



Project Open House
Wednesday, July 23, 2025, 4-6pm
Goldboro Interpretive Centre

Feedback Form

Thank you for attending today's open house – we hope you found it useful. Please take the time to provide feedback. Input will be compiled and summarized for consideration by the project team.

Feedback forms may be:

Dropped: in the box provided or handed to one of our staff at today's event

Mailed: Nova Sustainable Fuels ATTN: Megan Harris
1701 Hollis Street, Suite 800
Halifax, NS B3J 3M8

Emailed: info@novasustainablefuels.com

Why did you come to today's event?

INTERESTED IN PROJECT

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐

Yes

☒

No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐

I would consider myself a neighbour

☐

Within 5 kilometres

☐

Within 1 kilometre

☒

Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☐ All major milestones
☒ Regularly, regardless of project status ☐ Other (please specify): _____

Please indicate your level of agreement with each of the following statements:

The information presented today helped me gain an understanding of the project.

- ☒ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

The information was presented in a format that was easy to understand.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

Staff were able to adequately answer my questions.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

How did you hear about today's event?

- ☐ Postcard in mailbox ☒ Word of mouth ☐ Newspaper ☐ Radio
☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

Anything

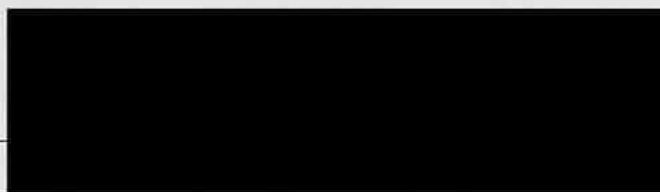
Join Our Community Liaison Committee - OPTIONAL SECTION

We're creating a Community Liaison Committee (CLC) to bring local voices into the conversation. As a member, you'll help share community perspectives and ensure diverse experiences are reflected in the project.

Interested? Please share your name and contact information below. We'll follow up with a quick note about your background and interest.

Thank you for helping shape a better project.

Contact info (name, email and/or phone):



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Why did you come to today's event?

To find out more about the company & the plans for operations in the area.

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Guyston County survives on its small business in all sectors especially the fishing industry. More industry is needed to keep our skilled workers in the area.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☒ Yes

☐ No

If yes, how do you use it, when, and at what frequency?

Walk the beach area

How far away do you live from the project?

☐ I would consider myself a neighbour

☐ Within 1 kilometre

☐ Within 5 kilometres

☒ Over 5 kilometres

How often would you like to hear about the project?

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☐ Other (please specify): Through Facebook ad on Guysborough site

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

The impact on jobs, what workforce will be required
when in operation. Impact on area.

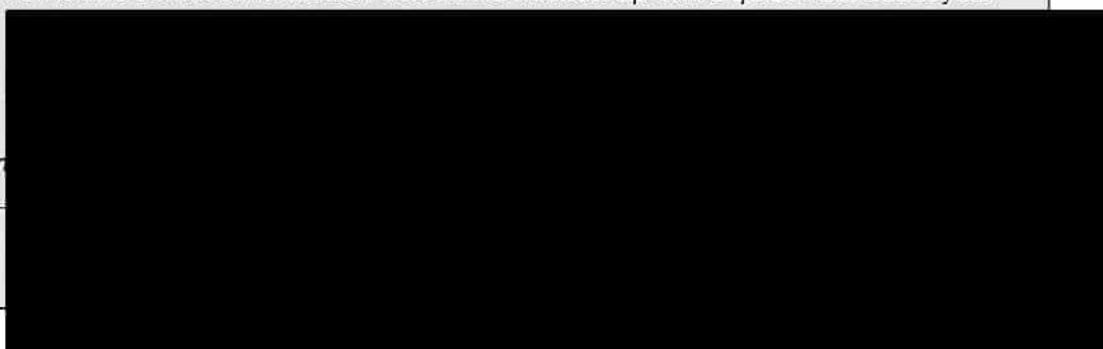
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Thank you for helping shape a

Contact info (name, email and



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Why did you come to today's event?

TO LEARN MORE ABOUT THE PROJECT

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

I AM NEW TO THE AREA

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes ☒ No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☒ I would consider myself a neighbour

☐ Within 1 kilometre

☐ Within 5 kilometres

☐ Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☒ All major milestones
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Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

HOPE THE PROJECT CAN BE DONE
A LOT SOONER THAN PLANNED.

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Why did you come to today's event?

information on Lobster fishing

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Lobster fishing

Do you use Bettys Cove and/or Dung Cove for marine activities?

☒ Yes

☐ No

If yes, how do you use it, when, and at what frequency?

Fishing

How far away do you live from the project?

☐ I would consider myself a neighbour

☐ Within 1 kilometre

☒ Within 5 kilometres

☐ Over 5 kilometres

How often would you like to hear about the project?

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Would you be interested in attending future events about the project?

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Effects on Lobster fishing

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Why did you come to today's event?

Suggested by family member. Some personal interest.

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

No key info... however, so long as environmental impact is minimal and some employment is created, I am in agreement.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes

☒ No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐ I would consider myself a neighbour

☐ Within 1 kilometre

☐ Within 5 kilometres

☒ Over 5 kilometres

How often would you like to hear about the project?

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☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

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Any info. stating positive local impacts, short and long-term.

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Why did you come to today's event?

VERY INTERESTED IN THIS AMAZING
UNDERTAKING

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

I'M SURE YOU KNOW IT ALL.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐

Yes

☒

No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐

I would consider myself a neighbour

☐

Within 1 kilometre

☐

Within 5 kilometres

☒

Over 5 kilometres

How often would you like to hear about the project?

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☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

A REGIONAL BOARD OF INTERESTED PEOPLE.
AS BELOW

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Why did you come to today's event?

To learn more about the project

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Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes

☒ No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐ I would consider myself a neighbour

☐ Within 1 kilometre

☐ Within 5 kilometres

☒ Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☐ All major milestones
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Staff were able to adequately answer my questions.

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☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

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Why did you come to today's event?

local project i live 14 miles away

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

good trout Fishing in local lakes

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐

Yes

☒

No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☒

I would consider myself a neighbour

☐

Within 1 kilometre

☐

Within 5 kilometres

☒

Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☒ All major milestones
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☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

would like to see local people employed
for construction + permanent jobs.

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for information

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

nothing pertinent except some trout fishing and deer hunting in that area.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐

Yes

☒

No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐

I would consider myself a neighbour

☐

Within 5 kilometres

☒

Within 1 kilometre

☐

Over 5 kilometres

across the Harbour
directly on ITH Point

How often would you like to hear about the project?

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- ☐ Postcard in mailbox ☐ Word of mouth ☐ Newspaper ☐ Radio
☐ Other (please specify): email

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

I would like regular updates on anything
new or ongoing on project

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Why did you come to today's event?

