AERMOD Air Dispersion Modeling Protocol & Part 212 Analysis

Air State Facility (ASF) Permit Modification and Renewal Application; DEC ID No. 9-2911-00036/00151

PREPARED FOR

The Goodyear Tire & Rubber Company

DATE
11 June 2026

REFERENCE
0771139

DOCUMENT DETAILS

The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.	
DOCUMENT TITLE	AERMOD Air Dispersion Modeling Protocol & Part 212 Analysis
DOCUMENT SUBTITLE	Air State Facility (ASF) Permit Modification and Renewal Application; DEC ID No. 9-2911-00036/00151
PROJECT NUMBER	0771139
DATE	11 June 2026
VERSION (delete field if unneeded)	03
AUTHOR	David Murtha, QEP
CLIENT NAME	The Goodyear Tire & Rubber Company

DOCUMENT HISTORY

				ERM APPROVAL TO ISSUE		
VERSION	REVISION	AUTHOR	REVIEWED BY	NAME	DATE	COMMENTS
DRAFT	000	D. Murtha	G. Keating	G. Keating	06.11.2025	
FINAL	001	D. Murtha	G. Keating	G. Keating	07.17.2025	Revisions to correspond to NYSDEC Comments
Revised Final	002	A. Wilson N. Zhou	D. Murtha	G. Keating	03.27.2026	Revisions for DEC RFAI Comments February 2026
Revised FINAL	003	D. Murtha		D. Murtha	06.11.2026	Revised to incorporate NYSDEC Comments for Conditional Approval

SIGNATURE PAGE

AERMOD Air Dispersion Modeling Protocol & Part 212 Analysis

Air State Facility (ASF) Permit Modification and Renewal Application; DEC ID No. 9-2911-00036/00151

0771139

Robert Van Kleeck
Consultant

David T. Murtha, QEP, CVI. TWIC
Consulting Director

Gary M. Keating
Partner-in-Charge

ERM Consulting & Engineering, Inc.
345 Woodcliff Drive
2nd Floor
Fairport, New York 14450
T +1 585 387 0510

CONTENTS

APPENDIX C GOODYEAR RESPONSES TO DEC COMMENTS AUGUST 2025 RFAI ON THE AERMOD PROTOCOL AND PART 212 ANALYSIS – UPDATED, JUNE 11, 2026

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

Acronym	Description
AGC	Annual Guideline Concentrations
ASF	Air State Facility Permit
CFR	Code of Federal Regulations
CH_4	Methane
CLCPA	Climate Leadership and Community Protection Act
CO_2	Carbon Dioxide

Acronym	Description
CO_2e	Carbon Dioxide Equivalents
DAC	Disadvantaged Community
DAR-21	Division of Air Resources (21: NYSDEC Program Policy, “The Climate Leadership and Community Protection Act and Air Permit Applications”, dated December 14, 2022)
DEP 24-1	Division of Environmental Permits (24-1: NYSDEC Program Policy, “Permitting and Disadvantaged Communities,” dated May 8,2024)
eGRID	Emissions & Generation Resource Integrated Database
ERM	ERM Consulting & Engineering, Inc.
GHG	Greenhouse Gas
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant
HTAC	High Toxicity Air Contaminant
kWh	Kilowatt-hours
lb/yr	Pounds per year
LED	Light-emitting diode
MACT	Maximum Achievable Control Technology
MT	Metric tonnes
N_2O	Nitrous Oxide
NYCRR	New York Code, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
O-T	ortho-Toluidine
PM	Particulate Matter
POTW	Publicly Owned Treatment Works
PTE	Potential-to-Emit
PVC	Polyvinyl Chloride
RTO	Regenerative Thermal Oxidizer
SGC	Short-term guideline concentration

Acronym	Description
tpy	Tons per year
USEPA	United States Environmental Protection Agency
VFD	Variable Frequency Drives
VOC	Volatile Organic Compounds

1. INTRODUCTION

On behalf of The Goodyear Tire and Rubber Company (Goodyear), ERM submits this Air Dispersion Modeling Protocol and 6 NYCRR Part 212 Applicability Assessment and Goodyear's manufacturing Facility located in the City of Niagara Falls, New York (Facility or Project henceforth) with DEC ID 9-2911-00036. This air dispersion modeling protocol is submitted as part of a permit application for renewal of and modification to the Facility's Air State Facility (ASF) permit.

The majority of the emission sources at the Facility qualify as "process emission sources" that are subject to the requirements of Title 6 of the New York Codes, Rules and Regulations, Part 212 (6 NYCRR Part 212). This regulation includes (but is not limited to) requirements for compound-specific air contaminants (commonly referred to as air toxics) from process emission sources that are subject to permitting. Per 6 NYCRR Part 212-1.1, a facility that has process emission sources must demonstrate compliance with the revised requirements of Part 212 upon issuance of a new or modified permit or registration, or upon issuance of a renewal for an existing air permit or registration.

This document evaluates the applicability of 6 NYCRR Part 212-2 to the facility's emission sources and processes and describes the air dispersion methodology that will be used to evaluate the potential short-term and annual ambient impacts of the emission sources that are subject to Part 212-2. This document has been prepared to fulfill the submission requirements for an air dispersion modelling protocol.

2. BACKGROUND

On 14 June 2015, revisions to 6 NYCRR Part 212 (Part 212") became effective that included significant changes to the regulation of air toxics. Tables 3 & 4 of §212-2.3 indicate that air dispersion modeling must be performed to demonstrate that the maximum offsite air concentration is less than the applicable National Ambient Air Quality Standard (NAAQS) or Annual Guideline Concentration (AGC)/Short-term Guideline Concentration (SGC) values. The results of the air dispersion modeling are used to support the environmental rating for each air contaminant, as well as determine the degree of air cleaning required. A subsequent revision to Part 212 became effective on 25 February 2021.

On 10 August 2016, the New York State Department of Environmental Conservation (NYSDEC) also revised and issued NYSDEC Policy DAR-1 ("Guidelines for the Evaluation and Control of Ambient Air Contaminants Under 6 NYCRR Part 212") to provide additional guidance regarding Part 212 implementation and compliance. A subsequent revision to DAR-1 became effective on 12 February 2021.

Table 2 of §212-2.2 provides a list of 61 air contaminants that the NYSDEC has established as "High Toxicity Air Contaminants" (HTACs). For compounds that are regulated as HTACs, §212-2.1(a) states that the facility "shall either limit the actual annual emissions from all process operations at the facility so as to not exceed the mass emission limit listed for the individual HTAC; or demonstrate compliance with the air cleaning requirements for the HTAC as specified in <<Table 4 of §212-2.3(b)>> for the environmental rating assigned to the contaminant by the department.”. For compounds that do not qualify as an HTAC, §212-2.1(b) indicates that the facility “shall not allow emissions of <<the>> contaminant to violate the requirements specified in…Table 3 – Degree of Air Cleaning Required for Criteria Air Contaminant, or…Table 4 – Degree of Air Cleaning Required for Non-Criteria Air Contaminants…for the environmental rating assigned to the contaminant by the department.”

For process emission sources that are subject to a Federal New Source Performance Standard (NSPS), §212-1.5(e)(1) states that the Part 212 requirements for the air contaminants that are regulated by the standard are satisfied if the facility owner or operator can demonstrate that the facility is compliant with the NSPS. For process emission sources that are subject to a Federal National Emission Standard for Hazardous Air Pollutants (NESHAP), §212-1.5(e)(2) indicates that the Part 212 requirements for the air contaminants that are regulated by the standard are satisfied if the facility owner or operator can demonstrate that the process emission source is in compliance with the relevant Federal regulation. For those NESHAPs regulating HTACs, the facility owner or operator must provide a Toxic Impact Assessment (TIA) demonstrating that the maximum offsite ambient air concentration is less than the [respective] Annual Guideline Concentration/Short-term Guideline Concentration (AGCs/SGCs) and that emissions are less than the Persistent, Bioaccumulative (PB) trigger for the respective air contaminant.

Based upon an evaluation of the emissions from the Facility, an air dispersion modeling analysis is required for the Facility’s Part 212-regulated emissions. The resulting predicted ambient impacts from the modeling analysis will be compared against the respective AGCs/SGCs for each compound.

Section 4.0 of this document provides a detailed discussion regarding the process used to identify the emission sources and contaminants that are subject to Part 212. Section 5.0 provides an air quality modeling protocol that provides ERM’s proposed methodology for the air dispersion modeling evaluation.

3. FACILITY DESCRIPTION

3.1 FACILITY LOCATION

The Facility is located at 5500 Goodyear Drive, in the City of Niagara Falls, Niagara County, New York. The Facility is situated on a 29-acre parcel of land approximately 300 by 500 meters at its widest portions. Access to the Facility is limited by perimeter fencing and security gates.

The Facility is bounded to the south by other manufacturing facilities and to the north by private businesses. To the immediate west of the facility are rail lines and undeveloped land. To the east is 56th street and subsequent residential areas.

Significant activities that are located near the Goodyear facility include the following:

- A residential neighborhood, directly across 56th street on the eastern property line;
- A daycare facility (Safari Kids Club Daycare), is located approximately 2 kilometers to the west of the Facility;

- A school (Cataract Elementary School), is located approximately 1 kilometer to the east of the Facility;
- A hospital (Niagara Falls Memorial), is located about 4 kilometers to the west of the Facility; and
- An assisted living facility (Niagara Rehabilitation) is located approximately 4.2 kilometers to the west of the Facility.

3.2 FACILITY OPERATIONS

The Facility specializes in the manufacture of an antioxidant product that enhances the durability and performance of rubber, particularly in production of vehicle tires. The primary manufacturing equipment associated with the ASF Permit includes pre-mix tanks, a centrifuge, drum flaker, remelt tank, a replacement Tri-Mer® wet scrubber, a new Regenerative Thermal Oxidizer (RTO), and Elimination Tanks. The Facility also has nine tanks that are equipped with conservation vents and used to store raw materials and recycled material used in the manufacturing process. Additionally, the Facility has an onsite wastewater treatment system that removes organics using solvents and a packed-bed air stripper.

Air emission controls at the Facility include activated carbon systems, a vapor recovery system, fabric filters, condensers, a replacement wet scrubber and a new regenerative thermal oxidizer.

4. AIR CONTAMINANT EMISSIONS SUBJECT TO 6 NYCRR PART 212

The following steps were used to identify the air contaminants subject to Part 212 that require air dispersion modeling:

1. Identify permitted emission sources that do not qualify as a "process emission sources";
2. Identify process emission sources that are not subject to Part 212;
3. Identify process emissions that are not subject to Part 212;
4. Identify process emissions that are "conditionally exempt" from Part 212;
1. Classify contaminant emissions as Particulate Matter (PM), Volatile Organic Compound (VOC), Hazardous Air Pollutant (HAP), and high toxicity air contaminant (HTAC) per 6 NYCRR 212-2.2 Table 2;
5. Evaluate maximum annual HTAC emissions from Part 212-regulated process emission sources;
6. Confirm that there are no air contaminant emissions that are regulated by a New Source Performance Standard (NSPS) or National Emissions Standard for Hazardous Air Pollutants (NESHAP);
7. Identify non-HTACs with emissions less than 100 lb/yr; and
8. Identify contaminant emissions that require air dispersion modeling.

The following subsections provide the details for each of the steps identified in this analysis for the permitted processes and emission sources. For this step-by-step analysis, Appendices B-1 and B-2 were used.

Appendix B-1 presents the matrix of emission units, processes, and emission sources reflected in the ASF permit (with additional changes noted via red underlining and strikethrough) and reflects those emission sources that are potentially subject to Part 212. Appendix B-2 provides the maximum annual emission rates for the identified contaminants. The emission values represent the worst-case, annual emission rate for each emission source. For those emission sources that are equipped with emission control, the maximum annual emission rates reflect the maximum emission rate after control.

For those emission sources identified in Appendix B-1 that require modeling, Appendix B-2 provides the maximum hourly emission rate for each emission source or emission point in the process. The emission values represent the worst-case hourly emissions for each emission source. For those emission sources that are equipped with emission control, the maximum hourly emission rates reflect the maximum emission rate after control.

4.1 IDENTIFICATION OF PERMITTED EMISSION SOURCES THAT DO NOT QUALIFY AS A “PROCESS EMISSION SOURCES”

Based upon a review of the processes and emission sources identified in the ASF Permit, all emission sources qualify as “process emission sources”. With the exception of sources that are classified as exempt from permitting in accordance with the requirements of Part 201-3.2 and 201-3.3, there are no pieces of equipment that qualify as permittable “stationary combustion installations”.

4.2 IDENTIFICATION OF PROCESS EMISSIONS THAT ARE “CONDITIONALLY EXEMPT” FROM PART 212

Under §212-1.4, emissions of VOCs and particulates generated by certain types of regulated processes could be conditionally exempted from Part 212, provided that the NYSDEC does not determine that these air contaminants warrant an environmental rating of “A”. For this type of conditional exemption, the NYSDEC requires that air dispersion modeling be performed to demonstrate that the facility emissions of each speciated VOC do not exceed their respective AGC or SGC; only then can the environmental rating identified for each compound in DAR-1 be deemed to be an appropriate rating.

The Goodyear Facility is not eligible for any of the conditional exemptions included in §212-1.4.

4.3 CLASSIFICATION OF AIR CONTAMINANT EMISSIONS AS PARTICULATE MATTER (PM), VOLATILE ORGANIC COMPOUND (VOC), HAZARDOUS AIR POLLUTANT (HAP), AND HIGH TOXICITY AIR CONTAMINANT (HTAC)

Each contaminant was evaluated to determine whether it met any of the following definitions:

- Particulates;

- Volatile Organic Compound (VOC);
- Hazardous Air Pollutant (HAP); and
- High Toxicity Air Contaminant (HTAC) per 6 NYCRR 212-2.2 Table 2.

The regulatory classifications for each contaminant are included in Appendix B-1 and B-2.

4.4 IDENTIFICATION OF GENERAL PARTICULATE EMISSIONS THAT MAY NOT WARRANT A HIGH TOXICITY (“A”) CLASSIFICATION

There are processes at the Goodyear Facility that result in particulate emissions. These particulates include organic compounds as well as other compounds.

