4% heavy, 4% Medium
    - PM: 1% heavy, 1% Medium
  - NB (Beechwood):
    - AM: 8% heavy, 0% Medium
    - PM: 6% heavy, 0% Medium
  - SB (Beechwood):
    - AM: 9% heavy, 0% Medium
    - PM: 3% heavy, 0% Medium

Thanks!

arva

Becca Conrod, EIT (She/Her)
TRANSPORTATION PLANNER

m 613 818 9941
a 1750 Courtwood Crescent, Suite 220 Ottawa, ON K2C 2B5

rvanderson.com

From: Dylan Diebolt <ddiebolt@slrconsulting.com>
Sent: November 21, 2022 10:52 AM
To: Rebecca Conrod <RConrod@rvanderson.com>
Cc: Eric Henry <awelfa@gmail.com>; Diane Freeman <dfreeman@slrconsulting.com>; Matt Kernahan <matt@ucc.com>
Subject: RE: 9304 McLeod Road, Niagara Falls Compatibility Study Update

O R N A M E N T - Sound Power Emissions & Source Heights

Ontario Road Noise Analysis Method for Environment and Transportation

Road Segment ID	Roadway Name	Link Description	Speed (kph)	Period (h)	Total Traffic Volumes	Auto %	Med %	Hvy %	Auto	Med	Heavy	PWL (dBA)	Source Height, s (m)
McLeod_avg	McLeod Road	Daytime Impacts	60	16	6441	89.0%	7.0%	4.0%	5733	451	258	81.2	1.4
		Nighttime Impacts	60	8	716	89.0%	7.0%	4.0%	637	50	29	74.7	1.4
McLeod_min	McLeod Road - Ambient	Daytime Impacts	60	1	248	89.0%	7.0%	4.0%	220	17	10	79.1	1.4
		Evening Impacts	60	1	177	89.0%	7.0%	4.0%	157	12	7	77.7	1.4
		Nighttime Impacts	60	1	112	89.0%	7.0%	4.0%	100	8	4	75.7	1.4

STAMSON 5.0 NORMAL REPORT Date: 25-10-2024 13:23:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: mcloed2.te Time Period: 16 hours
Description:

Road data, segment # 1: McLoed Road

Car traffic volume : 5733 veh/TimePeriod
Medium truck volume : 451 veh/TimePeriod
Heavy truck volume : 258 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: McLoed Road

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 18.30 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: McLoed Road