To learn more about the progress on this project

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes ☒ No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐ I would consider myself a neighbour

☐ Within 1 kilometre

☐ Within 5 kilometres

☒ Over 5 kilometres

How often would you like to hear about the project?

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- ☐ Postcard in mailbox ☐ Word of mouth ☐ Newspaper ☐ Radio
☒ Other (please specify): Press release / Social Media

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

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Why did you come to today's event?

To learn about this project. To explain the needs of the community, which I will email to you.

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

~~Bed~~ Meadow Lake is a ^{Atlantic} salmon fishery that is rebounding, please don't take water from that lake. Create a park on the property with a sand beach at the end of the harbour on dung Cove.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☒ Yes

☐ No

Scallop Diving
Seatrout Fishing

If yes, how do you use it, when, and at what frequency?

There is also a good spring at that cove. You should put your wharf in the next cove over.

How far away do you live from the project?

☐ I would consider myself a neighbour

☒ Within 1 kilometre

☒ Within 5 kilometres

☐ Over 5 kilometres

How often would you like to hear about the project?

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☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

How the project is going to help
the community that has been overlooked
for 5 decades. +

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Interested? Please share your name and contact information below. We'll follow up with a quick note about your background and interest.

Thank you for helping shape a better project.

Contact

I have a lot of input for you!

How often would you like to hear about the project?

- ☐ Only when it impacts me ☐ All major milestones
☒ Regularly, regardless of project status ☐ Other (please specify): _____

Please indicate your level of agreement with each of the following statements:

The information presented today helped me gain an understanding of the project.

- ☒ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

The information was presented in a format that was easy to understand.

- ☒ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

Staff were able to adequately answer my questions.

- ☒ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

How did you hear about today's event?

- ☐ Postcard in mailbox ☐ Word of mouth ☐ Newspaper ☒ Radio
☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

ECONOMIC IMPACT on the area.

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Thank you for helping shape a better project.

C

Feedback Form

Thank you for attending today's open house – we hope you found it useful. Please take the time to provide feedback. Input will be compiled and summarized for consideration by the project team.

Feedback forms may be:

Dropped: in the box provided or handed to one of our staff at today's event

Mailed: Nova Sustainable Fuels ATTN: Megan Harris
1701 Hollis Street, Suite 800
Halifax, NS B3J 3M8

Emailed: info@novasustainablefuels.com

Why did you come to today's event?

Interested in new exciting economic promises for
the area.

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

lobster fishing B1B, wheelchair trails between Gungaholm
& Isaac's Harbour

Do you use Bettys Cove and/or Dung Cove for marine activities?

☒ Yes

☐ No

If yes, how do you use it, when, and at what frequency?

lobster fishing from April 19 to June 30th yearly.

How far away do you live from the project?

☐ I would consider myself a neighbour

☒ Within 1 kilometre

☐ Within 5 kilometres

☐ Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☒ All major milestones
☐ Regularly, regardless of project status ☐ Other (please specify): _____

Please indicate your level of agreement with each of the following statements:

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- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

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Staff were able to adequately answer my questions.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

How did you hear about today's event?

- ☐ Postcard in mailbox ☐ Word of mouth ☒ Newspaper ☒ Radio
☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

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Emailed: info@novasustainablefuels.com

Why did you come to today's event?

Information

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Hunting & Fishing

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes

☒ No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐ I would consider myself a neighbour

☐ Within 1 kilometre

☐ Within 5 kilometres

☒ Over 5 kilometres

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As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes ☐ No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐ I would consider myself a neighbour	☐ Within 1 kilometre
☐ Within 5 kilometres	☐ Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☐ All major milestones
☐ Regularly, regardless of project status ☐ Other (please specify): _____

Please indicate your level of agreement with each of the following statements:

The information presented today helped me gain an understanding of the project.

- ☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

The information was presented in a format that was easy to understand.

- ☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

Staff were able to adequately answer my questions.

- ☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

How did you hear about today's event?

- ☐ Postcard in mailbox ☐ Word of mouth ☐ Newspaper ☐ Radio
☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☐ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

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Emailed: info@novasustainablefuels.com

Why did you come to today's event?

I live in Goldboro - concern re: environmental impacts / traffic / noise / quality of life etc.

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Benefit to local community vs. province / district municipality.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☒ Yes

☐ No

If yes, how do you use it, when, and at what frequency?

Swimming

How far away do you live from the project?

☐ I would consider myself a neighbour

☒ Within 1 kilometre

☐ Within 5 kilometres

☐ Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☐ All major milestones
☒ Regularly, regardless of project status ☐ Other (please specify): _____

Please indicate your level of agreement with each of the following statements:

The information presented today helped me gain an understanding of the project.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

The information was presented in a format that was easy to understand.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

Staff were able to adequately answer my questions.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

How did you hear about today's event?

- ☐ Postcard in mailbox ☐ Word of mouth ☐ Newspaper ☒ Radio
☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

Presentations for - environmental findings/remediation, etc. (good information for local understanding of habitats and their protection)

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Thank you for helping shape a better project.

Contact info (name, email and/or phone):



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Mailed: Nova Sustainable Fuels ATTN: Megan Harris
1701 Hollis Street, Suite 800
Halifax, NS B3J 3M8

Emailed: info@novasustainablefuels.com

Why did you come to today's event?

*Work with private woodlot owner interests,
in price paid for biomass*

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes

☒ No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☒ I would consider myself a neighbour

☐ Within 1 kilometre

☐ Within 5 kilometres

☐ Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☒ All major milestones
☐ Regularly, regardless of project status ☐ Other (please specify): _____

Please indicate your level of agreement with each of the following statements:

The information presented today helped me gain an understanding of the project.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

The information was presented in a format that was easy to understand.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

Staff were able to adequately answer my questions.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

How did you hear about today's event?

- ☐ Postcard in mailbox ☐ Word of mouth ☐ Newspaper ☒ Radio
☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

Potential price paid for biomass

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Thank you for helping shape a better project.

Contact info (name, email and/or phone):



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Mailed: Nova Sustainable Fuels ATTN: Megan Harris
1701 Hollis Street, Suite 800
Halifax, NS B3J 3M8

Emailed: info@novasustainablefuels.com

Why did you come to today's event?

Future potential contractor. would
like to sell product to operation.

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes

☒ No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐ I would consider myself a neighbour

☐ Within 1 kilometre

☐ Within 5 kilometres

☒ Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☒ All major milestones
☐ Regularly, regardless of project status ☐ Other (please specify): _____

Please indicate your level of agreement with each of the following statements:

The information presented today helped me gain an understanding of the project.

- ☒ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

The information was presented in a format that was easy to understand.

- ☒ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

Staff were able to adequately answer my questions.

- ☒ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

How did you hear about today's event?