Emissions of “B”-rated particulates will be regulated by the particulate standard of §212-2.4(a). Based upon information provided by the NYSDEC, the Department requires that air dispersion modeling be performed to demonstrate that the facility emissions of each speciated particulate do not exceed the applicable AGC or SGC; only then can the environmental rating identified for each compound in DAR-1 be deemed to be an appropriate rating.

For this modeling evaluation, all known compounds comprising “particulate” were identified and speciated for modeling.

4.5 EVALUATION OF MAXIMUM ANNUAL HTAC EMISSIONS FROM PART 212-REGULATED PROCESS EMISSION SOURCES

The following HTACs may be emitted by the Facility’s process emission sources. These compounds are identified in Table 2 (HTAC List) of §212-2.2 with the specified Mass Emission Limits shown below. For those HTAC’s where the maximum annual emissions are greater than the maximum emission limit (MEL) value, an air dispersion modeling analysis will be required. Otherwise, for those HTACs that are less than the MEL value, air dispersion modeling is not required.

Table 4-1: Total Emissions of HTACs from Part 212-Regulated Process Emission Sources

HIGH TOXICITY AIR CONTAMINANT (HTAC)	CAS NO.	ORIGIN OF EMISSIONS	MASS EMISSION LIMIT (lb/yr)	PB TRIGGER	MAXIMUM ACTUAL EMISSIONS (lb/yr)	GREATER OR LESS THAN MEL
Ortho-Toluidine	95-53-4	Process	100	---	279	> MEL
Aniline	62-53-3	Process	1,000	---	319	< MEL

While air dispersion modeling for Aniline is not required, Goodyear will include Aniline in the list of air contaminants that will be modeled.

4.6 IDENTIFICATION OF CONTAMINANT EMISSIONS THAT ARE REGULATED BY AN NSPS OR NESHAP

For process emission sources that are subject to a federal NSPS, §212-1.5(e)(1) states that that the Part 212 requirements for the air contaminants that are regulated by the standard are satisfied if the facility owner or operator can demonstrate that the process emission source is in compliance with the NSPS. The Goodyear Facility has emission sources that are subject to 40 CFR Part 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels.

With the capping provisions included in the ASF permit, the Goodyear Facility is not subject to any federal NESHAP requirements.

4.7 IDENTIFICATION OF NON-HTACS WITH EMISSIONS LESS THAN 100 lb/yr

Per Section V-A of DAR-1, a Part 212 evaluation must include each non-HTAC air contaminant emitted at a rate *greater* than 100 lb/yr facility-wide. As shown in Appendix B-1, the maximum annual emissions of the non-HTAC compounds identified below are less than 100 lb/yr except for Ortho-Xylene. Emissions of these air contaminants are subject to Part 212, however, are also presumed to be in compliance with the requirements of Table 4 of §212-2.3. (Air dispersion modeling is not required for these compounds).

Table 4-2: Total Emissions of Non-HTACs from Part 212-Regulated Process Emission Sources (Contaminants Greater Than or Less Than 100 lb/yr)

AIR CONTAMINANT	CAS NO.	PHYSICAL STATE	TOXICITY CLASS	MAXIMUM ACTUAL EMISSIONS (lb/yr)	GREATER OR LESS THAN MEL (100 LB/YR)
Phenol	108-95-2	solid	Moderate	24	<100
ortho-Xylene	95-47-6	liquid	Moderate	11,634	>100
Hydroquinone	123-31-9	solid	Moderate	20	<100
Diphenylamine	122-39-4	solid	None	2.26	<100
Hydrogen chloride	07647-01-0	gas	Moderate	644	>100
Nailax**	68953-84-4	solid	Moderate	44	<100

****DAR-1 does not identify a toxicity classification for this chemical. Nailax emitted by process operations is not a listed chemical in DAR-1, Appendix A. NYSDEC DAR's Air Toxics Section (ATS) reviewed this chemical and provided the AGC and SGC in this table and assigned a classification of "Moderate" to this chemical.*

4.8 IDENTIFICATION OF AIR CONTAMINANT EMISSIONS THAT REQUIRE AIR DISPERSION MODELING

Air dispersion modeling is required for the following types of air contaminants that are regulated by or are potentially regulated by Part 212-2:

- HTACs that are emitted at a rate greater than their respective Mass Emission Limit (MEL).
- Air contaminants that are emitted at a rate greater than 100 lb/yr and are not regulated by an applicable NESHAP.

If an air contaminant is subject to a NESHAP, and all emissions of the contaminant from the facility's process emission sources originate solely from NESHAP sources, the air contaminant does not require modeling. Otherwise, if emissions of an air contaminant originate from both NESHAP sources and non-NESHAP sources, the contaminant emissions from all regulated sources (including the NESHAP sources) must be included in the air dispersion model.

According to the criteria above, some contaminants emitted by the facility would not require modeling. Nonetheless, air dispersion modeling will be completed for all known contaminants.

The following table provides a summary of the emission points, emission sources and air contaminants that require air dispersion modeling.

Table 4-3: Emission Points & Contaminants that Require Part 212 Air Dispersion Modeling

EMISSION POINT ID	EMISSION SOURCE ID(s)	EMISSION SOURCE DESCRIPTION	AIR CONTAMINANT(s) (CAS No.)
Fugitives	Fugitives (Equipment Components)	Fugitive emissions from the facility-wide manufacturing process equipment components	Ortho-toluidine (00095-53-4) Ortho-xylene (00095-47-6) Aniline (00062-53-3) Phenol (00108-95-2)
0C2E0	0C2E0	Air Stripper	Ortho-xylene (00095-47-6)
3393A	3393	Sparkler Filter	Hydroquinone (00123-31-9)
32034	3034	Sparkler Filter	Ortho-toluidine (00095-53-4) Ortho-xylene (00095-47-6) Aniline (00062-53-3) Phenol (00108-95-2) Diphenylamine (00122-39-4) Nailax (68953-84-4)
000N2	0F0N2	Packaging Dust Collector	PM

EMISSION POINT ID	EMISSION SOURCE ID(s)	EMISSION SOURCE DESCRIPTION	AIR CONTAMINANT(s) (CAS No.)
000N3	000N3	Drum Flaker (Tri-Mer Scrubber/RTO)	Ortho-toluidine (00095-53-4) Ortho-xylene (00095-47-6) Aniline (00062-53-3) Phenol (00108-95-2) Diphenylamine (00122-39-4) Hydroquinone (00123-31-9) Hydrogen Chloride (07647-01-0)
		Elimination Tank #1(Tri-Mer Scrubber/RTO)	Ortho-toluidine (00095-53-4) Ortho-xylene (00095-47-6) Aniline (00062-53-3) Phenol (00108-95-2) Diphenylamine (00122-39-4) Hydroquinone (00123-31-9) Hydrogen Chloride (07647-01-0)
		Elimination Tank #2(Tri-Mer Scrubber/RTO)	Ortho-toluidine (00095-53-4) Ortho-xylene (00095-47-6) Aniline (00062-53-3) Phenol (00108-95-2)

EMISSION POINT ID	EMISSION SOURCE ID(s)	EMISSION SOURCE DESCRIPTION	AIR CONTAMINANT(s) (CAS No.)
000N4	0F0N4	Conveyor Dust Collector	Diphenylamine (00122-39-4) Nailax (68953-84-4)
32009	3009	Sump Holding Tank	Ortho-toluidine (00095-53-4) Aniline (00062-53-3) Phenol (00108-95-2)
F0101	0F101	o-Xylene Storage Tank	Ortho-xylene (00095-47-6)
F0103	0F103	Recycle material storage tank	Ortho-toluidine (00095-53-4) Ortho-xylene (00095-47-6) Aniline (00062-53-3) Phenol (00108-95-2)
F0104	0F104	Recycle material storage tank	Ortho-toluidine (00095-53-4) Ortho-xylene (00095-47-6) Aniline (00062-53-3) Phenol (00108-95-2)
F0106	0F106	Aniline storage tank	Aniline (00062-53-3)
F0107	0F107	Recycle material storage tank	Ortho-toluidine (00095-53-4) Ortho-xylene (00095-47-6) Aniline (00062-53-3) Phenol (00108-95-2)

EMISSION POINT ID	EMISSION SOURCE ID(s)	EMISSION SOURCE DESCRIPTION	AIR CONTAMINANT(s) (CAS No.)
F0108	F0108	ortho-Toluidine storage tank	Ortho-toluidine (00095-53-4)
F0109	0F109	Aniline storage tank	Aniline (00062-53-3)
F0110	F0110	ortho-Toluidine storage tank	Ortho-toluidine (00095-53-4)
F0112	F0112	ortho-Toluidine storage tank	Ortho-toluidine (00095-53-4)
F1862	F1862	Solvent Extraction Condenser	Ortho-xylene (00095-47-6)

4.9 FUGITIVE EMISSIONS MODELING

Calculations of fugitive emissions involve a combined measurement and emissions estimation methodology. Fugitive emissions of ortho-toluidine were calculated using saturation value methodology, as detailed in ERM's technical memo to the NYSDEC and titled "Ortho-toluidine Fugitive Emission Estimation Approach" dated May 9, 2025 and updated Agust 29, 2025 that more accurately estimates the equipment component fugitive emissions. The fugitives were calculated based on the Correlation Approach found in the 1995 US EPA document, *Protocol for Equipment Leak Emissions Estimates*.

Through the correlation approach, Goodyear collaborated with Alliance Technical Group to conduct a Leak Detection and Repair (LDAR) assessment of all components at the facility on June 21 through June 23, 2025. This evaluation aimed to deliver a more accurate estimation of the actual fugitive emissions of O-T, aniline and phenol at the facility for the US EPA's Toxic Release Inventory (TRI) reporting and future modeling efforts. The results from the LDAR assessment are outlined in Appendix A. The majority of components did not show any leaks during the assessment. For components with a measured screening value, emissions were determined using the equations provided in Table 2-9 of the US EPA Protocol document. In instances where no emissions were detected, calculations utilized the "default zero" emission rates specified in Table 2-11 of the US EPA Protocol document. By employing this method, the mass fraction of O-T indicates that the total calculated fugitive emissions for O-T is 19.2 pounds per year (lb/yr), aniline is 4.41 lb/yr, phenol is 1.77 lb/yr and o-Xylene is 7.08 lb/yr. The variables utilized in these calculations are detailed in Table 1. Table 2 illustrates the vapor mass fraction used to speciate the VOC emissions and compute O-T emissions.

5. AERMOD AIR DISPERSION MODELING PROTOCOL

Based upon the evaluation performed in Section 4.0, an air dispersion modeling assessment must be performed to evaluate the short-term and annual ambient impacts of emissions of two compounds from the facility's Part 212-regulated emission sources: Ortho-toluidine and ortho-xylene. Other pollutants that fell below their respective MEL will be included out of an abundance of caution.

This section provides a discussion regarding the air dispersion modeling approach.

5.1 OVERVIEW OF MODELING METHODOLOGY

The ambient concentration of air contaminants are estimated using a dispersion model applied in conformance to applicable guidelines. The methodology proposed in this protocol is based on policies and procedures contained in the USEPA Guideline on Air Quality Models (GAQM, 40CFR Appendix W, 17 January 2021), and NYSDEC Policy "DAR-10 : NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis" (1 September 2020).

The key elements of the air quality impact analysis will be as follows:

- Use the latest version of AERMOD (v.24142) with the regulatory default options in the rural mode;
- Use of surface meteorological data collected at the National Weather Service (NWS) observation station at Niagara Falls International Airport, Niagara Falls, NY (WBAN No. 04724) and upper air data from the NWS observation station in Buffalo, NY (WBAN No. 14733) for the period 2020-2024. These data will be obtained from the NYSDEC;
- Conduct air quality modeling to quantify the magnitude and location of model predicted concentration of Part 212-regulated emissions from the Facility, and
- Compare the predicted impacts of modeled air contaminants to the applicable Annual Guideline Concentration (AGC) and Short-term Guideline Concentration (SGC) values identified in the AGC/SGC tables of NYSDEC's "DAR-1: Guidelines for the Evaluation and Control of Ambient Air Contaminants Under Part 212" (12 February 2021).

Table 5-1 provides a summary of the compounds that are listed in DAR-1 with AGC and/or SGC values. Note that Nailax is not a listed contaminant in DAR-1 Appendix A's AGC/SGC Tables. Since Nailax is not a listed chemical, NYSDEC's Division of Air Resources, Air Toxics Section (ATS) evaluated Nailax for the development of an AGC and SGC. The information in Table 5-1 provides a summary of the AGC/SGC values listed in DAR-1, including the AGC/SGC for Nailax that was developed by ATS.

Table 5-1: Summary of AGC/SGC Values Listed in NYSDEC Policy DAR-1

Air Containment	CAS NO.	HTAC?	MEL (lbs/yr)	SGC (µg/m^3)	AGC (µg/m^3)
Aniline	00062-53-3	Y	1,000	---	0.63
Diphenylamine	00122-39-4	N	100	---	24
Phenol	00108-95-2	N	100	5,800	20
Ortho-Toluidine	00095-53-4	Y	100	---	0.02
Ortho-Xylene	00095-47-6	N	100	22,000	100
Hydrogen Chloride	07647-01-0	N	100	2,100	20
Hydroquinone	00123-31-9	N	100	--	2.4
Nailax	68953-84-4	N	100	2,400	4.0

As shown in Table 5-1, aniline and ortho-toluidine are HTACs with assigned AGCs. In accordance with DAR-1 Section V.B a cumulative inhalation cancer risk assessment of the HTAC emissions from aniline and ortho-toluidine will be incorporated into the modeling analysis using post-installation estimates for the replacement wet scrubber and the new RTO using the following procedure.

1. Aniline and o-toluidine will be modelled individually (as defined above);
2. The inhalation cancer risk of aniline ($Risk_A$) and o-toluidine ($Risk_{O\text{-}T}$) will be estimated using the following equations:

   $Risk_A$ (unitless) = C_A (µg/m^3) ÷ AGC_A (µg/m^3)

   $Risk_{O\text{-}T}$ (unitless) = $C_{O\text{-}T}$ (µg/m^3) ÷ $AGC_{O\text{-}T}$ (µg/m^3)

   where C_A and $C_{O\text{-}T}$ are the annual maximum model-predicted concentrations of aniline and o-toluidine, respectively, and AGC_A and $AGC_{O\text{-}T}$ are the annual guideline concentrations of aniline and o-toluidine, respectively.
3. Estimate the cumulative inhalation cancer risk ($Risk_T$) of aniline and o-toluidine using the following equation:

   $Risk_T = Risk_A + Risk_{O\text{-}T}$

If $Risk_T$ is less than a one-in-a-million inhalation cancer risk (i.e., 1 × 10−6), no further action is needed. If $Risk_T$ is greater than 1×10^{-6}, Goodyear shall:

- Demonstrate the degree of air cleaning requirements specified in 6 NYCRR Part 212 are being met for both contaminants, or
- Successfully demonstrate the use of Toxics Best Available Control Technology (T-BACT) for emission sources of aniline and o-toluidine.