Source height = 1.41 m

ROAD (0.00 + 65.31 + 0.00) = 65.31 dBA

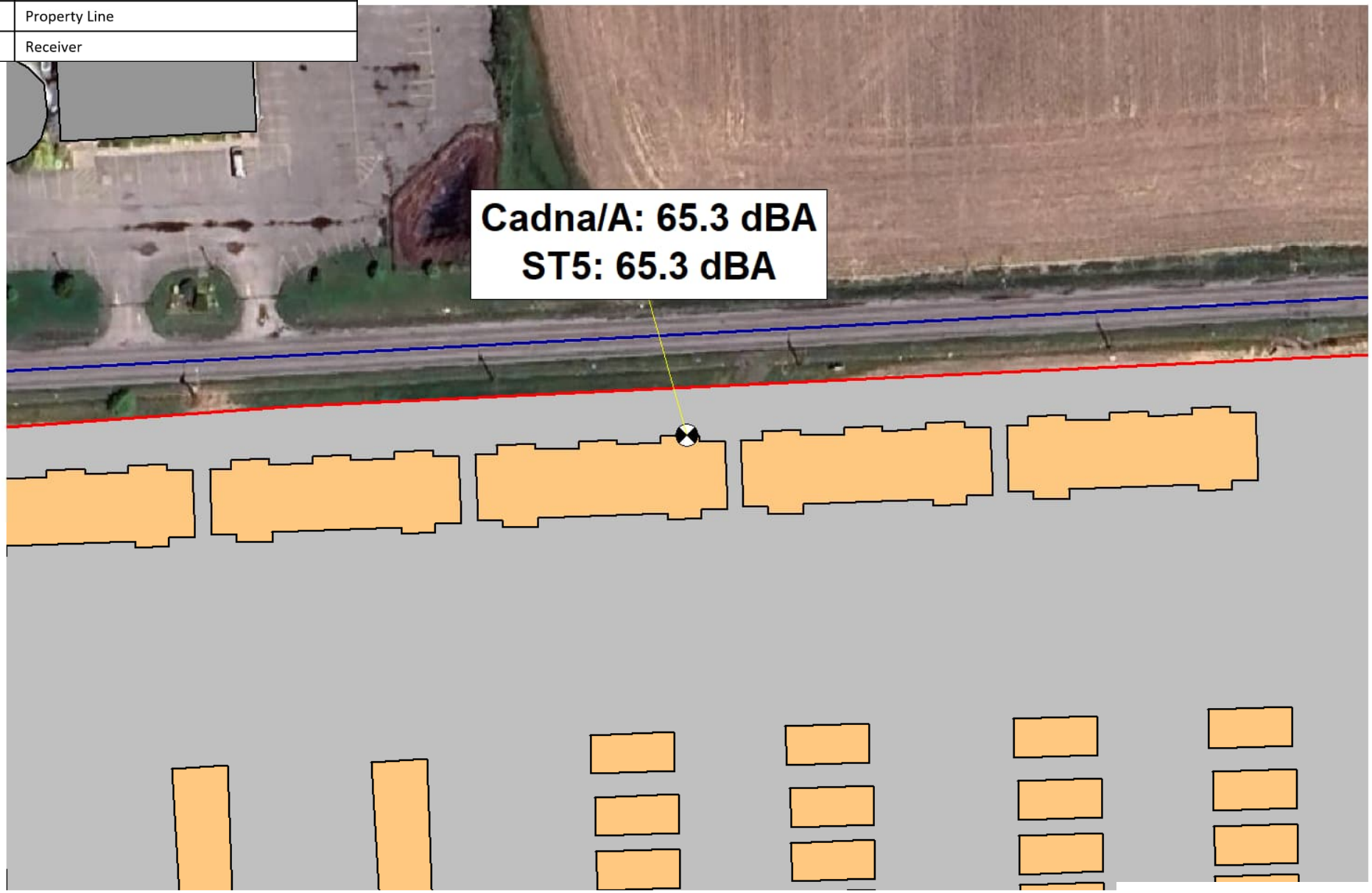
Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	66.17	0.00	-0.86	0.00	0.00	0.00	0.00	65.31

Segment Leq : 65.31 dBA

Total Leq All Segments: 65.31 dBA

TOTAL Leq FROM ALL SOURCES: 65.31

Legend	
	Proposed Development
	Property Line
	Receiver



Aerial Photography from Google Earth

800460 ONTARIO LTD.	True North	Scale: 1:1,000	METRES	SLR
9304 MCLEOD ROAD – NIAGARA FALLS, ONTARIO		Date: Oct. 2024 Rev 0.0	Figure No. **J.1**	
STAMSON VS. CADNAA VALIDATION		Project No. 241.30612.00000		