- ☐ Postcard in mailbox ☒ Word of mouth ☐ Newspaper ☐ Radio
☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

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Contact info (name, email and/or phone):

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Mailed: Nova Sustainable Fuels ATTN: Megan Harris
1701 Hollis Street, Suite 800
Halifax, NS B3J 3M8

Emailed: info@novasustainablefuels.com

Why did you come to today's event?

MORE INFO

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes

☒ No

If yes, how do you use it, when, and at what frequency?

How far away do you live from the project?

☐ I would consider myself a neighbour

☐ Within 1 kilometre

☒ Within 5 kilometres

☐ Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☒ All major milestones
☐ Regularly, regardless of project status ☐ Other (please specify): _____

Please indicate your level of agreement with each of the following statements:

The information presented today helped me gain an understanding of the project.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

The information was presented in a format that was easy to understand.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

Staff were able to adequately answer my questions.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

How did you hear about today's event?

- ☒ Postcard in mailbox ☐ Word of mouth ☐ Newspaper ☐ Radio
☐ Other (please specify): _____

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

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Interested? Please share your name and contact information below. We'll follow up with a quick note about your background and interest.

Thank you for helping shape a better project.

Contact info

Feedback Form

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Feedback forms may be:

Dropped: in the box provided or handed to one of our staff at today's event

Mailed: Nova Sustainable Fuels ATTN: Megan Harris
1701 Hollis Street, Suite 800
Halifax, NS B3J 3M8

Emailed: info@novasustainablefuels.com

Why did you come to today's event?

To gather information.

As locals, you know this area better than anyone. Is there anything you think we should know from an ecological, cultural or economic perspective around our project site (popular camping spots, hiking trails, swimming ponds, fishing/hunting spots, etc.)? Please provide key information below.

I live 1.5 hr away from here. I am aware of local community members that did not receive a notification of this session. I do not believe there is a good representation of the community.

Do you use Bettys Cove and/or Dung Cove for marine activities?

☐ Yes

☒ No

If yes, how do you use it, when, and at what frequency?

I do not use the lakes but interested in how the water withdraw will change as yearly flow rates change.

How far away do you live from the project?

☐ I would consider myself a neighbour

☐ Within 1 kilometre

☐ Within 5 kilometres

☒ Over 5 kilometres

How often would you like to hear about the project?

- ☐ Only when it impacts me ☐ All major milestones
☒ Regularly, regardless of project status ☐ Other (please specify): _____

Please indicate your level of agreement with each of the following statements:

The information presented today helped me gain an understanding of the project.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

The information was presented in a format that was easy to understand.

- ☐ Strongly Agree ☐ Agree ☒ Disagree ☐ Strongly Disagree

Staff were able to adequately answer my questions.

- ☐ Strongly Agree ☒ Agree ☐ Disagree ☐ Strongly Disagree

How did you hear about today's event?

- ☒ Postcard in mailbox ☐ Word of mouth ☐ Newspaper ☐ Radio
☐ Other (please specify): The majority of people who received postcards are not from the local community.

Would you be interested in attending future events about the project?

- ☒ Yes ☐ No

What would you like to see at future events? What other information would you be interested in learning about this project?

A brief discussion/presentation before a break out session would help attendees tailor their questions.

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Thank you for helping shape a better project.

Contact info (name, email and/or phone):

APPENDIX B

AIR DISPERSION MODELLING

MEMO

Project name **Air Dispersion Modelling Assessment Report – Proposed Sustainable Aviation Fuel Production Facility, Drumhead, NS**
 Project no. **324001159**
 Client **Nova Sustainable Fuels**
 Memo no. **1**
 Version **1 (October 21, 2025)**
 To **Frank Gascon – Strum Consulting**
 From **Elizabeth Maggs, MASC; Biljana Cosic, PhD; and Mike Jammer**
 Copy to

Prepared by **Elizabeth Maggs, MASC; Biljana Cosic, PhD; Mike Jammer**
 Checked by **Biljana Cosic, PhD; Mike Jammer**
 Approved by **William Allan, P.Eng.**

1 Introduction

Nova Sustainable Fuels (Nova or NSF) is proposing a sustainable aviation fuel (SAF) production facility to be located near Drumhead, Nova Scotia (the Facility). The Facility would produce SAF from woody biomass and renewable electricity. This memorandum documents the methodology and results of the Air Quality Dispersion Modelling Assessment of the proposed Facility carried out by Ramboll in support of the Environmental Assessment (EA) submissions to the Province of Nova Scotia by Strum Consulting (Strum). Dispersion modelling was conducted in accordance with provincial guidance and utilized the AERSCREEN dispersion model published by the United States, Environmental Protection Agency (USEPA).

The purpose of this dispersion modelling assessment is to demonstrate that the potential air emissions from the Facility would result in cumulative ground-level concentrations that meet the Nova Scotia Air Quality Regulations Schedule A: Maximum Permissible Ground Level Concentrations.¹ The technical approach is based on conceptual engineering of the Facility, a FEL-2 study prepared for NSF by an engineering consultant. At this stage in the project development, details such as final facility layout, equipment selection/ sizing, and environmental performance specifications, are not available and will be defined as engineering is advanced. The Facility description is based on the information provided to Ramboll. Additional references, assumptions and sources of information that Ramboll relied on to develop the model and evaluate the impact of the Facility on air quality are described throughout this memorandum. This Air Quality Dispersion Modelling Assessment is based on the information available at the time of preparation. As the project details are developed in subsequent phases of engineering, the assessment may need to be updated to incorporate the final design of exhaust stacks, site layout and air pollution control systems and a revised assessment prepared for environmental permitting.

2 Facility Description

The proposed SAF production facility will be located on the south coast of Nova Scotia and will convert woody biomass into a jet fuel (SAF) utilizing renewable-electricity-derived hydrogen. The carbon in the

¹ Nova Scotia Department of Environment and Climate Change, Schedule A—Maximum Permissible Ground Level Concentrations. Available at: https://www.novascotia.ca/Just/Regulations/regs/envairqt.htm#TOC1_1

fuel is from biomass, a biogenic and non-fossil source, and by utilizing hydrogen produced via electrolysis with renewable electricity, the lifecycle carbon emissions from the SAF are significantly lower than conventional jet fuel. The biomass is delivered as wet wood chips by ship or truck to the Facility. Prior to gasification, the biomass will need to be dried from roughly 50 wt % to below 10 wt % by an onsite belt dryer. The biomass is mixed with steam and oxygen in the gasifier to form a low-heating-value synthesis gas, or “syngas”, that contains mainly carbon monoxide, carbon dioxide and hydrogen. The syngas is cleaned prior to subsequent processing into methanol.