Note that the $Risk_T$ of 10-in-a-million inhalation cancer risk (i.e., 1×10^{-5}) is allowed.

The results of the cumulative inhalation cancer risk assessment will be included in the combined AERMOD modelling and Part 212 Analysis Report.

5.2 FACILITY PROPERTY DESCRIPTION

Section 3.1 provides a general overview of the Facility location, boundaries, and surrounding area. The information provided in Section 3.1 is directly relevant to the air dispersion modeling analysis.

The Facility is located at 5500 Goodyear Drive in the City of Niagara Falls, Niagara County, New York. The approximate Universal Transverse Mercator (UTM) coordinates for the facility are 662694.44 meters Easting by 4772372.33 meters Northing (NAD 1983, Zone 17). Figure 5-1 provides a general area map showing the location of the facility and surrounding area, while Figures 5-2 and 5-3 show the buildings within the property boundary as well as the location of the emission points that require Part 212 air dispersion modeling, respectively. Table A-2 in Appendix A lists the structures included in the downwash analysis, which corresponds to the model IDs in Figure 5-2. Maximum length and width are estimated for most structures because they were drawn as polygons and that information is not provided in the Building Profile Input Program (BPIP). A continuous fence and gate will restrict public access to the Facility. Consistent with modeling guidance, impact receptors will be removed from within the Facility's fence line.

Figure 5-1: Location of the Goodyear Facility

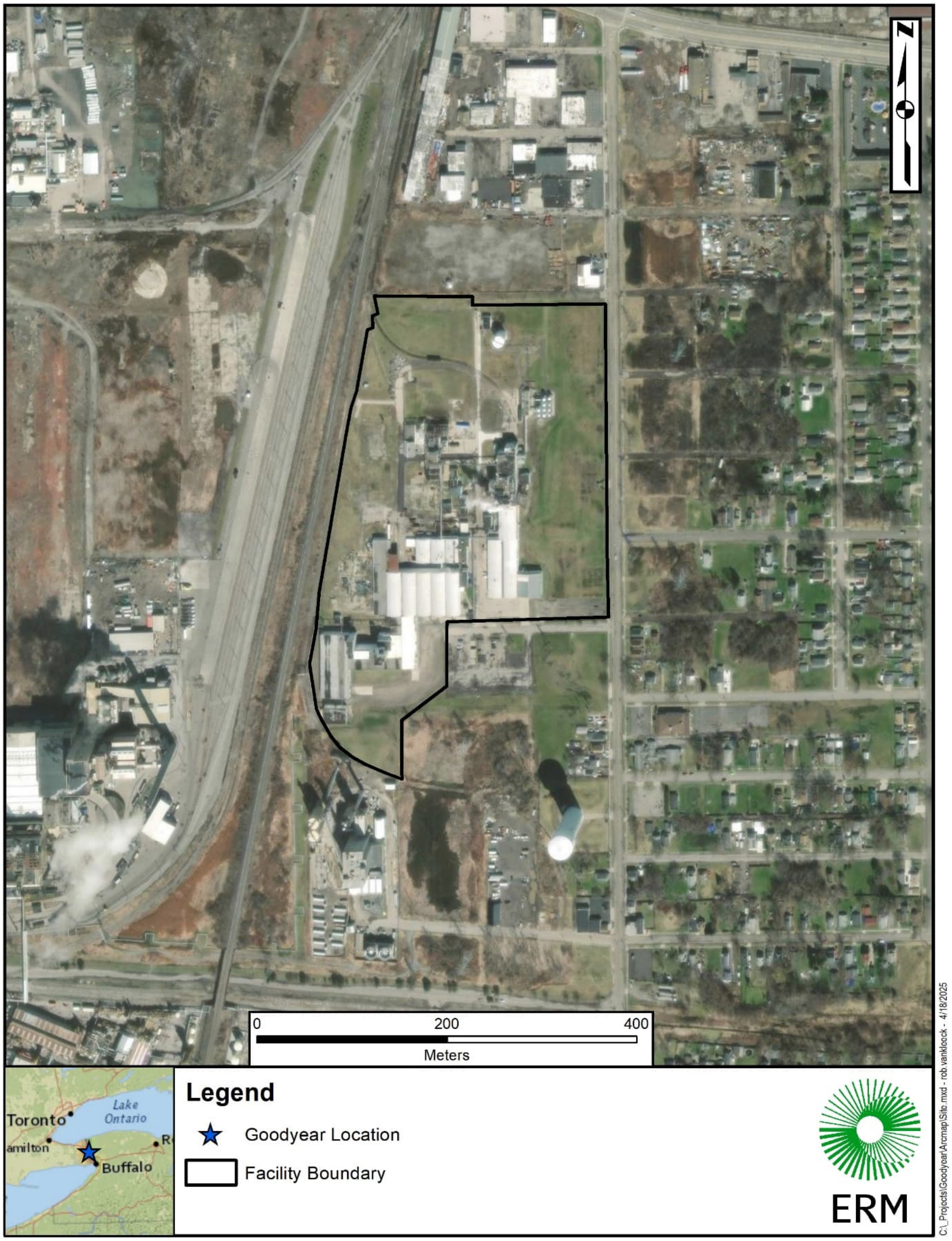


Figure 5-2: Structures at the Goodyear Niagara Falls Facility

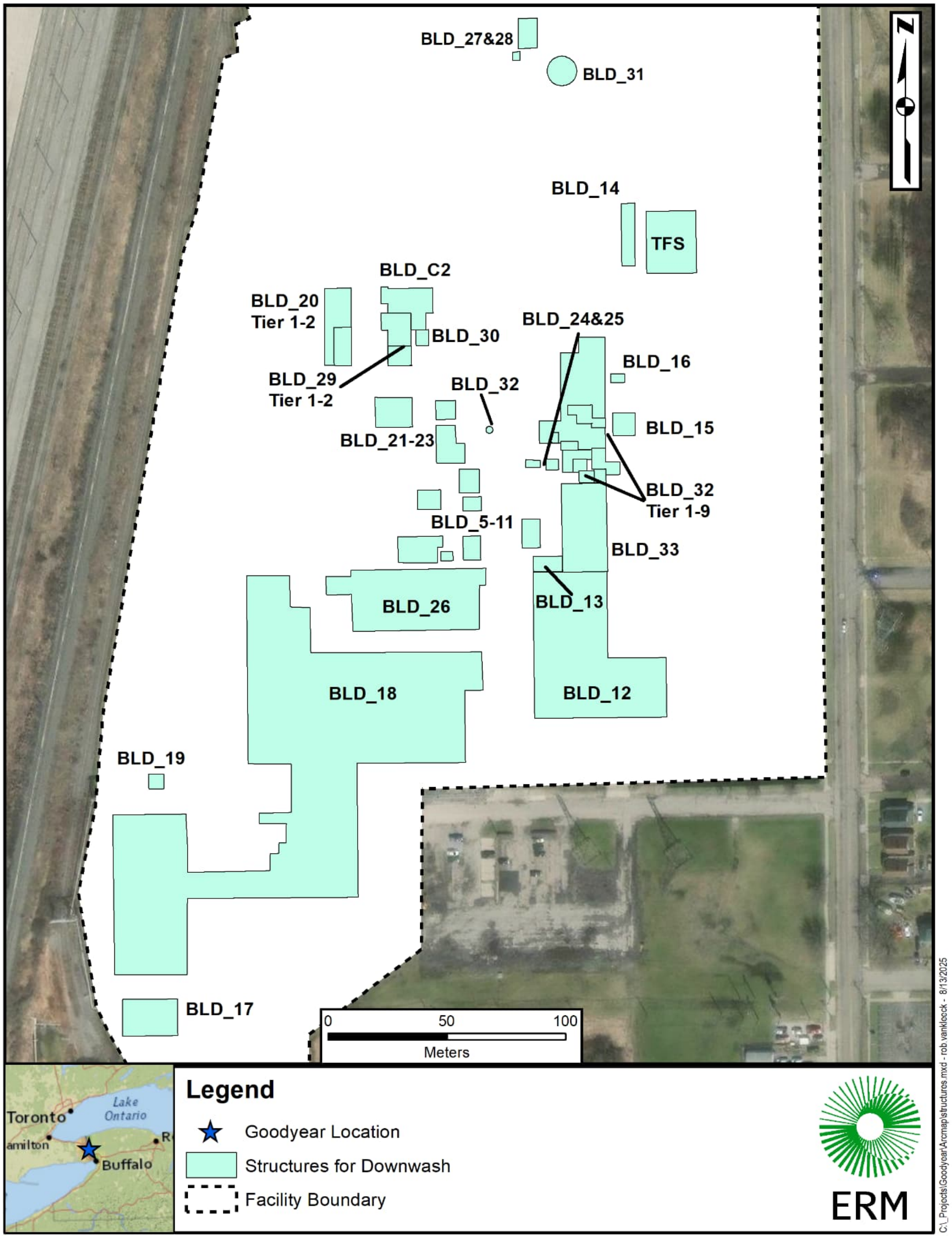
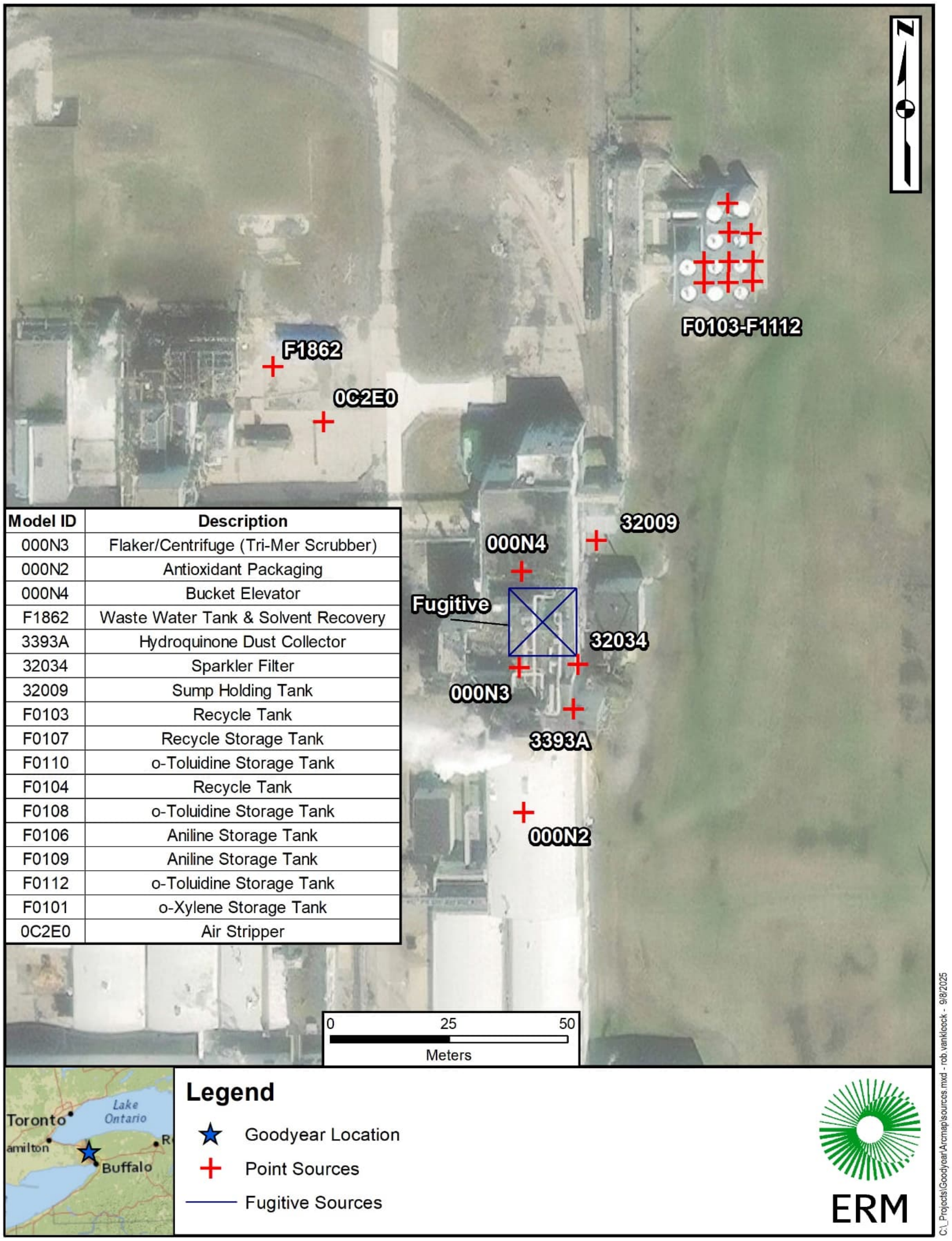


Figure 5-3: Sources at the Goodyear Niagara Falls Facility



Model ID	Description
000N3	Flaker/Centrifuge (Tri-Mer Scrubber)
000N2	Antioxidant Packaging
000N4	Bucket Elevator
F1862	Waste Water Tank & Solvent Recovery
3393A	Hydroquinone Dust Collector
32034	Sparkler Filter
32009	Sump Holding Tank
F0103	Recycle Tank
F0107	Recycle Storage Tank
F0110	o-Toluidine Storage Tank
F0104	Recycle Tank
F0108	o-Toluidine Storage Tank
F0106	Aniline Storage Tank
F0109	Aniline Storage Tank
F0112	o-Toluidine Storage Tank
F0101	o-Xylene Storage Tank
0C2E0	Air Stripper

In various recycle tanks, unreacted raw material from the product manufacturing process is recovered and recycled back into the manufacturing process. The recycle material composition varies based on the variability of recovered and recycled unreacted raw materials from the batch manufacturing process, but recent recycled raw material composition testing conducted at the Facility provides the average weight percentages of the following raw materials:

- 33.09% O-xylene
- 13.28% Aniline
- 13.12% Phenol
- 22.49% O-Toluidine
- 0.61% Hydroquinone
- 2.93% Nailax
- 1.88% Water

5.3 EMISSION SOURCE CHARACTERIZATION

The Goodyear Manufacturing facility has 16 emission points that require Part 212 air dispersion modeling. All emission points will be modeled as point sources that exhaust vertically; some sources have rain caps or other obstructions to vertical flow. Table 5-2 provides the source characteristics that will be input into the dispersion model. Fugitive emissions will also be addressed in the final modeling submittal, as described in Section 4.2. The approximate location of the fugitive source is indicated in Figure 5-3, with a release height of approximately 14 meters. It will be modeled as a volume source centered at this height; this represents fugitives escaping the top of the main structure in the vicinity of other process sources.