Appendix K Mitigation and Warning Clauses

Compatibility/Mitigation Study – Air Quality, Noise and Vibration

9304 McLeod Road, Niagara Falls, ON

800460 Ontario Ltd.

SLR Project No.: 241.03612.00000

November 12, 2024

Ventilation, Warning Clause and Barrier Summary

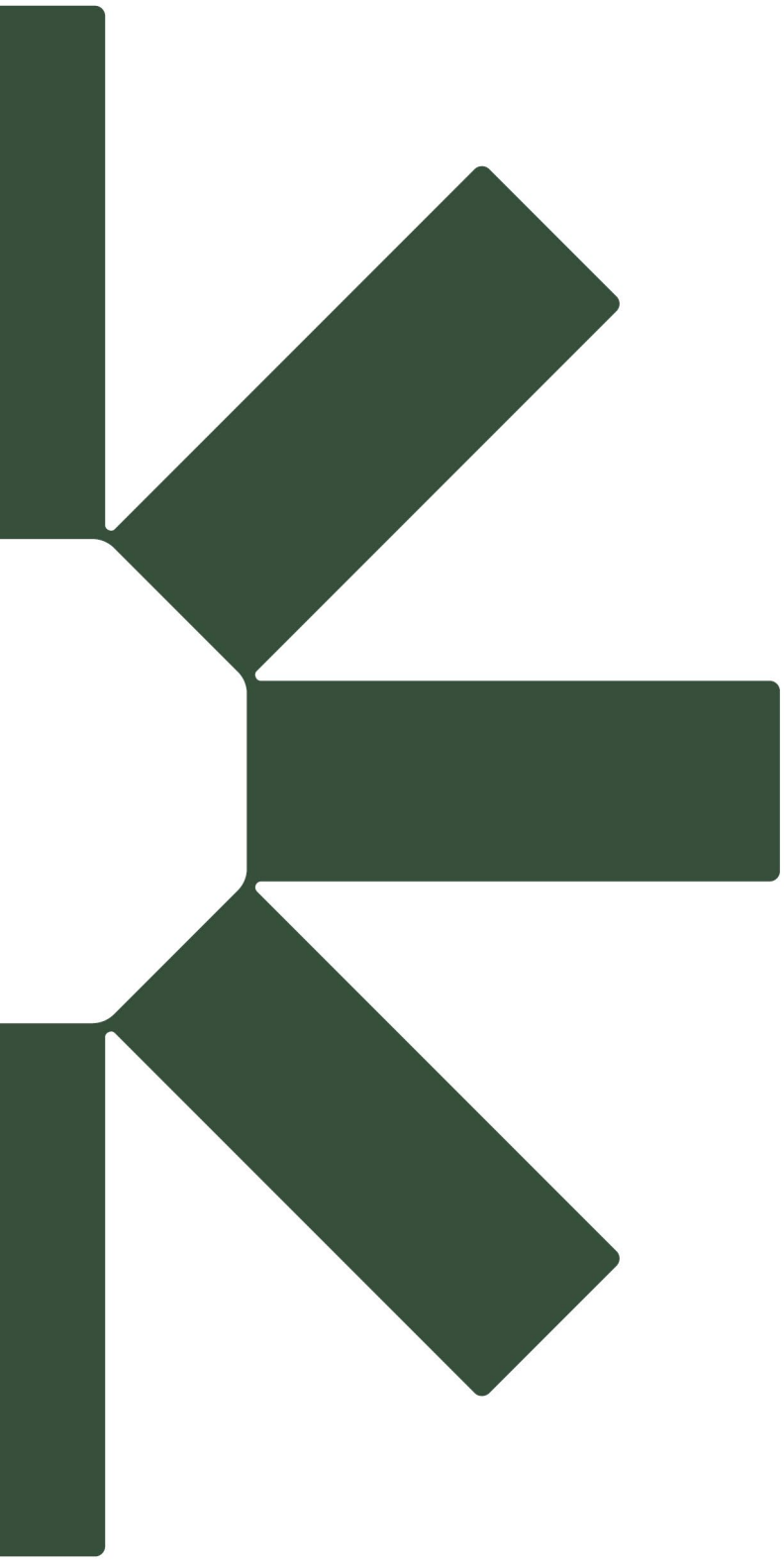
The following Warning Clauses are recommended for inclusion in agreements registered on Title for the residential units, and included in all agreements of purchase and sale or lease, and all rental agreements.

MECP Type A Warning Clause - Lot 85, Blocks 188 to 189, and Block 198.

"Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

MECP Type C Warning Clause - Lots 85 to 86, and Blocks 188 to 198.

"This unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment."



Making Sustainability Happen