The hydrogen (H₂) that is required for the process is derived from (1) the H₂ contained in the biomass-derived syngas, which is converted directly to methanol and classified as an Advanced Biofuel (ABF) and (2) electrolytic H₂ produced in a 600 MW electrolyzer farm. Electrolytic hydrogen reacts with excess carbon in syngas to produce Renewable Fuel of Non-Biological Origin (RFNBO) methanol. The plant is designed to switch between a “high-renewables” mode (maximum electrolyzer output) and a “low-renewables” mode that relies more heavily on the biomass-derived hydrogen. The methanol streams are combined and fed to a Methanol-to-Jet (MTJ) unit that yields a finished mix of SAF meeting ASTM jet-fuel specifications, from the ABF and RFNBO methanols.

The majority of the process operations are contained and do not vent to atmosphere. The major sources of air emissions are expected to include a furnace, boilers, the biomass dryer, sour gas exhaust and flare. The sizing of these units is based on the preliminary heat and mass balances in the FEL-2 study and represent the best available information. The sizing of the structures associated with these sources is based on preliminary information and assumptions based on experience.

The location of the property boundary, key emission points, modelled structures, and land use are provided in **Figures 1 to 4, Appendix A**.

Emission sources, modelling parameters/assumptions and results are summarized in **Tables B1, B2 and B3 Appendix B**.

Emissions were estimated based on equipment capacity/throughput using emission factors and engineering calculations (**Appendix C**) for flare, biomass dryer, sour gas waste, gaseous fuel-fired boilers/heaters.

The emission estimates, modelling methodology, and key findings from the assessment are summarized in the following sections.

3 Technical Approach

The Air Assessment Guidance Document² published by Nova Scotia Department of Environment and Climate Change provides guidance on the development of air emission assessments and preferred air dispersion modelling approach. In preparation of this assessment and where applicable, Ramboll has also followed relevant guidance from other regulatory agencies in the United States and Canada such as the U.S. Environmental Protection Agency (US EPA), and Alberta Environment and Parks, Government of Alberta (AEP).

² Nova Scotia Department of Environment and Climate Change. “Air Assessment Guidance Document”. Available at: <https://novascotia.ca/nse/air/docs/air-assessment-guidance.pdf>

3.1 Process Operations and Emission Estimates

There are six (6) significant sources of emissions at the facility, which are as follows:

- Biomass belt dryers exhaust stack (Source ID: **DRYER**)
- Flare system stack (Source ID: **FLARE**)
- Auxiliary boiler stack (Source ID: **AUX**)
- Jet fractionator fired heater stack (Source ID: **JET**)
- CO boiler stack (Source ID: **COB**)
- Sour gas waste exhaust stack (Source ID: **SGW**)

The dispersion modelling was used to assess ground-level concentrations of all contaminants listed in the Nova Scotia Air Quality Regulations Schedule A: Maximum Permissible Ground Level Concentrations. The emission rates of these contaminants were estimated using engineering calculations and emission factors. Briefly, under normal operating conditions, the total abated emissions anticipated for the facility are based on a maximum potential to emit over 8,040 hours (335 days) of operation at a maximum processing rate of 894,000 metric tonnes (wet) of biomass per year. The development of emission rates for dispersion modelling from the annual potential to emit is summarized in **Tables B2** and **B3** in **Appendix B**. Further detail regarding these sources and emissions data is provided in the (**Appendix C**).

The biomass belt dryer is expected to exhaust warm, moist air through eight (8) stacks. For the purpose of modelling, only one (1) stack was modelled to develop the dispersion factor for the source. The dryers are expected to be indirectly heated, a low temperature exhaust (<50°C) and a source of total suspended particulate matter (TSP) only. Emissions from dryers were estimated using the maximum annual processing rate of the dryer system, which is 894,000 metric tonnes (wet, 50% moisture) of biomass per year. This was found to be equivalent to approximately 496,667 metric tonnes of oven-dried biomass per year at 10% moisture over an assumed operating schedule of 335 days per year. As the facility is expected to operate for 335 days per year, this value was used to conservatively calculate emission rates for contaminants over 1-hour, 8-hour, and 24-hour averaging periods. Peak hourly production rates were derived by distributing the maximum annual processing rate evenly across the hours of operation in a year. The emission factor for particulate matter was obtained from Chapter 10.9 of U.S. EPA AP-42³, which provides emission factors for particulate matter from engineered wood products dryer, as site specific data is not available at this time to derive emission rates.

The emissions from the elevated flare system were estimated based on heat input and the AP- 42 emission factors for industrial flares.⁴ The flare will operate intermittently during startup/shutdown, process upsets and vessel venting/purging prior to or during maintenance According to the NS DECC air assessment guidance document only emission associated with routine operations including maintenance emissions, startup and shutdown are required to be assessed through dispersion modelling. Unpredictable events such as emergency releases or emissions associated with upsets or abnormal events are not required to be assessed.⁵ While specific information on the required routine maintenance, startup and shutdown is not available at this stage, it is expected that some of these activities would involve periodic depressurization and purging of vapours from process vessels and storage tanks. To estimate impact from such activities Ramboll estimated and modeled emissions

³ US EPA. AP-42 10.9 Engineered Wood Products. Available at: <https://www.epa.gov/sites/default/files/2020-10/documents/c10s08.pdf>

⁴ US EPA. AP-42 13.5 Industrial Flares. Available at: https://www.epa.gov/sites/default/files/2020-10/documents/13.5_industrial_flares.pdf

⁵ NSDECC. Air Assessment Guidance Document. Direction for EA/environmental approval holders and applicants. Available at: <https://novascotia.ca/nse/air/docs/air-assessment-guidance.pdf>

from two hypothetical flaring scenarios which represent a low heat load and a high heat load flaring events:

- High emission/ low heat load flaring, which assumes methanol fuel type with a heat input of 10.5 MW plus NG Pilot (Total: 37.5 MMBtu/h).
- High emission/ high heat load flaring, which assumes a mixed fuel consisting of hydrogen, carbon monoxide, methanol, methane, and low hydrocarbons, with a heat input of 55.3 MW plus NG Pilot (Total: 190.5 MMBtu/h).

To estimate daily and annual emissions from the intermittent flaring, Ramboll assumed that depressurization of equipment in preparation of maintenance would occur 1000 hours per year. Maximum daily emissions from flaring are estimated conservatively, assuming that the purging event takes place over a 24-hour period at a sustained maximum emission and heat input rate.

The contaminants assumed to be emitted from both streams are TSP, carbon monoxide (CO), nitrogen dioxide (NO₂), and total volatile organic compounds (VOCs).