Table 5-2: Point Source Characteristics

Emission Point ID	UTMx (m)	UTMy (m)	Base Elevation (m)	Stack Height (m)	Exit Temp (K)	Exit Velocity (m/s)	Stack Diameter (m)	Capped?
000N2	662675.52	4772301.27	173.64	10.36	297.04	8.62	0.46	Yes
000N3	662674.65	4772331.75	173.64	24.38	306.89	7.88	0.65	No
000N4	662675.11	4772351.95	173.64	18.59	310.78	5.83	0.30	No
32009	662690.91	4772358.44	173.64	15.54	294.26	0.58	0.10	No
32034	662686.96	4772332.42	173.64	16.76	300.93	8.18	0.81	Yes
3393A	662686.04	4772322.99	173.64	17.07	295.37	10.20	0.56	Yes
0C2E0	662633.42	4772383.48	173.64	3.35	294.26	1.17	0.10	No

Emission Point ID	UTMx (m)	UTMy (m)	Base Elevation (m)	Stack Height (m)	Exit Temp (K)	Exit Velocity (m/s)	Stack Diameter (m)	Capped?
F0101	662718.59	4772429.54	173.64	8.84	294.00	0.23	0.05	Yes
F0103	662723.84	4772413.10	173.64	8.84	294.26	0.23	0.05	Yes
F0104	662723.86	4772417.30	173.64	8.84	294.26	0.23	0.05	Yes
F0106	662723.50	4772423.16	173.64	1.22	294.26	0.23	0.05	Yes
F0107	662718.62	4772412.80	173.64	8.84	294.26	0.23	0.05	No
F0108	662718.78	4772417.21	173.64	8.84	294.26	0.23	0.05	Yes
F0109	662713.61	4772417.12	173.64	1.22	294.26	0.23	0.05	Yes
F0110	662713.61	4772412.71	173.64	8.84	294.26	0.23	0.05	Yes
F0112	662718.82	4772423.38	173.64	8.84	294.26	0.23	0.05	Yes
F1862	662622.73	4772395.16	173.64	3.35	294.26	1.17	0.10	No

Appendix A provides a summary of the emission rates that will be used in the air modeling exercise. Values were calculated using the maximum annual emission rate (pounds per year) and maximum hourly emission rate (pounds per hour). Where more than one emission source is exhausted via a common emission point, the emission rate represents the total mass flow from all sources ducted to the emission point.

5.4 MODELING METHODOLOGY

5.4.1 MODEL SELECTION AND APPLICATION

The latest version of USEPA's AERMOD model (version 24142) will be used to predict the ambient impacts for each modeled air contaminant. Regulatory default options will be used in the analysis.

5.4.2 GEOGRAPHIC SETTING – TERRAIN AND LAND USE CHARACTERISTICS

The terrain around the facility and within the modeling domain is generally flat with a slight downward slope towards the south. The Niagara River (located approximately 1.4 kilometers south of the facility) runs through the modeling domain.

The land use surrounding the facility can be generally described as developed land, or more specifically high/medium/low intensity developed land use. Although the area is generally high to medium intensity developed land, the relative percentage of this land use category did not meet the criteria to be classified as "urban" that is described in Section 7.2.1.1(b)(i) of 40 CFR 51

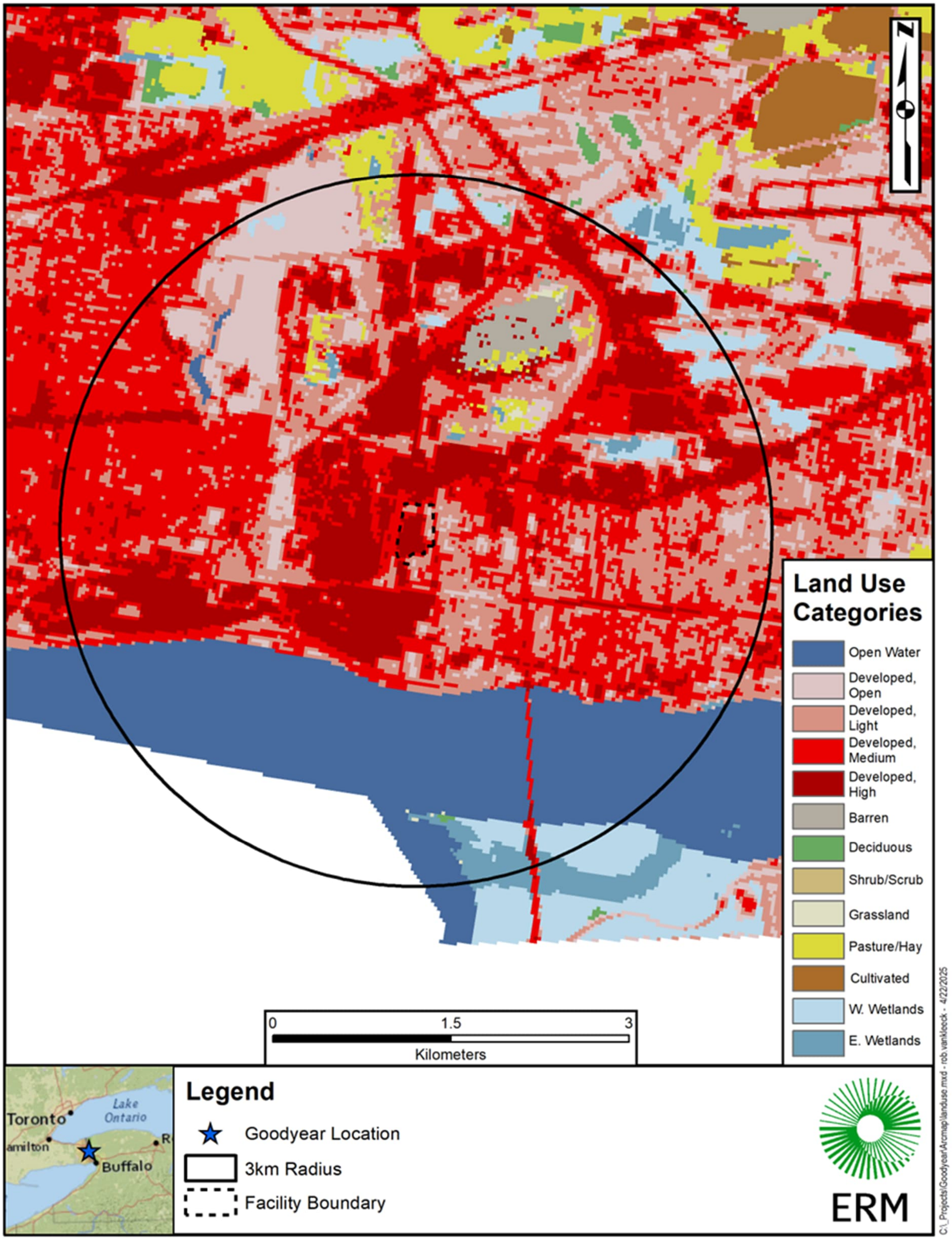
Appendix W (The Guideline on Air Quality Models). The urbanized land use categories (Medium and Urban Development) accounted for about 29.26% of the total land use within three kilometers of the proposed location. Low intensity developed land accounted for about 24% of the total land use area.

Table 5-3 tabulates the results of the National Land Cover Dataset (2016) within 3 kilometers of Goodyear Facility depicted in Figure 5-4. Some of this radius includes uncategorized land use across the international border under Grid Code 0.

Table 5-3: Land Use Analysis Around 3-km of the Goodyear Facility

Grid Code	Grid Code Description	pixel count	Area (km^2)	Area (%)
0	Missing/Out-of-Bounds:	1,301	1.17	4.14%
11	Open Water:	5,787	5.21	18.42%
21	Developed, Open Space:	3,506	3.16	11.16%
22	Developed, Low Intensity:	7,827	7.05	24.92%
23	Developed, Medium Intensity:	5,104	4.59	16.25%
24	Developed, High Intensity:	4,085	3.68	13.01%
31	Barren Land (Rock/Sand/Clay):	830	0.75	2.64%
41	Deciduous Forest:	195	0.18	0.62%
43	Mixed Forest:	10	0.01	0.03%
52	Shrub/Scrub:	395	0.36	1.26%
71	Grasslands/Herbaceous:	169	0.15	0.54%
81	Pasture/Hay:	578	0.52	1.84%
82	Cultivated Crops:	501	0.45	1.60%
90	Woody Wetlands:	797	0.72	2.54%
95	Emergent Herbaceous Wetland:	325	0.29	1.03%
TOTAL		31,410	28.27	100.00%
URBAN AREA		9,189	8.27	29.26%

Figure 5-4: Land Use Categorizations Around the Goodyear Facility



5.4.3 METEOROLOGICAL DATA

Guidance for air quality modeling recommends the use of one year of onsite meteorological data or five years of representative off-site meteorological data. Since onsite data are not available for the Facility, meteorological data available from the National Weather Service (NWS) will be used in this analysis.

NYSDEC has provided five recent years (2020-2024) of AERMOD-ready pre-processed meteorological data (AERMET v. 24142) using surface observations from Niagara Falls International Airport (KIAG) and upper air data from Buffalo, NY. The relative locations of the Facility and the Niagara Falls International Airport are shown in Figure 5-5. Table 5-4 summarizes the data characteristics of the surface observation site. The 5-year wind rose for the Niagara Falls International Airport is provided in Figure 5-6. The predominant wind direction at this airport is from the southwest (with secondary flow from the east).

Table 5-4: Characteristics of Meteorological Data from the Niagara Falls International Airport

Parameter	Value
Distance from Goodyear	5.82 km
Average Wind Speed	4.54 m/s
Percent Calm Hours	0.68%
Data Completeness	99.61%

Due to its close proximity to Goodyear, the meteorological data available from Niagara Falls International Airport is suitably representative of conditions at the Facility. ERM proposes to use the five years of processed meteorological data from this airport for the modeling analysis.

Figure 5-5: Location of Goodyear in Relation to Niagara Falls International Airport