The boilers assessed are an auxiliary boiler (35.4 MW), a jet-fractionator fired heater (23 MW), and a CO boiler (1 MW). The boilers are expected to be fired on a combination of natural gas and some biogas produced onsite (biogenic methane/ethane/propane). The contaminants evaluated for each boiler are TSP, CO, SO₂, NO₂, and total VOCs. Emissions were calculated by conservatively assuming the boilers operate 365 days per year and using emission factors from Chapter 1 of U.S. EPA AP-42 for external combustion sources, specifically “uncontrolled” factors for natural gas⁶ and propane firing⁷, selecting the most conservative (highest) value applicable for each contaminant to each unit size:

- Large wall-fired boilers > 100 MMBtu/h (Section 1.4, Natural Gas Combustion)
- Small boilers < 100 MMBtu/h (Section 1.4, Natural Gas Combustion)
- Industrial propane-fired boilers, 0.3–100 MMBtu/h (Section 1.5, Liquefied Petroleum Gas Combustion)

The selected emissions factors were converted to values in grams of each contaminant emitted per MMBtu of boiler capacity and were multiplied by each boiler’s rated capacity to derive conservative emission rates for modelling.

For the sour gas waste exhaust stack, emissions were calculated based on the operating scenario where renewable energy input to the facility is zero, and the facility relies on grid power. This operating scenario results in the largest sour gas waste flow of 14,118 kg/h and therefore yields the most conservative emission estimates. Emissions were calculated using the stream composition given in the design-basis material balance. All sulphur present in this stream was assumed to be present as reduced sulphur compounds and is conservatively assumed to be all hydrogen sulphide (H₂S). The final H₂S emission rate of this stream was obtained by assuming a removal efficiency of H₂S of 98%. The type of control will be developed during subsequent engineering design.

It is important to note that the emission rate calculations are based on preliminary design data and will need to be updated after final engineering has been completed and definitive equipment specifications, operating modes, and control efficiencies are confirmed.

⁶ US EPA. AP-42 1.4 Natural Gas Combustion. Available at: https://www.epa.gov/sites/default/files/2020-09/documents/1.4_natural_gas_combustion.pdf

⁷ US EPA. AP-42 1.5 Liquefied Petroleum Gas Combustion. Available at: https://www.epa.gov/sites/default/files/2020-09/documents/1.5_liquefied_petroleum_gas_combustion.pdf

3.1.1 Excluded Sources

The study has focused on primary process sources during maximum production based on conceptual engineering design. Facility layout has not been finalized. Emissions associated with material handling and other potential fugitive sources are excluded at this stage. Natural gas used during equipment startup is assumed to be negligible as it is unlikely that this would coincide with operation of the other process units at maximum capacity. Finally, standby power generation has not been assessed. Emissions associated with natural gas usage required for the flare pilot while flare is on stand-by are also considered negligible. However, contribution of the flare pilot emissions is considered when assessing the impact of intermittent flaring emissions associated with routine maintenance such as vessel depressurization and purging.

3.2 Dispersion Modelling

Modelling was conducted using the latest version of the United States Environmental Protection Agency (U.S. EPA) recommended screening-level dispersion model AERSCREEN (version 22112).⁸ AERSCREEN is the companion screening model to AERMOD and provides conservative (upper-bound) estimates of off-property concentrations for source-receptor distances up to about 50 kilometres (km). The Nova Scotia Department of Environment and Climate Change (NSDECC) Air Assessment Guidance Document recognizes AERSCREEN as an acceptable first-tier tool for projects where a rapid check of potential impacts is required before committing to detailed modelling.⁹ In accordance with that guidance, AERSCREEN was used to model estimated emissions and determine whether the predicted maximum off-property concentrations were below the NSECC ambient objectives or, if exceeded, whether a full AERMOD analysis was necessary.

Building downwash effects influence the dispersion from point sources. Building wake effects were considered in the assessment using the U.S. EPA's Building Profile Input Program (BPIPPRM) Version 04274 to characterize building/structures. The biomass belt dryer, the auxiliary boiler, and the jet-fractionator fired heater/CO boilers are all assumed to be located near buildings or solid wall structures that generate wake effects, which could include dryer enclosure, fire boxes, tanks, piping networks, or other buildings in nearby proximity. The BPIPPRM will merge structures to create a single "virtual building" that is a rectangular prism. Since detailed layout and equipment dimensions are not available, assumed dimensions for each of the virtual buildings was based on available information and preliminary engineering estimates.

For each of these sources assumed to be situated within or near a solid wall structure the building downwash effect was considered by running Building Profile Input Program for PRIME (BPIPPRM) and incorporating its outputs into AERSCREEN dispersion model. The biomass belt dryer will be in an enclosure from which the dryer exhaust stacks shall extend. The exact locations of stacks associated with the auxiliary boiler, jet-fractionator fired heater and CO boiler are not known nor is the location of potential nearby structures. For the purpose of this assessment, these stacks were modeled assuming they are located near structures. This is modelled in BPIP as a "virtual building" that is a rectangular prism that would encompass nearby significant structures. For all the stacks, building downwash effect was simulated for the AERSCREEN runs assuming the stacks are positioned in the center of the respective building or structure. This is a conservative (stack-to-building layout) representation since

⁸ US EPA. AERSCREEN's User Guide, EPA-454/B-21-005. April 2021. Available at:

https://gaftp.epa.gov/Air/aqmg/SCRAM/models/screening/aerscreen/aerscreen_userguide.pdf

⁹ Nova Scotia Department of Environment and Climate Change. "Air Assessment Guidance Document". Available at:

<https://novascotia.ca/nse/air/docs/air-assessment-guidance.pdf>

in majority of cases it results in larger segments of plume being drawn into the building/structure wake thus increasing predicted ground-level concentrations associated with the source. The sizes of the virtual structures were estimated based project understanding at the time of study. (**Table B2b Appendix B**).

Table 1: Assumed Associated/Nearby Dominant Structure Dimensions for Building Downwash BPIP Input

Structure ID	Source ID(s)	Structure height (m)	Maximum horizontal structure dimension (m)	Minimum horizontal structure dimension (m)
Dryer Structure	DRYER	7.7	60	25
Auxiliary Boiler Structure	AUX	10	100	50
Jet Fractionator/CO Boiler Structure	JET COB	10	100	50

The layout of the structures including heights considered in the model are shown in **Figure 3** in **Appendix A** and is based on the current facility plans, best available information, and engineering judgement (i.e. values for structure height and dimensions were conservatively assumed where necessary). As implementation of the project progresses, any changes to structure location, size or height during detailed engineering will necessitate reassessment of the modelled facility concentrations.

3.2.1 Modelled Source Parameters

The complete list of AERSCREEN input source parameters that were used in dispersion modelling is based on information provided by Strum and NSF, such as current facility plans, material balances, and process descriptions. A figure displaying the sources modelled and their location within the Facility boundary is provided in **Figure 2** in **Appendix A**. The exhaust stack parameters for each modelled source are provided in **Table 2** and **Table 3**. **Table 4** summarizes the emission rates for contaminants with Nova Scotia limits what were used in the modelling.

The emission estimates are developed for normal operation at maximum production rate and are representative of maximum emissions for all contaminants (maximum potential to emit). **Tables B2a, B2b, and B2c** in **Appendix B** provide additional information regarding AERSCREEN input parameters and emissions. The source parameters used in the dispersion model are provisional values assumed based on engineering judgement.

The general approach and assumptions that were used to estimate stack parameters presented in **Table 2** are summarized below:

- a. Structure and stack heights: With the exception of biomass dryer enclosure, heights of other buildings/structures on the site are not available. The heights of other structures are assumed to be 10 meters above ground and associated stacks (such as boiler or dryer) are assumed to be at least twice the structure height.
- b. Stack flow rates: For a given piece of combustion equipment Ramboll used their estimated heat rating and fuel mix to calculate the stoichiometric combustion air. The total flow rate

under standard conditions was estimated assuming complete combustion and up to 10% of excess air. The flow rate was adjusted for stack temperature which was estimated conservatively (low) using our experience with similar processes.

- C.** Stack inner diameter: Stack diameter was determined using the estimated actual flow rate and the assumption that exit velocities should be in a range between 10 m/s and 15 m/s, which Ramboll considers reasonable for this type of source based on our experience.

These parameters will need to be validated and, if necessary, adjusted when the final engineering details become available.

Flare parameters presented in **Table 3** were estimated using USEPA guidance for industrial flares temperatures and exit velocities. The flare height of 20 m is a conservative assumption based on Ramboll's experience working with similar sites. Flare heat release rate was estimated for two flaring scenarios using mass balance information for two vapor process streams with significant hydrocarbon content.

Specifically, the selected streams have the two highest methanol/methane loads), one characterized by low heat load and the other by high heat load.

Table 2: Modelled Point Source Parameters

Source ID	Source Description	UTM Coordinates		Flow Rate (Am ³ /h)	Exit Gas Temp. (°C)	Inner Dia. (m)	Exit Velocity (m/s)	Release Height (m)	Minimum Ambient Distance (m)
		X (m)	Y (m)						
DRYER	Biomass Belt Dryer Stacks	607385.9	5002075.4	166,000	320	2.00	14.7	25	143
AUX	Auxiliary Boiler Stack	607664.5	5002360.2	55,000	413	1.20	13.5	20	339
JET	Jet Fractionator Fired Heater Stack	608104.6	5002294.5	36,000	413	1.00	12.7	20	268
COB	CO Boiler Stack	608085.9	5002276.2	1,600	413	0.20	13.8	15	285
SGW	Sour Gas Waste Exhaust	608146.1	5002681.2	12,000	318	0.50	16.6	20	320

Table 3: Modelled Flare Source Parameters

Source ID	Source Description	UTM Coordinates		Heat Release Rate (cal/s)	Heat Loss Fraction (m)	Effective Stack Dia. (m)	Exit Velocity (m/s)	Release Height (m)	Effective Release Height (m)	Minimum Ambient Distance (m)
		X (m)	Y (m)							
FLARE	Low Heat Input	608112.7	5002667.8	150,400,000	0.55	8.3	20	20	57.8	300
FLARE	High Heat Input	608112.7	5002667.8	792,900,000	0.55	18.7	20	20	102	300

Table 4: Emission Data

Source ID	Source Description	Contaminant Emission Rate (g/s) by Averaging Period										
		CO		H ₂ S		NO ₂		SO ₂			TSP	
		1-hour	8-hour	1-hour	24-hour	1-hour	Annual	1-hour	24-hour	Annual	24-hour	Annual
DRYER	Biomass Belt Dryer Stacks	--	--	--	--	--	--	--	--	--	2.66	2.44
FLARE	Low Heat Input	1.46	1.46			0.32	0.037				0.57	0.065
FLARE	High Heat Input	7.44	7.44			1.63	0.19				2.88	0.33
AUX	Auxiliary Boiler Stack	1.26	1.26	--	--	2.19	2.19	0.0090	0.0090	0.0090	0.12	0.12
JET	Jet Fractionator Fired Heater Stack	0.82	0.82	--	--	1.42	1.42	0.0058	0.0058	0.0058	0.076	0.076
COB	CO Boiler Stack	0.036	0.036	--	--	0.062	0.062	0.00025	0.00025	0.00025	0.0033	0.0033
SGW	Sour Gas Waste Exhaust	--	--	0.034	0.034	--	--	--	--	--	--	--

Estimated NO_x emissions were modelled conservatively, assuming all NO_x was released as NO₂ (i.e., Total Conversion Method or NO₂/NO_x ratio of 1) although NO₂/NO_x in-stack ratio for these type of combustion sources is expected to be considerably lower than 1. This provides a conservative maximum ground level concentration of NO₂ for comparison to the air quality standard for NO₂.

Ozone is a secondary pollutant which is formed in ambient air in the presence of Non-methane Organic Volatile Compounds (NMVOC) and Nitrogen Oxides (NO_x) precursors. As such ozone concentrations cannot be modelled using AERSCREEN. Ozone ground level concentrations emitted from the facility were estimated using the U.S. EPA NMOC/NO_x Point Source Screening Tables.¹⁰ This screening approach estimates the ozone incremental concentration due to the Facility (i.e., increase in ozone concentration above an ambient background value) using short- and long-term nonmethane organic carbon (NMOC) and NO_x emissions and their ratios.

3.2.2 Modelled Domain

Each emission source was analyzed within a 15 km × 15 km study area centered on the respective source. Terrain impacts are incorporated in the screening analysis due to the complex terrain in the proposed project area.

Modeling was conducted using a polar receptor grid centered at the source with a receptor spacing of 25 m up to 5000 m from the source and 100 m spacing at a distance between 5000 m and 15000 m from the source. The receptors are spaced radially around the source at 10 degrees increments and cover the full 360 degree sector around the sources. Terrain elevations were incorporated in the model by using a 30 m resolution terrain elevation data.¹¹ and AERMOD Terrain Preprocessor AERMAP.¹²

3.2.3 Meteorological Data and Dispersion Options

Meteorological data was generated via MAKEMET, which is the utility within AERSCREEN that generates a “worst-case” meteorological file. As described in the AERSCREEN User Guide, MAKEMET systematically steps through all permutations of meteorological parameters such as wind speed, temperature, mixing heights and others.¹³ Default values were selected which range from 0.5 m/s to 10 m/s. For each stability–wind-speed combination, the minimum and maximum ambient temperatures based on climatological data for the site were used to calculate mixing height and mechanical turbulence at a default reference height of 10 m for anemometer height. This resulted in meteorological data that contains all plausible combinations of stability, wind speed, and temperature needed to bound dispersion.