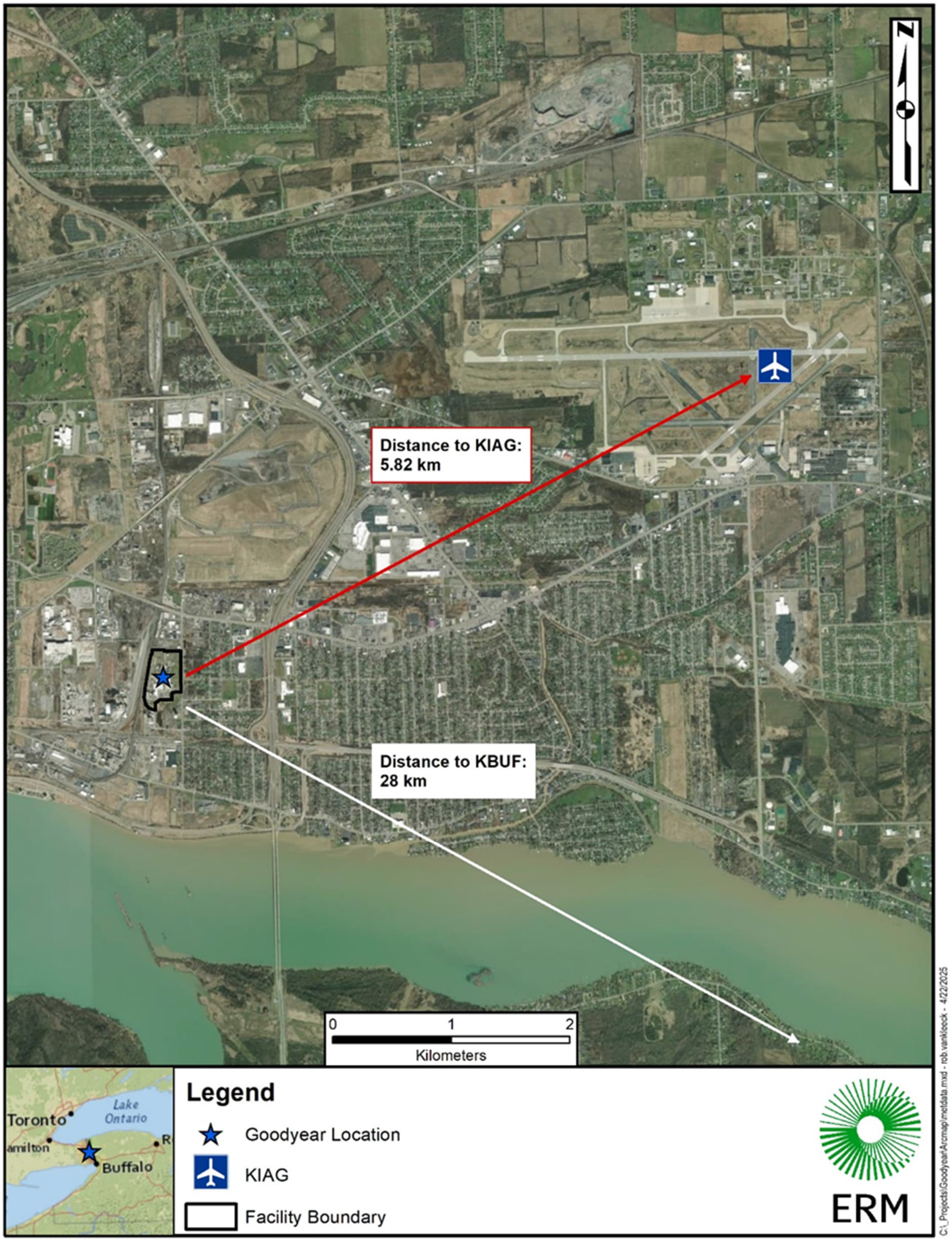
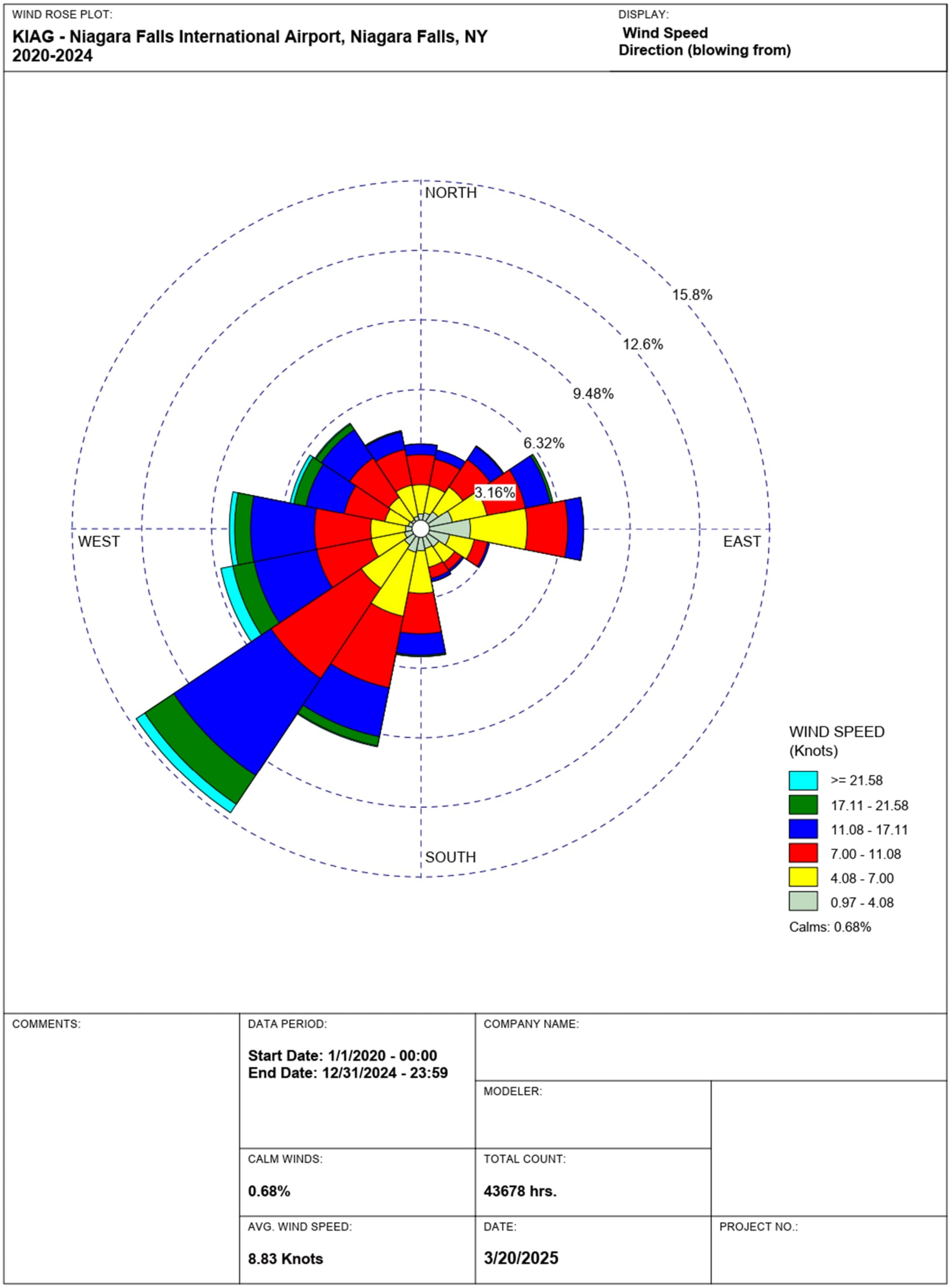


Figure 5-6: 5-year Wind Rose (2020-2024) for Niagara Falls International Airport



5.4.4 RECEPTOR GRID

A comprehensive Cartesian receptor grid extending out to approximately 10 kilometers (km) from the center of the proposed facility will be used in the AERMOD modeling analysis to assess the maximum ground-level concentration of each air contaminant. While it is expected that the 10-km receptor grid will be more than sufficient to resolve the maximum impacts and any potential significant impact area(s), should modeled impacts be found to not be clearly decreasing at the edge of the grid, the review area will be expanded as needed to capture the maximum impacts.

The Cartesian receptor grid will consist of the following receptor spacing, per NYSDEC Modeling Guidance:

- 20-meter spacing along the facility fenceline;
- 70- meter spacing extending from the fenceline to 1 km;
- 100-meter spacing extending from 1 km to 2 km;
- 250-meter spacing extending from 2 km to 5 km; and
- 500-meter spacing extending from 5 km to 10 km.

Figures 5-7 and 5-8 show the near field and far field Cartesian receptor grid, respectively. Receptors were removed in areas across the international border. In addition to the receptor grid, 14 sensitive receptors were identified representing five categories (hospitals, daycare centers, nursing homes, schools, and residences). These sensitive receptors were selected based on proximity to the facility and are located spatially around the property. Table 5-6 provides a summary of these sensitive receptors, while Figure 5-9 shows the location of the sensitive receptors relative to the location of Goodyear. All sensitive receptor addresses are in the City of Niagara Falls, and Figure 5-9 labels receptors by their Receptor Number in Table 5-5.

Terrain elevations from National Elevation Data (NED) from USGS were processed using the most recent version of AERMAP (v.24142) to develop the receptor terrain elevations required by AERMOD. Per DAR-10 Guidance, 1/3 arc second (10m) data was used for assigning these elevations.

Table 5-5: Identification of Sensitive Receptors

Receptor No.	Type	Name	Address	Approximate Distance from Goodyear (km)
1	Hospital	Niagara Falls Medical Center	621 10th St	4.01
2	Daycare	Safari Kids Club Daycare	2745 Niagara St	2.07
3	Daycare	LaSalle Early Childhood Center	8477 Buffalo Ave	3.20
4	Daycare	First Step Child Care Center	2113 Military Rd	2.53
5	Nursing Home	Niagara Rehabilitation-Nursing	822 Cedar Ave	4.28
6	School	Cataract Elementary School	6431 Girard Ave	1.02
7	School	Bloneva Elementary School	2513 Niagara St	2.39
8	School	Gaskill Preparatory School	910 Hyde Park Blvd	2.36
9	School	LaSalle Preparatory School	7436 Buffalo Ave	2.32
10	Residence	Nearby Residence	547 56th St	0.22
11	Residence	Nearby Residence	512 56th St	0.28
12	Residence	Nearby Residence	5631 Girard Ave	0.26
13	Residence	Nearby Residence	5629 Charles Ave	0.31
14	Business	Fred's Your Auto Body Repair	530 56th St	0.26