Consistent with Nova Scotia Air Assessment Guidance Document, land use data within a 3 kilometre (km) of the emission sources was used to select the appropriate land use parameters for meteorological processing.¹⁴ The 2020 Land Cover of Canada.¹⁵ was used to determine the predominant land use classification within a 3-km radius of each modeled source. The land use characterization code for the

¹⁰ U.S. EPA (1988). “VOC/NO_x Point Source Screening Tables”

¹¹ USGS National Elevation Dataset. USGS_NED_1_n45w062.tif, USGS_NED_1_n46w062.tif

¹² USEPA (2018). User's Guide for the AERMOD Terrain Preprocessor (AERMAP). April. Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/related/aermap/aermap_userguide_v18081.pdf

¹³ US EPA. AERSCREEN's User Guide, EPA-454/B-21-005. April 2021. Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/screening/aerscreen/aerscreen_userguide.pdf

¹⁴ Nova Scotia Department of Environment and Climate Change. “Air Assessment Guidance Document”. Available at: <https://novascotia.ca/nse/air/docs/air-assessment-guidance.pdf>

¹⁵ <https://open.canada.ca/data/en/dataset/ee1580ab-a23d-4f86-a09b-79763677eb47>

Canadian Land Use data was converted to the National Land Cover Database (NLCD) format using the land use category equivalency recommended by Alberta's Air Quality Model Guideline.¹⁶ Based on the 2020 land cover data the predominant land use types in the area include water, temperate or sub-polar needleleaf forest, mixed forest, and temperate or sub-polar shrubland. For illustration, a breakdown of the land use classification within a 3-kilometer radius around the biomass belt dryers is presented in Table 5. The same land use categories are identified around all other sources modeled with the relative contribution of individual categories varying between individual sources. For example, while water represents the dominant category around the dryer stack (41% of the total 3-km radius area), the dominant land use around the elevated flare is temperate or sub-polar needleleaf forest (32% of its respective 3-km radius area). Overall, water and temperate or sub-polar needleleaf forest represent two prevailing land use categories in the area.

Table 5: Land Use Cover Classification

Land Cover Class Value	Land Cover Classification	Percentage of Area Covered by Class (%)
1	Temperate or sub-polar needleleaf forest	26%
2	Sub-polar taiga needleleaf forest	0%
5	Temperate or sub-polar broadleaf deciduous forest	7%
6	Mixed forest	11%
8	Temperate of sub-polar Shrubland	0.1%
10	Temperate or sub-polar grassland	11%
11	Sub-polar or polar shrubland-lichen-moss	0%
12	Sub-polar or polar grassland-lichen-moss	0%
13	Sub-polar or polar barren-lichen-moss	0%
14	Wetland	1%
15	Cropland	0.1%
16	Barren lands	0%
17	Urban	3%
18	Water	41%

The two land use categories, water and needleleaf forest, represent the bounding scenarios since surface characteristic of other land use categories in the area (their magnitudes) tend to fall somewhere within the range between the two. Therefore these two land use categories in the area were selected to develop two screening metrological data sets (for each source) assuming uniform land use in the sector between 0 and 360 degrees. The surface characteristics for the two land use categories which include surface roughness length, albedo, and Bowen ratio were based on the values from the AERSURFACE Tool User's Guide for the NLCD 2001-2016.¹⁷ The selected characteristics, which were used to generate meteorological data sets,

¹⁶ Alberta Environment and Parks, Government of Alberta. Air Quality Model Guideline. 2021. Table E1. <https://open.alberta.ca/dataset/cefcad38-6d49-4cce-98f7-23b1741f85b7/resource/b4ed8dc9-3850-4e5f-a618-42b29c4ba2d4/download/aep-aqmg-air-quality-model-guideline-2021-09.pdf>

¹⁷ US EPA. User's Guide for AERSURFACE Tool. 2024. November. Tables 6-4, 6-5, and 6-6. Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/related/aersurface/aersurface_ug_v24142.pdf

are shown in **Table B2c** in **Appendix B**. The meteorological files were processed assuming average surface moisture levels. The maximum modeled concentrations predicted between the two meteorological data sets were used in this assessment.

The use of terrain elevation data in combination with the two surface characteristic scenarios (and respective meteorological data sets) represents a conservative approach since it combines the worst-case terrain and land use effects conservatively in a combination that may not occur in reality, a typical conservative assumption in dispersion modelling screening assessment.

3.2.4 Modelling Options

Due to the close proximity of the Project to a shoreline, dispersion modeling was conducted with and without activating shoreline fumigation algorithm. Shoreline fumigation is a phenomenon which occurs during onshore winds and stable atmospheric conditions when emissions from a tall stack are discharged above the shallow planetary boundary layer. As the plume moves inland emissions and the boundary layer depth increases emissions can potentially intersect and be pulled into the boundary layer resulting in elevated ground-level concentrations further downwind from the source. Fumigation conditions are predicted only for releases from elevated flare however the associated maximum concentrations during such conditions were lower than the overall maximum predicted during non-fumigation conditions reported in this assessment.

For comparison with the Schedule A Maximum Permissible Ground Level Concentrations limit, concentrations at all receptors were modelled at ground level assuming flat terrain. Individual contaminants were modelled using averaging periods consistent with those stated in the Schedule A.

3.2.5 Baseline Concentrations

The modelled ground level concentrations represent the incremental concentration due to the Facility only (i.e., increase in concentration above an ambient background value from facility emissions). The compliance demonstration against the Nova Scotia Air Quality Regulations Schedule A: Maximum Permissible Level Concentrations requires assessment of cumulative effects that considers existing background concentrations also referred to as baseline concentrations. For the purposes of this assessment, baseline concentrations were obtained from monitoring data available from the Port Hawkesbury monitoring station for all contaminants except H₂S and CO. Maximum concentrations for each relevant averaging period and contaminant (except H₂S and CO) were derived from available 1-hour and 24-hour data measured at these stations from 2020-2024.¹⁸ 99.5th of the hourly results were used for the 1-hour and 24-hour background concentrations and the arithmetic average of all the available data was used for the annual background concentrations. PM_{2.5} data was used as a representative measure for TSP. Data did not exist that could be used to develop baseline concentrations for H₂S and CO.