Figure 5-7: Near-Field Receptor Grid

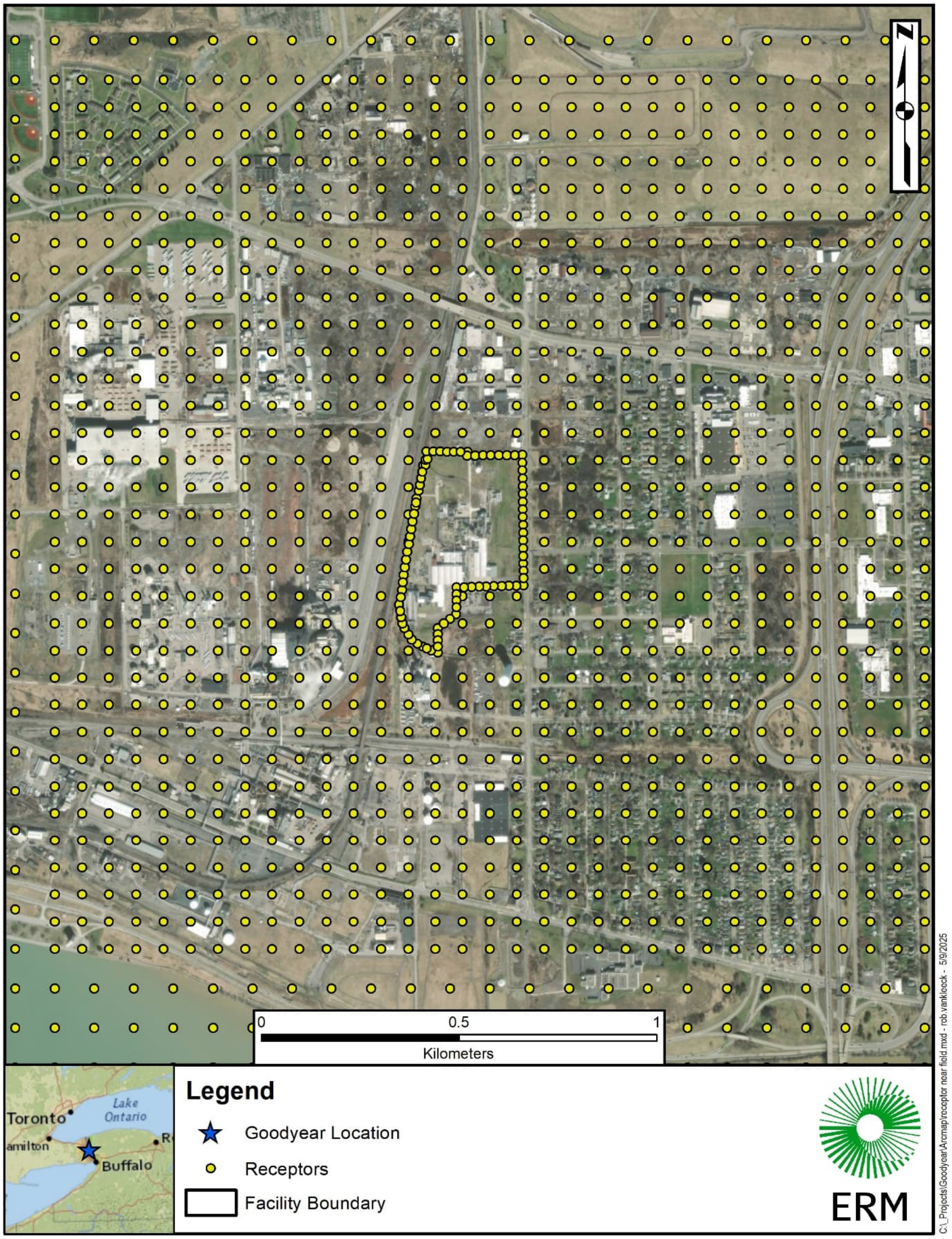


Figure 5-8: Far-Field Receptor Grid

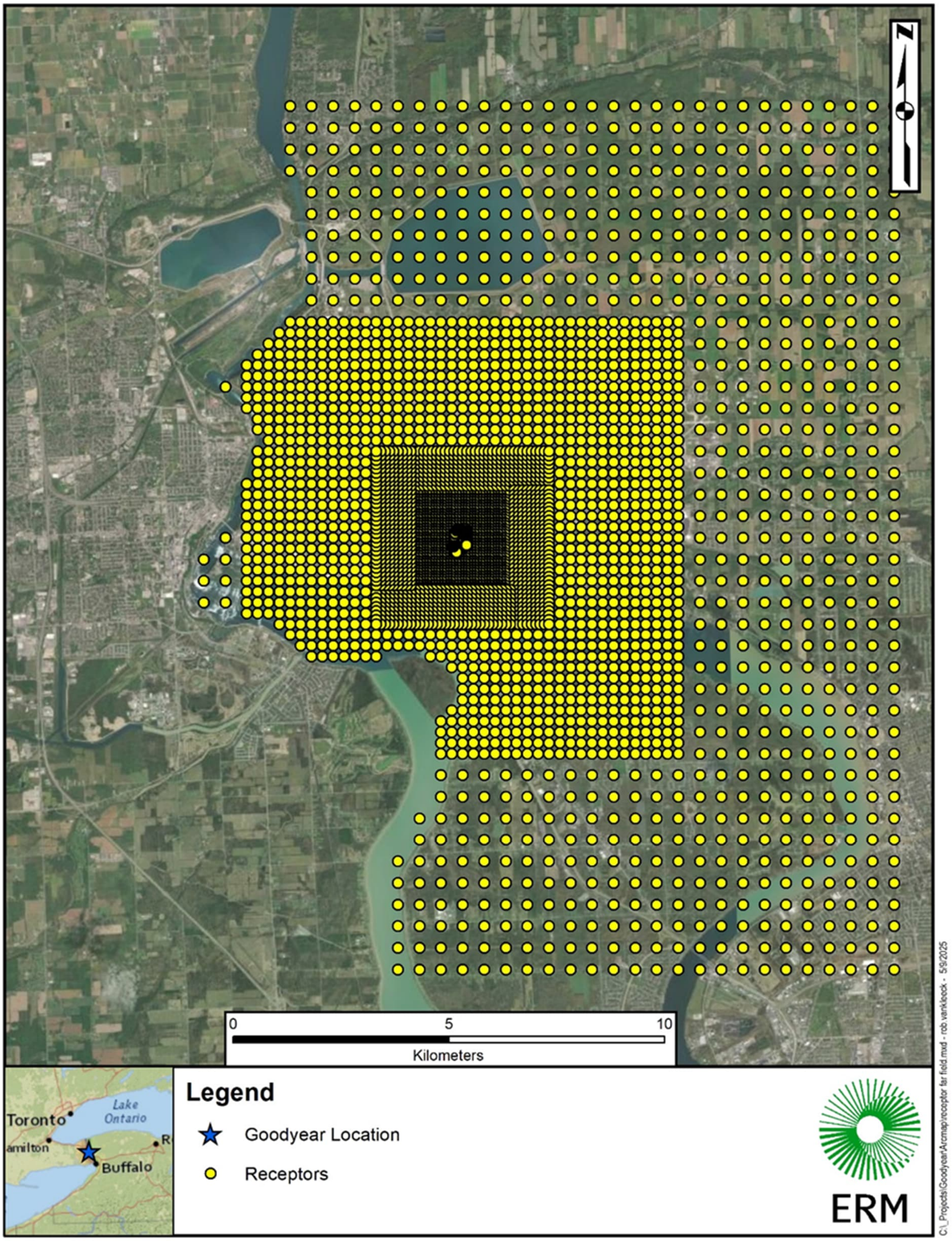
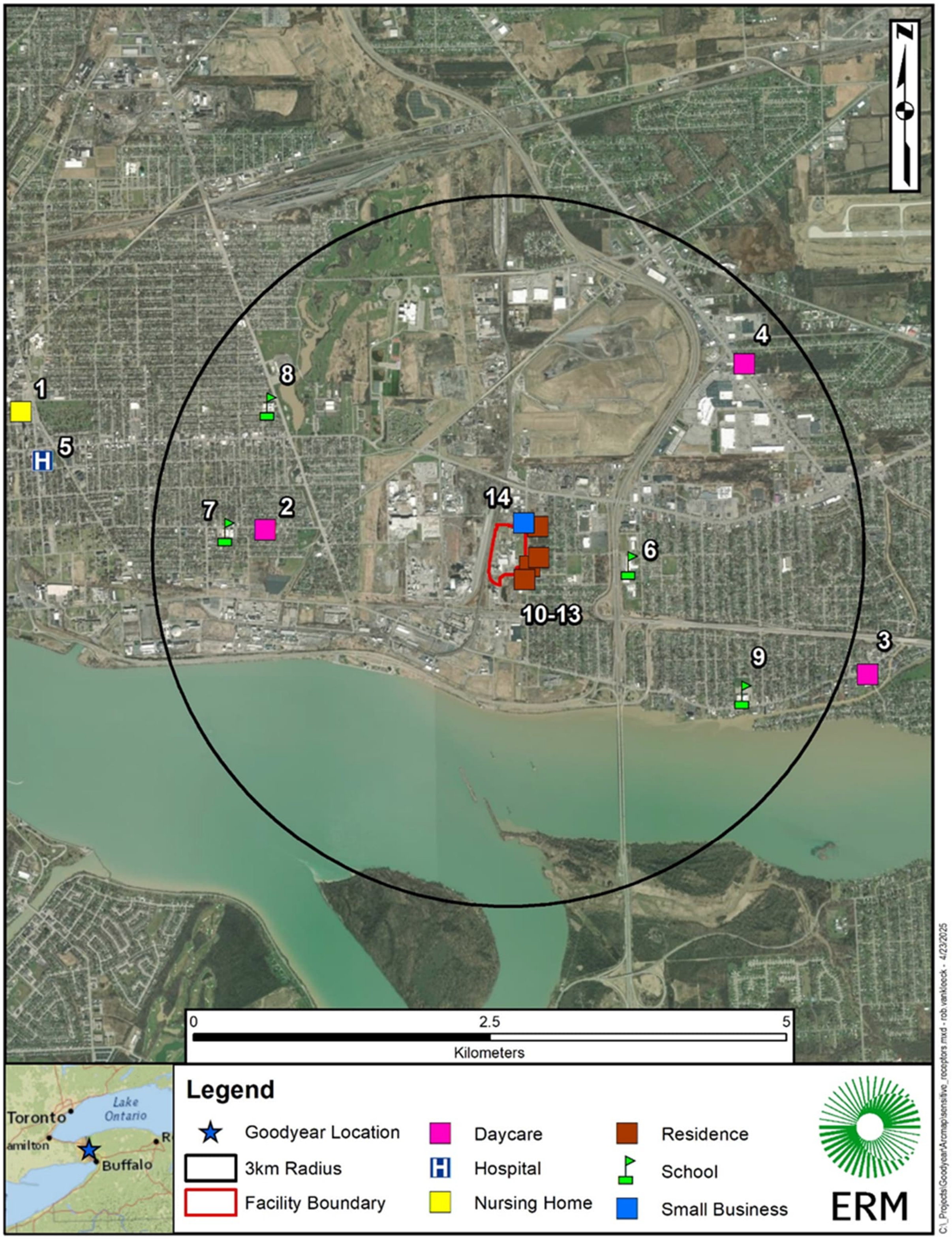


Figure 5-9: Location of Sensitive Receptors



5.4.5 GOOD ENGINEERING PRACTICE (GEP) STACK HEIGHT ANALYSIS

Per 40 CFR 51, stack heights in excess of the Good Engineering Practice (GEP) stack height may not be used to establish emissions limitations. GEP is defined as the greater of 65 m or the formula height, defined by the following:

$$H_{GEP} = H_b + 1.5\ L$$

where,

H_{GEP} = formula GEP stack height
H_b = height of nearby building
L = lesser of the height and maximum projected width of adjacent or nearby building

The Building Profile Input Program (BPIP), version 04274, will be used to make the determination on what building(s) affect(s) each modeled point source and the appropriate dimensions of the building to use for each source in the modeling analysis, as well as calculate the formula GEP height for each modeled source.

To determine whether aerodynamic building downwash from any building could affect a stack, the radius of influence from the building will be determined. For purposes of downwash in regulatory dispersion modeling, the radius of influence of a building is a distance referred to as "5L", that is, five times the height or maximum projected width (whichever is less) of the building itself. Any point source located within the 5L distance from a building would potentially be subject to downwash. BPIP was used to make the determination on what building(s) affect a modeled point source and the appropriate dimensions of the building to use in AERMOD's downwash algorithms. Figure 5-2 shows the structure heights and relative location to the sources.

5.4.6 PRESENTATION OF MODELING RESULTS

Ground level modeled concentrations will be identified for the appropriate averaging periods for evaluation against the applicable Annual Guideline Concentration (AGC) and Short-term Guideline (SGC) values identified in the AGC/SGC tables of NYSDEC's Policy DAR-1 ("Guidelines for the Evaluation and Control of Ambient Air Contaminants Under Part 212", revised 12 February 2021.

Modeling results will be presented in a tabular format. A modeling archive will be provided to the NYSDEC with the final report.

6. REFERENCES

New York State Department of Environmental Conservation, “DAR-1: Guidelines for the Evaluation and Control of Ambient Air Contaminants Under Part 212”, 12 February 2021.

New York State Department of Environmental Conservation, “DAR -10: NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis”, 1 September 2020.

U.S. Environmental Protection Agency, AERMOD Implementation Guide (EPA-454/b-241-0006) November 2024.

U.S. Environmental Protection Agency, Guideline on Air Quality Models (GAQM, 40 CFR Appendix W), 17 January 2017.

APPENDIX A PART 212 SOURCE EMISSIONS AND STRUCTURES FOR DOWNWASH

Table A-1: Summary of Emission Rates used in Modeling Analysis

	Aniline (CAS 00062-53-3)		Ortho-toluidine (CAS 00095-53-4)		Phenol (CAS 00108-95-2)		Ortho-xylene (CAS 00095-47-6)		Diphenylamine (CAS 00122-39-4)	
EP ID	MAX ANNUAL (lbs/yr)	HOURLY (lbs/hr)	MAX ANNUAL (lbs/yr)	HOURLY (lbs/hr)	MAX ANNUAL (lbs/yr)	HOURLY (lbs/hr)	MAX ANNUAL (lbs/yr)	HOURLY (lbs/hr)	MAX ANNUAL (lbs/yr)	HOURLY (lbs/hr)
FUG	4.38E+00	5.00E-04	1.93E+01	2.20E-03	1.75E+00	2.00E-04	7.08E+01	8.08E-03	0.00E+00	0.00E+00
000N2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
000N3	9.39E+01	1.07E-02	4.78E+01	1.02E-02	2.00E+01	2.28E-03	2.04E+03	2.33E-01	5.62E+01	6.41E-03
000N4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.72E+00	3.10E-04
32009	4.38E-01	5.00E-05	1.75E-01	2.00E-05	3.50E-01	4.00E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32034	1.55E+02	1.77E-02	6.33E+00	5.32E-02	7.76E+01	8.86E-03	3.10E+01	3.54E-03	6.21E+01	7.09E-03
3393A	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0C2E0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.38E+03	5.00E-01	0.00E+00	0.00E+00
F0101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E+04	1.62E+00	0.00E+00	0.00E+00
F0103	3.50E-01	4.00E-05	1.75E-01	2.00E-05	1.75E-01	2.00E-05	1.05E+01	1.20E-03	0.00E+00	0.00E+00
F0104	3.50E-01	4.00E-05	1.75E-01	2.00E-05	1.75E-01	2.00E-05	1.05E+01	1.20E-03	0.00E+00	0.00E+00
F0106	1.33E-01	6.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0107	3.50E-01	4.00E-05	1.75E-01	2.00E-05	1.75E-01	2.00E-05	1.05E+01	1.20E-03	0.00E+00	0.00E+00
F0108	0.00E+00	0.00E+00	1.06E+00	2.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0109	1.33E-01	6.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0110	0.00E+00	0.00E+00	1.06E+00	2.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0112	0.00E+00	0.00E+00	7.29E-01	1.95E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F1862	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.84E+03	2.10E-01	0.00E+00	0.00E+00

Table A-1: Summary of Emission Rates used in Modeling Analysis *(cont'd)*

	Hydrogen Chloride (CAS 07647-01-0)		Hydroquinone (CAS 00123-31-9)		Nailax (68953-84-4)	
EP ID	MAX ANNUAL (lbs/yr)	HOURLY (lbs/hr)	MAX ANNUAL (lbs/yr)	HOURLY (lbs/hr)	MAX ANNUAL (lbs/yr)	HOURLY (lbs/hr)
FUG	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
000N2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
000N3	1.51E+03	1.72E-01	4.56E-02	5.20E-06	0.00E+00	0.00E+00
000N4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.13E+01	5.86E-03
32009	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32034	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E+03	1.49E-01
3393A	0.00E+00	0.00E+00	4.50E+01	5.14E-03	0.00E+00	0.00E+00
0C2E0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F0110	0.00E+00	0.00E+00	0.00E+00	2.84E-03	0.00E+00	0.00E+00
F0112	0.00E+00	0.00E+00	0.00E+00	1.95E-03	0.00E+00	0.00E+00
F1862	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table A-2: Summary of Structures Included in Downwash Analysis

Building ID	Tier Number	Tier Height (m)	Maximum X-Length (m)	Maximum Y-Length (m)	Diameter (m)
BLD_5	1	3	10	7.6	--
BLD_6	1	3	8	9.1	--
BLD_7	1	3	8.2	5.5	--
BLD_8	1	3	7.5	11.7	--
BLD_9	1	3	19	10.7	--
BLD_10	1	3	5.5	3.7	--
BLD_11	1	3	7.7	9.5	--
BLD_12	1	6	55.5	61.5	--
BLD_13	1	3	12.2	6.6	--
BLD_14	1	3	5.9	26	--
BLD_15	1	3	9.4	9.4	--
BLD_16	1	3	5.9	3.6	--
BLD_17	1	3	23	15.3	--
BLD_18	1	6	103	103	--
BLD_19	1	3	6.3	6.3	--
BLD_20	1	3	11.2	32.2	--
	2	6	7.2	15.8	--
BLD_21	1	3	15.6	12.3	--
BLD_22	1	3	8.4	8	--
BLD_23	1	3	12	15.8	--
BLD_24	1	3	6.1	3.2	--
BLD_25	1	3	5.3	4.3	--
BLD_26	1	6	67.4	25.6	--
BLD_27	1	3	8	12.7	--
BLD_28	1	3	3	3.7	--
BLD_29	1	3	12.5	21.8	--
	2	6	10	8	--
BLD_30	1	3	5	6.6	--

Building ID	Tier Number	Tier Height (m)	Maximum X-Length (m)	Maximum Y-Length (m)	Diameter (m)
BLD_31	1	8.84	--	--	12.44
BLD_32	1	3	5.9	5.5	--
	2	11.02	5	5.6	--
	3	14.02	12.3	9.1	--
	4	14.02	47.4	27.8	--
	5	17.02	12	7.5	--
	6	17.02	7.3	3.6	--
	7	17.02	3	4.4	--
	8	17.02	11.7	8.4	--
	9	18.52	6.3	5.1	--
BLD_33	1	10.36	19	37.3	--
BLD 34	1	8.84	--	--	2.94
BLD_C2	1	10.67	21.8	17.4	--
TFS	1	8.23	21	26	--

APPENDIX B ANALYSIS OF PROCESSES POTENTIALLY SUBJECT TO PART 212

The Goodyear Tire & Rubber Company
DEC Permit ID No. 9-2911-00036/00151
Appendix B-1: Processes that are Potentially Subject to Part 212, Actual Emissions (lb/yr)

MAXIMUM ANNUAL EMISSION RATE OF AIR CONTAMINANTS THAT ARE SUBJECT TO MODELING (Lb/Yr)

KEY TO COLOR

Values in red reflect an emission rate that relies upon the use of emission control.

								COMPOUND	o-Toluidine	Aniline	Phenol	o-Xylene	Diphenylamine	Hydroquinone	HCl	Nailax
								(CAS NO.)	95-53-4	62-53-3	108-95-2	95-47-6	122-39-4	123-31-9	7647-01-0	68953-84-4
								PHYSICAL STATE	Liquid	Liquid	Solid	Liquid	Solid	Solid	Liquid	N/A
								VOC?	VOC	VOC	---	VOC	---	---	---	---
								HAP?	HAP	HAP	HAP	HAP	---	HAP	---	---
								HTAC?	HTAC	HTAC	---	---	---	---	---	---
								DAR-1 Toxicity Classification	High	High	Mod.	Mod.	Mod. (not rated)	Mod.	Mod.	Mod. (not rated)
Unit ID	Process ID	Process Description	Source ID	Source Description	Control ID	Control Description	Emission Point ID	MODEL?	YES (>MEL)	NO (<MEL)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)
Fugitives	-	-	-	-	-	-	-	-	19.24	4.41	1.77	70.78	0.00	0.00		0.00
U-000N3	DFL	A drum flaker is used to flake the antioxidant product. The remelt tank is used to rework the antioxidant. The centrifuge removes solids from the product. The current control type for this process is a whirlwet continuous dust collector (scrubber) made by Tri-Mer company. Water is used to scrub the air stream.	REMEL	Re-melt Tank	0S0N4	New Wet Scrubber	000N3	000N3	**211**	**244**	**11**	**4763**	**0.00**	**0.00**	**0.00**	**0.00**
				Drum Flaker												
			CENTR	Centrifuge												
	ETB	Elimination Tank No. 2 - serves various raw material, recycle, and reactor system vents	000D2	Elimination Tank No. 2	0S0N5	Regenerative Thermal Oxidizer										
U-32034	SFI	Sparkler filter operates only when the centrifuge is down. Emissions are generated when the filter is opened.	03034	Sparkler Filter			32034	32034	0.40	0.13	0.066	0.027	0.053	0.00	0.00	1.1
0-ANIST	AST	Air is displaced during unloading of aniline into the storage tanks. Emissions are controlled by activated carbon.	0F106	15,900 gallon storage tank with activated carbon unit and conservation vent.	0C106	Conservation Vent with Activated carbon	F0106	F0106	**0.00**	**0.27**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
			0F109	15,900 gallon storage tank with activated carbon unit and conservation vent.	0C106	Conservation Vent with Activated carbon	F0109	F0109								
0-RECYC	RS3	A mixture of o-xylene, aniline, o-toluidine, phenol, DPA, and mixed xylidines is stored in an atmospheric tank; the tank is filled and emptied as required to balance production.	0F103	10,800 gallon Recycle tank			F-1103	F-1103	0.20	0.31	0.14	11	0.00	0.00	0.00	0.00
			0F104	10,800 gallon Recycle tank			F-1104	F-1104								
			0F107	10,800 gallon Recycle tank			F0107	F0107								
0-TOLST	TOL	Air is displaced during unloading of OT into the storage tanks. Emissions are controlled by activated carbon.	F0108	15,928 gallon o-toluidine storage tank with conservation vent.	0V108	Conservation Vent	F0108	F0108	2.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			F0110	15,928 gallon o-toluidine storage tank with conservation vent.	0V110	Conservation Vent	F0110	F0110								
			F0112	15,321 o-toluidine storage tank with conservation vent.	0V112	Conservation Vent	F0112	F0112								
U-000D1	ETA	Elimination Tank No. 1 - serves the product holding tank vents and emissions from the pastille unit	000D1	Elimination Tank No. 1	0HXD1	Vapor recovery system	000D1	000D1	**46**	**70**	**11**	**817**	**0.071**	**0.036**	**644**	**0.00**
U-000N2	NPA	Product is solidified on a drum flaker or a metal belt. Dust is removed with the dust collector system	0F0N2	Antioxidant packaging	0F0N1	Dust collector/ fabric filter	000N2	000N2	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
U-000N4	BEL	Bucket elevator and vibrating conveyor moving flaked antioxidant		Dust Collector	0F0N4	Pulse Jet Fabric Filter/Dust Collector	000N4	000N4	**0.00**	**0.00**	**0.00**	**0.00**	**2.1**	**0.00**	**0.00**	**42.75**

The Goodyear Tire & Rubber Company
DEC Permit ID No. 9-2911-00036/00151
Appendix B-1: Processes that are Potentially Subject to Part 212, Actual Emissions (lb/yr)

MAXIMUM ANNUAL EMISSION RATE OF AIR CONTAMINANTS THAT ARE SUBJECT TO MODELING (Lb/Yr)

KEY TO COLOR

Values in red reflect an emission rate that relies upon the use of emission control.

								COMPOUND	o-Toluidine	Aniline	Phenol	o-Xylene	Diphenylamine	Hydroquinone	HCl	Nailax
								(CAS NO.)	95-53-4	62-53-3	108-95-2	95-47-6	122-39-4	123-31-9	7647-01-0	68953-84-4
								PHYSICAL STATE	Liquid	Liquid	Solid	Liquid	Solid	Solid	Liquid	N/A
								VOC?	VOC	VOC	---	VOC	---	---	---	---
								HAP?	HAP	HAP	HAP	HAP	---	HAP	---	---
								HTAC?	HTAC	HTAC	---	---	---	---	---	---
								DAR-1 Toxicity Classification	High	High	Mod.	Mod.	Mod. (not rated)	Mod.	Mod.	Mod. (not rated)
Unit ID	**Process ID**	**Process Description**	**Source ID**	**Source Description**	**Control ID**	**Control Description**	**Emission Point ID**	**MODEL?**	YES (>MEL)	NO (<MEL)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)
U-32009	NMR	Flush water is retained in the sump holding tank prior to discharge	03009	Sump Holding Tank			32009	32009	0.08	0.25	0.20	0.00	0.00	0.00	0.00	0.00
U-3393A	PTA	Hydroquinone is discharged from bulk bags through a chute into a tank, from two pumps during maintenance activities, and from a vacuum cleaning system for residual hq.	03393	HQ Discharge	0F393	Fabric Filter	3393A	3393A	0.00	0.00	0.00	0.00	0.00	20	0.00	0.00
U-F0101	OXS	o-xylene is unloaded from a tank truck into an uninsulated atmospheric storage vessel; air is displaced during the unloading operation.	F1101	10,400 uninsulated atmospheric storage tank			F0101	F0101	0.00	0.00	0.00	7.8	0.00	0.00	0.00	0.00
W-STWTR	TAN	Solvents are used to extract organics from a storage tank	01862	Solvent Extraction/Distillation Equipment	0HSX1	Tube and shell condenser	F1862	F1862	0.00	0.00	0.00	5964	0.00	0.00	0.00	0.00
			T3103	Xylene Tank 3103 (Solvent Tank)												
			T3104	Xylene Tank 3104 (Surge Tank)												
			1862A	Recovery Tank 3107 (Waste Water Tank)	0HSX2	Tube and shell condenser-tank vent										
			T3113	Decant Tank 3113												
	AIR	o-xylene removal by 8-inch diamater, 20-foot long packed air stripper	0C2E0	Air Stripper	0CAE0	Calgon carbon cannister	0C2E0	0C2E0								
								TOTAL PART 212-REGULATED EMISSIONS	279	319	24	11634	2.26	20	644	44
								HTACs: TABLE 2 MASS EMISSION LIMIT (lb/yr)	100	1000	---	---	---	---	---	---
								NON-HTACs: MODELING THRESHOLD (lb/yr)	---	---	100	100	100	100	100	100
								MODELING REQUIRED? #	YES (>MEL)	NO (<MEL)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)

MAXIMUM HOURLY EMISSION RATE OF AIR CONTAMINANTS THAT ARE SUBJECT TO MODELING (Lb/Hr with controls)

KEY TO COLOR CODING:

Values in red reflect an emission rate that relies upon the use of emission control.

Unit ID	Process ID	Process Description	Source ID	Source Description	Control ID	Control Description	Emission Point ID	COMPOUND	o-Toluidine	Aniline	Phenol	o-Xylene	Diphenylamine	Hydroquinone	HCl	Nailax
								(CAS NO.)	95-53-4	62-53-3	108-95-2	95-47-6	122-39-4	123-31-9	7647-01-0	68953-84-4
								PHYSICAL STATE	Liquid	Liquid	Solid	Liquid	Solid	Solid	Liquid	N/A
								VOC?	VOC	VOC	---	VOC	---	---	---	---
								HAP?	HAP	HAP	HAP	HAP	---	HAP	---	---
								HTAC?	HTAC	HTAC	---	---	---	---	---	---
								DAR-1 Toxicity Classification	High	High	Mod.	Mod.	Mod. (not rated)	Mod.	Mod.	Mod. (not rated)
								MODEL?	YES (>MEL)	NO (<MEL)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)
Fugitives	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-000N3	DFL	A drum flaker is used to flake the antioxidant product. The remelt tank is used to rework the antioxidant. The centrifuge removes solids from the product. The current control type for this process is a whirlwet continuous dust collector (scrubber) made by Tri-Mer company. Water is used to scrub the air stream.	REMEL	Re-melt Tank	0S0N4	New Wet Scrubber	000N3	000N3	0.01	0.01	0.00	0.10	0.01	0.00	0.00	0.00
				Drum Flaker												
			CENTR	Centrifuge												
	ETB	Elimination Tank No. 2 - serves various raw material, recycle, and reactor system vents	000D2	Elimination Tank No. 2	0S0N5	Regenerative Thermal Oxidizer										
U-32034	SFI	Sparkler filter operates only when the centrifuge is down. Emissions are generated when the filter is opened.	03034	Sparkler Filter			32034	32034	0.05	0.02	0.01	0.00	0.01	0.00	0.00	0.15
0-ANIST	AST	Air is displaced during unloading of aniline into the storage tanks. Emissions are controlled by activated carbon.	0F106	15,900 gallon storage tank with activated carbon unit and conservation vent.	0C106	Conservation Vent with Activated carbon	F0106	F0106	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
			0F109	15,900 gallon storage tank with activated carbon unit and conservation vent.	0C106	Conservation Vent with Activated carbon	F0109	F0109								
0-RECYC	RS3	A mixture of o-xylene, aniline, o-toluidine, phenol, DPA, and mixed xylidines is stored in an atmospheric tank; the tank is filled and emptied as required to balance production.	0F103	10,800 gallon Recycle tank			F-1103	F-1103	2.24E-05	3.52E-05	1.56E-05	1.20E-03	0.00E+00	1.49E-09	0.00E+00	0.00E+00
			0F104	10,800 gallon Recycle tank			F-1104	F-1104								
			0F107	10,800 gallon Recycle tank			F0107	F0107								
0-TOLST	TOL	Air is displaced during unloading of OT into the storage tanks. Emissions are controlled by activated carbon.	F0108	15,928 gallon o-toluidine storage tank with conservation vent.	0V108	Conservation Vent	F0108	F0108	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			F0110	15,928 gallon o-toluidine storage tank with conservation vent.	0V110	Conservation Vent	F0110	F0110								
			F0112	15,321 o-toluidine storage tank with conservation vent.	0V112	Conservation Vent	F0112	F0112								
U-000D1	ETA	Elimination Tank No. 1 - serves the product holding tank vents and emissions from the pastille unit	000D1	Elimination Tank No. 1	0HXD1	Vapor recovery system	000D1	000D1	0.03	0.05	0.02	1.30	0.00	0.00	1.72	0.00
U-000N2	NPA	Product is solidified on a drum flaker or a metal belt. Dust is removed with the dust collector system	0F0N2	Antioxidant packaging	0F0N1	Dust collector/ fabric filter	000N2	000N2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U-000N4	BEL	Bucket elevator and vibrating conveyor moving flaked antioxidant		Dust Collector	0F0N4	Pulse Jet Fabric Filter/Dust Collector	000N4	000N4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U-32009	NMR	Flush water is retained in the sump holding tank prior to discharge	03009	Sump Holding Tank			32009	32009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U-3393A	PTA	Hydroquinone is discharged from bulk bags through a chute into a tank, from two pumps during maintenance activities, and from a vacuum cleaning system for residual hq.	03393	HQ Discharge	0F393	Fabric Filter	3393A	3393A	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00

MAXIMUM HOURLY EMISSION RATE OF AIR CONTAMINANTS THAT ARE SUBJECT TO MODELING (Lb/Hr with controls)

KEY TO COLOR CODING:

Values in red reflect an emission rate that relies upon the use of emission control.

Unit ID	Process ID	Process Description	Source ID	Source Description	Control ID	Control Description	Emission Point ID	COMPOUND	o-Toluidine	Aniline	Phenol	o-Xylene	Diphenylamine	Hydroquinone	HCl	Nailax
								(CAS NO.)	95-53-4	62-53-3	108-95-2	95-47-6	122-39-4	123-31-9	7647-01-0	68953-84-4
								PHYSICAL STATE	Liquid	Liquid	Solid	Liquid	Solid	Solid	Liquid	N/A
								VOC?	VOC	VOC	---	VOC	---	---	---	---
								HAP?	HAP	HAP	HAP	HAP	---	HAP	---	---
								HTAC?	HTAC	HTAC	---	---	---	---	---	---
								DAR-1 Toxicity Classification	High	High	Mod.	Mod.	Mod. (not rated)	Mod.	Mod.	Mod. (not rated)
								MODEL?	YES (>MEL)	NO (<MEL)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)
U-F0101	OXS	o-xylene is unloaded from a tank truck into an uninsulated atmospheric storage vessel; air is displaced during the unloading operation.	F1101	10,400 uninsulated atmospheric storage tank			F0101	F0101	0.00	0.00	0.00	1.62	0.00	0.00	0.00	0.00
W-STWTR	TAN	Solvents are used to extract organics from a storage tank	01862	Solvent Extraction/Distillation Equipment	0HSX1	Tube and shell condenser	F1862	F1862	0.00E+00	0.00E+00	0.00E+00	0.50	0.00E+00	0.00E+00	0.00E+00	0.00E+00
			T3103	Xylene Tank 3103 (Solvent Tank)												
			T3104	Xylene Tank 3104 (Surge Tank)												
			1862A	Recovery Tank 3107 (Waste Water Tank)	0HSX2	Tube and shell condenser-tank vent										
			T3113	Decant Tank 3113												
	AIR	o-xylene removal by 8-inch diamater, 20-foot long packed air stripper	0C2EO	Air Stripper	0CAEO	Calgon carbon cannister	0C2E0	0C2E0								

The Goodyear Tire & Rubber Company
DEC Permit ID No. 9-2911-00036/00151
Appendix B-3: Processes that are Potentially Subject to Part 212, ERP (lb/hr)

ERP OF AIR CONTAMINANTS THAT ARE SUBJECT TO MODELING (Lb/Hr)

KEY TO COLOR

Values in red reflect an emission rate that relies upon the use of emission control.

								COMPOUND	o-Toluidine	Aniline	Phenol	o-Xylene	Diphenylamine	Hydroquinone	HCl	Nailax
								(CAS NO.)	95-53-4	62-53-3	108-95-2	95-47-6	122-39-4	123-31-9	7647-01-0	68953-84-4
								PHYSICAL STATE	Liquid	Liquid	Solid	Liquid	Solid	Solid	Liquid	N/A
								VOC?	VOC	VOC	---	VOC	---	---	---	---
								HAP?	HAP	HAP	HAP	HAP	---	HAP	---	---
								HTAC?	HTAC	HTAC	---	---	---	---	---	---
								DAR-1 Toxicity Classification	High	High	Mod.	Mod.	Mod. (not rated)	Mod.	Mod.	Mod. (not rated)
Unit ID	Process ID	Process Description	Source ID	Source Description	Control ID	Control Description	Emission Point ID	MODEL?	YES (>MEL)	NO (<MEL)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)	NO (< 100 lb/yr)	YES (>100 lb/yr)	NO (< 100 lb/yr)
Fugitives	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-000N3	DFL	A drum flaker is used to flake the antioxidant product. The remelt tank is used to rework the antioxidant. The centrifuge removes solids from the product. The current control type for this process is a whirlwet continuous dust collector (scrubber) made by Tri-Mer company. Water is used to scrub the air stream.	REMEL	Re-melt Tank	0S0N4	New Wet Scrubber	000N3	000N3	0.07	0.06	0.00	1.03	0.06	0.00	0.00	0.00
				Drum Flaker												
			CENTR	Centrifuge												
	ETB	Elimination Tank No. 2 - serves various raw material, recycle, and reactor system vents	000D2	Elimination Tank No. 2	0S0N5	Regenerative Thermal Oxidizer										
U-32034	SFI	Sparkler filter operates only when the centrifuge is down. Emissions are generated when the filter is opened.	03034	Sparkler Filter			32034	32034	0.05	0.02	0.01	0.00	0.01	0.00	0.00	0.15
0-ANIST	AST	Air is displaced during unloading of aniline into the storage tanks. Emissions are controlled by activated carbon.	0F106	15,900 gallon storage tank with activated carbon unit and conservation vent.	0C106	Conservation Vent with Activated carbon	F0106	F0106	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
			0F109	15,900 gallon storage tank with activated carbon unit and conservation vent.	0C106	Conservation Vent with Activated carbon	F0109	F0109								
0-RECYC	RS3	A mixture of o-xylene, aniline, o-toluidine, phenol, DPA, and mixed xylidines is stored in an atmospheric tank; the tank is filled and emptied as required to balance production.	0F103	10,800 gallon Recycle tank			F-1103	F-1103	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0F104	10,800 gallon Recycle tank			F-1104	F-1104								
			0F107	10,800 gallon Recycle tank			F0107	F0107								
0-TOLST	TOL	Air is displaced during unloading of OT into the storage tanks. Emissions are controlled by activated carbon.	F0108	15,928 gallon o-toluidine storage tank with conservation vent.	0V108	Conservation Vent	F0108	F0108	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			F0110	15,928 gallon o-toluidine storage tank with conservation vent.	0V110	Conservation Vent	F0110	F0110								
			F0112	15,321 o-toluidine storage tank with conservation vent.	0V112	Conservation Vent	F0112	F0112								
U-000D1	ETA	Elimination Tank No. 1 - serves the product holding tank vents and emissions from the pastille unit	000D1	Elimination Tank No. 1	0HXD1	Vapor recovery system	000D1	000D1	0.03	0.05	0.02	1.30	0.00	0.00	1.72	0.00
U-000N2	NPA	Product is solidified on a drum flaker or a metal belt. Dust is removed with the dust collector system	0F0N2	Antioxidant packaging	0F0N1	Dust collector/fabric filter	000N2	000N2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U-000N4	BEL	Bucket elevator and vibrating conveyor moving flaked antioxidant		Dust Collector	0F0N4	Pulse Jet Fabric Filter/Dust Collector	000N4	000N4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U-32009	NMR	Flush water is retained in the sump holding tank prior to discharge	03009	Sump Holding Tank			32009	32009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U-3393A	PTA	Hydroquinone is discharged from bulk bags through a chute into a tank, from two pumps during maintenance activities, and from a vacuum cleaning system for residual hq.	03393	HQ Discharge	0F393	Fabric Filter	3393A	3393A	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00

The Goodyear Tire & Rubber Company
DEC Permit ID No. 9-2911-00036/00151
Appendix B-3: Processes that are Potentially Subject to Part 212, ERP (lb/hr)

ERP OF AIR CONTAMINANTS THAT ARE SUBJECT TO MODELING (Lb/Hr)

KEY TO COLOR								**COMPOUND**	**o-Toluidine**	**Aniline**	**Phenol**	**o-Xylene**	**Diphenylamine**	**Hydroquinone**	**HCl**	**Nailax**
								(CAS NO.)	95-53-4	62-53-3	108-95-2	95-47-6	122-39-4	123-31-9	7647-01-0	68953-84-4
	Values in red reflect an emission rate that relies upon the use of emission control.							**PHYSICAL STATE**	Liquid	Liquid	Solid	Liquid	Solid	Solid	Liquid	N/A
								VOC?	VOC	VOC	---	VOC	---	---	---	---
								HAP?	HAP	HAP	HAP	HAP	---	HAP	---	---
								HTAC?	HTAC	HTAC	---	---	---	---	---	---
								DAR-1 Toxicity Classification	High	High	Mod.	Mod.	Mod. (not rated)	Mod.	Mod.	Mod. (not rated)
U-F0101	OXS	o-xylene is unloaded from a tank truck into an uninsulated atmospheric storage vessel; air is displaced during the unloading operation.	F1101	10,400 uninsulated atmospheric storage tank			F0101	F0101	0.00	0.00	0.00	1.62	0.00	0.00	0.00	0.00
W-STWTR	TAN	Solvents are used to extract organics from a storage tank	01862	Solvent Extraction/Distillation Equipment	0HSX1	Tube and shell condenser	F1862	F1862	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.00
			T3103	Xylene Tank 3103 (Solvent Tank)												
			T3104	Xylene Tank 3104 (Surge Tank)												
			1862A	Recovery Tank 3107 (Waste Water Tank)	0HSX2	Tube and shell condenser-tank vent										
			T3113	Decant Tank 3113												
	AIR	o-xylene removal by 8-inch diamater, 20-foot long packed air stripper	0C2EO	Air Stripper	0CAEO	Calgon carbon cannister	0C2E0	0C2E0								

APPENDIX C GOODYEAR RESPONSES TO DEC COMMENTS AUGUST 2025 RFAI ON THE AERMOD PROTOCOL AND PART 212 ANALYSIS – UPDATED, JUNE 11, 2026

DEC Comment	Goodyear Response
<u>AERMOD Air Dispersion Modeling Protocol & Part 212 Analysis</u>	
DEC Comment 1. With the revised permit application package, please submit a revised AERMOD air dispersion modeling protocol & Part 212 analysis (protocol). Within the revised protocol, please add a section that includes the point-by-point responses to the comments on the protocol provided by NYSDEC. This section shall include the responses provided as "Comments on the Air Quality Modeling Protocol, dated August 1, 2025" with the September 15, 2025 Air State Facility application and the responses to the comments provided in this letter.	Goodyear Response: In its September 15, 2025 Air State Facility application, Goodyear included a revised AERMOD Air Dispersion Modeling Protocol & Par 212 Analysis (the "Protocol") that incorporated the Department's comments on the Protocol in its August 1, 2025 correspondence. Attachment A to this response letter is a revised Protocol that includes those revisions in the text of the updated Protocol (and as a Summary of the responses as Appendix B); and the revisions to the Protocol requested in the Department's February 27, 2026 RFAI letter.

DEC Comment	Goodyear Response
DEC Comment 2. Please add a section to the revised modeling protocol that discusses the cumulative inhalation cancer risk of aniline and o-toluidine. Aniline and o-toluidine are cancer-causing chemicals that have similar physical and chemical properties. Consequently, in the modeling report, please provide an estimation of the cumulative inhalation cancer risk of aniline and o-toluidine by doing the following: i. Model aniline and o-toluidine individually. ii. Estimate the inhalation cancer risk of aniline ($Risk_A$) and o-toluidine ($Risk_{O\text{-}T}$) using the following equations: $Risk_A$ (unitless) = C_A (µg/m^3) ÷ AGC_A (µg/m^3) $Risk_{O\text{-}T}$ (unitless) = $C_{O\text{-}T}$ (µg/m^3) ÷ $AGC_{O\text{-}T}$ (µg/m^3), where C_A and $C_{O\text{-}T}$ are the annual maximum modeled concentrations of aniline and o-toluidine, respectively, and AGC_A and $AGC_{O\text{-}T}$ are the annual guideline concentrations of aniline and o-toluidine, respectively. iii. Estimate the cumulative inhalation cancer risk ($Risk_T$) of aniline and o-toluidine using the following equation: $Risk_T = Risk_A + Risk_{O\text{-}T}$ If $Risk_T$ is less than a one-in-a-million inhalation cancer risk (i.e., 1×10^{-6}), no further action is needed. If $Risk_T$ is greater than 1×10^{-6}, Goodyear shall: i. Demonstrate the degree of air cleaning requirements specified in 6 NYCRR Part 212 are being met for both contaminants, or ii. Successfully demonstrate the use of Toxics Best Available Control Technology (T-BACT) for emission sources of aniline and o-toluidine. For the above scenarios, $Risk_T$ is allowed to be a 10-in-a-million inhalation cancer risk (i.e., 1×10^{-5}).	Goodyear Response: The AERMOD Protocol & Part 212 Analysis has been updated to include a section/discussion that addresses the Department's request to conduct a cumulative inhalation cancer risk of aniline and o-toluidine following the methodology provided in the February 27, 2026 RFAI letter. Please note that while emission estimates for Aniline exceed its annual maximum emission limit (MELs) and is therefore not subject to modeling, Goodyear has opted to include Aniline along with ortho-toluidine in the modeling analysis to demonstrate that the facility-wide emissions of both of these HTACs are model-predicted to not cause offsite impacts above their AGCs.

<table>
<tr><th>DEC Comment</th><th>Goodyear Response</th></tr>
<tr><td>DEC Comment 3. Table 4-1 and Table 4-2: Please include the calculated numerical values for the maximum actual emissions for each contaminant.</td><td>Goodyear Response: Tables 4-1 and 4-2 of the updated AERMOD Protocol (Attachment A) have been revised to include the maximum actual emissions for each air contaminant.</td></tr>
<tr><td>DEC Comment 4. Table 4-2: CAS# 122-39-4 has no toxicity classification assigned to it. Therefore, please change its toxicity class to “None”. Chemicals with a moderate toxicity classification or no toxicity classification are given an environmental rating of B. CAS# 68953-84-4 is not listed in DAR-1. All chemicals emitted by process operations and not listed in DAR-1 need to be reviewed by the Air Toxics Section (ATS). The results of the ATS’s review of CAS# 68953-84-4 are provided in comment 6.</td><td>Goodyear Response: Table 4-2 has been updated to reflect the “None” toxicity classification for CAS# 122-39-4, the toxicity classification for CAS# 68953-84-4 has been assigned a “Moderate” classification and a “B” environmental rating; and the AGC and SGC for this air contaminant that was assigned by the DEC’s Air Toxics Section (ATS) has also been incorporated into Table 4-2.</td></tr>
<tr><td>DEC Comment 5. Table 4-2: The EPA TANKS input data provided to NYSDEC on December 23, 2025 included cresol (o) (2-methyl-phenol) and mixed xylidines. These contaminants are not included in the AERMOD protocol. If cresol (o) (2-methyl-phenol) or mixed xylidines are being emitted by process operations, please include these contaminants in the Part 212 analysis/ AERMOD protocol and list them in Table 4-2.</td><td>Goodyear Response: The use of cresol (o)(2-methyl-phenol) and mixed xylidines has been eliminated from manufacturing of products at the Facility that included these constituents. As such, there is no need to include these constituents in the Facility’s air emissions inventory or in the revised AERMOD Protocol & Part 212 Analysis.</td></tr>
<tr><td>DEC Comment 6. Table 5-1: Nailax's CAS number is 68953-84-4, and it is not listed in DAR-1. As stated in comment 4, all chemicals emitted by process operations and not listed in DAR-1 need to be reviewed by the ATS. The results of the ATS’s review are below.
<table>
<tr><th>Chemical Name</th><th>CAS #</th><th>AGC ($\mu g/m^3$)</th><th>SGC ($\mu g/m^3$)</th><th>Toxicity Classification</th><th>MEL (lbs/yr)</th><th>Env. Rating</th></tr>
<tr><td>Nailax</td><td>68953-84-4</td><td>4.0</td><td>2,400</td><td>MODERATE</td><td>100</td><td>B</td></tr>
</table>
Appendix D-1 of the protocol shows that the facility-wide actual annual emission rate for Nailax is 44 lbs/yr, which is less than its MEL of 100 lbs/yr. Therefore, modeling is not required for this chemical. Please include the results of the ATS’s review in Section 5.1 in the revised protocol.</td><td>Goodyear Response: Table 5-1 has been updated to include the CAS number for Nailax and the results of ATS’s review and assignment of an AGC and SGC have been incorporated into Tables 4-1 and 4-2 and Section 5.1 of the revised AERMOD Protocol & Part 212 Analysis (Attachment A)</td></tr>
</table>

DEC Comment	Goodyear Response
DEC Comment 7. Figure 5.3: Please add the recycling tanks description following Figure 5.3: Unreacted raw material from the product manufacturing process is recovered and recycled back into the manufacturing process. The recycle material composition varies based on the variability of recovered and recycled unreacted raw materials from the batch manufacturing process, but recent recycled raw material composition testing conducted at the Facility provides the average weight percentages of the following raw materials: • 33.09% O-Xylene • 13.28% Aniline • 13.12% Phenol • 22.49% O-Toluidine • 0.61% Hydroquinone • 2.93% Nailax • 1.88% Water	Goodyear Response: The description of the recycling tanks and the listing of the average weight percentages of raw materials has been added to the text following Figure 5.3 of the revised AERMOD Protocol (Attachment A).

ERM HAS OVER 140 OFFICES ACROSS THE FOLLOWING COUNTRIES AND TERRITORIES WORLDWIDE

Argentina
Australia
Belgium
Brazil
Canada
China
Colombia
Denmark
France
Germany
Hong Kong
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
Netherlands
New Zealand
Panama
Peru
Poland
Portugal
Romania
Singapore
South Africa
South Korea
Spain
Switzerland
Taiwan
Thailand
UAE
UK
US
Vietnam

ERM's Rochester, NY Office
345 Woodcliff Drive
2nd Floor
Fairport, New York 14450

F +1 585 387 0510

www.erm.com