Table 6: Summary of Baseline Concentrations

Contaminant	Averaging Period	Baseline Concentration [µg/m ³]	Station (Period)
Carbon Monoxide (CO)	1-hour	--	n/a
	8-hour	--	n/a
Nitrogen Dioxide (NO ₂)	1-hour	51.2	Port Hawkesbury (2020-2024)
	Annual	4.3	Port Hawkesbury (2020-2024)
Sulphur Dioxide (SO ₂)	1-hour	40.1	Port Hawkesbury (2020-2024)
	24-hour	40.1	Port Hawkesbury (2020-2024)
	Annual	1.7	Port Hawkesbury (2020-2024)
Total Suspended Particulate Matter (TSP)	24-hour	18.7	Port Hawkesbury (2020-2024)
	Annual	5.1	Port Hawkesbury (2020-2024)
Ozone (O ₃)	1-hour	93.6	Port Hawkesbury (2020-2024)
Hydrogen Sulphide (H ₂ S)	1-hour	--	n/a
	24-hour	--	n/a

¹⁸ Nova Scotia Environment and Climate Change, "Ambient Air Quality Data" Available at: <https://novascotia.ca/nse/airdata/>

4 Modelling Results and Discussion

The maximum predicted concentrations for each contaminant and averaging period, based on Schedule A standards, are summarized in **Table 7**. These concentrations represent the maximum concentration for the applicable averaging period produced by AERSCREEN and represent incremental concentrations that result from Facility emissions only. A comparison is made against applicable Schedule A standards. The maximum incremental concentration attributable to the Facility is well below the permissible limits with 24-hour H₂S having the highest percent of the limit at 69%, followed by 1-hour NO₂ at 67% of the limit. Detailed modelling results for the Facility emissions are presented in **Table B3, Appendix B**. NO₂ was modelled conservatively as 100% of NO_x was assumed to be emitted as NO₂.

Table 7: Dispersion Modelling Results

Contaminant	Averaging Period	Maximum Modelled Ground Level Concentration (µg/m ³)	Percent of Limit – Facility Only (%)	Schedule A Maximum Permissible Ground Level Conc. (µg/m ³)
Nitrogen Dioxide (NO ₂) ⁽¹⁾	1-hour	266	67%	400
	Annual	26.6	27%	100
Carbon Monoxide (CO)	1-hour	156	0.5%	34,600
	8-hour	141	1.1%	12,700
Sulphur Dioxide (SO ₂)	1-hour	1.1	0.1%	900
	24-hour	0.7	0.2%	300
	Annual	0.1	0.2%	60
Total Suspended Particulate Matter (TSP) ⁽²⁾	24-hour	64	54%	120
	Annual	10	14%	70
Ozone (O ₃)	1-hour	-- (3)	-- (3)	160
Hydrogen Sulphide	1-hour	9.2	22%	42
	24-hour	5.5	69%	8

Notes:

1. Assumes all nitrogen oxides (NO_x) was released as nitrogen dioxide (NO₂).
2. Assumes all Particulate Matter was released as Total Suspended Particulate (TSP).
3. Ozone concentration due to secondary formation from NO_x and VOC emitted from the Facility was determined to be below screening threshold and is considered insignificant.

The modelled concentrations do not include the contribution of the ambient background. As a demonstration of compliance with the Schedule A standards, the total cumulative concentration must be below the standards. The cumulative concentration is defined as the sum of maximum modelled

concentration and the baseline concentration. Maximum cumulative concentrations are shown and compared to the limits in **Table 8**.

It is important to identify that *baseline concentrations* do represent a significant percentage of the air quality limit, notable for TSP, NO₂ and SO₂. **Table B3 Appendix B** summarizes the assessment of modeled, background and cumulative concentrations against Schedule A Limits. Data from the most recent five-year period show that 24-hour TSP baseline concentration is 18.7 µg/m³ or 16% of the Schedule A limit of 120 µg/m³. The 1-hour NO₂ baseline concentration is 13% of its limit of 400 µg/m³. Finally, the 24-hour SO₂ baseline concentration is 13% of the limit. The baseline selected reduces the allowable impact attributable to the Facility. For instance, in the case of NO₂, the maximum 1-hour modelled incremental concentration (i.e. Facility by itself) cannot be more than 348 µg/m³ in order to remain below the limit of 400µg/m³ with the baseline concentration considered.

The maximum predicted cumulative concentrations presented in **Table 8** suggest that the Facility alone or cumulatively is not expected to contribute to the exceedance of the applicable Schedule A limits. The predicted concentrations including cumulative effects with background concentrations added, are well below the permissible limits.

Table 8: Cumulative Emission Summary Table

Contaminant	Averaging Period	Maximum Modelled Conc. (µg/m³)	Baseline Conc. (µg/m³)	Cumulative Concentration [Modelled + Baseline] (µg/m³)	Air Quality Limit (µg/m³)	Percent of Limit – Cumulative Conc. (%)
Nitrogen Dioxide (NO ₂)	1-hour	266	51.2	317	400	79%
	Annual	26.6	4.3	30.8	100	31%
Carbon Monoxide (CO)	1-hour	156	—	156	34,600	0.5%
	8-hour	141	—	141	12,700	1.1%
Sulphur Dioxide (SO ₂)	1-hour	1.1	40.1	41.2	900	5%
	24-hour	0.7	40.1	40.7	300	14%
	Annual	0.1	1.7	1.9	60	3%
Total Suspended Particulate Matter (TSP)	24-hour	64	18.7	83.2	120	69%
	Annual	10	5.1	15.0	70	21%
Ozone (O ₃)	1-hour	— ⁽²⁾	93.6	93.6	160	58%
Hydrogen Sulphide (H ₂ S)	1-hour	9	—	9.2	42	22%
	24-hour	6	—	5.5	8	69%

Notes:

- Background concentrations are obtained from the Port Hawkesbury monitoring station. Background concentration for Carbon Monoxide and Hydrogen Sulphide are not available.
- Ozone concentration due to secondary formation from NO_x and VOC emitted from the Facility was determined to be below screening threshold and is considered to be insignificant.

5 Conclusions

The assessment indicates that the predicted impacts from the Facility emissions will be below applicable limits in Schedule A. Maximum incremental concentrations from Facility emissions are 24-hour H₂S at 69% of the limit, followed by 1-hour NO₂ at 67% of the limit and 24-hour TSP at 54% of the limit. Incremental concentrations for other contaminants are less than 30% of the respective limits. With background concentrations included, the cumulative ground level concentrations remain below applicable limits (**Table B3**) with the maximum predicted contribution of 1-hour NO₂ at 79% of the limit, followed by 24-hour TSP and 24-hour H₂S both at 69% of the limit. This dispersion modelling assessment demonstrates that the modelled ground-level concentrations from the proposed SAF Facility, adjusted for cumulative effects by the addition of conservative baseline concentrations, would be able to meet the Nova Scotia Air Quality Regulations Schedule A: Maximum Permissible Ground Level Concentrations.

It should be underlined that this evaluation is based on conceptual-level engineering and current plans. The conclusions presented in this memorandum are based on the information available to Ramboll at the time of the assessment. As the project continues and the engineering detail is advanced, the assessment may need to be revisited in the future as the Facility emissions and source configurations are defined.

APPENDIX A FIGURES



Legend
 - - Boundary Line

AIR DISPERSION MODELLING ASSESSMENT PROPOSED SUSTAINABLE AVIATION FUEL PRODUCTION FACILITY

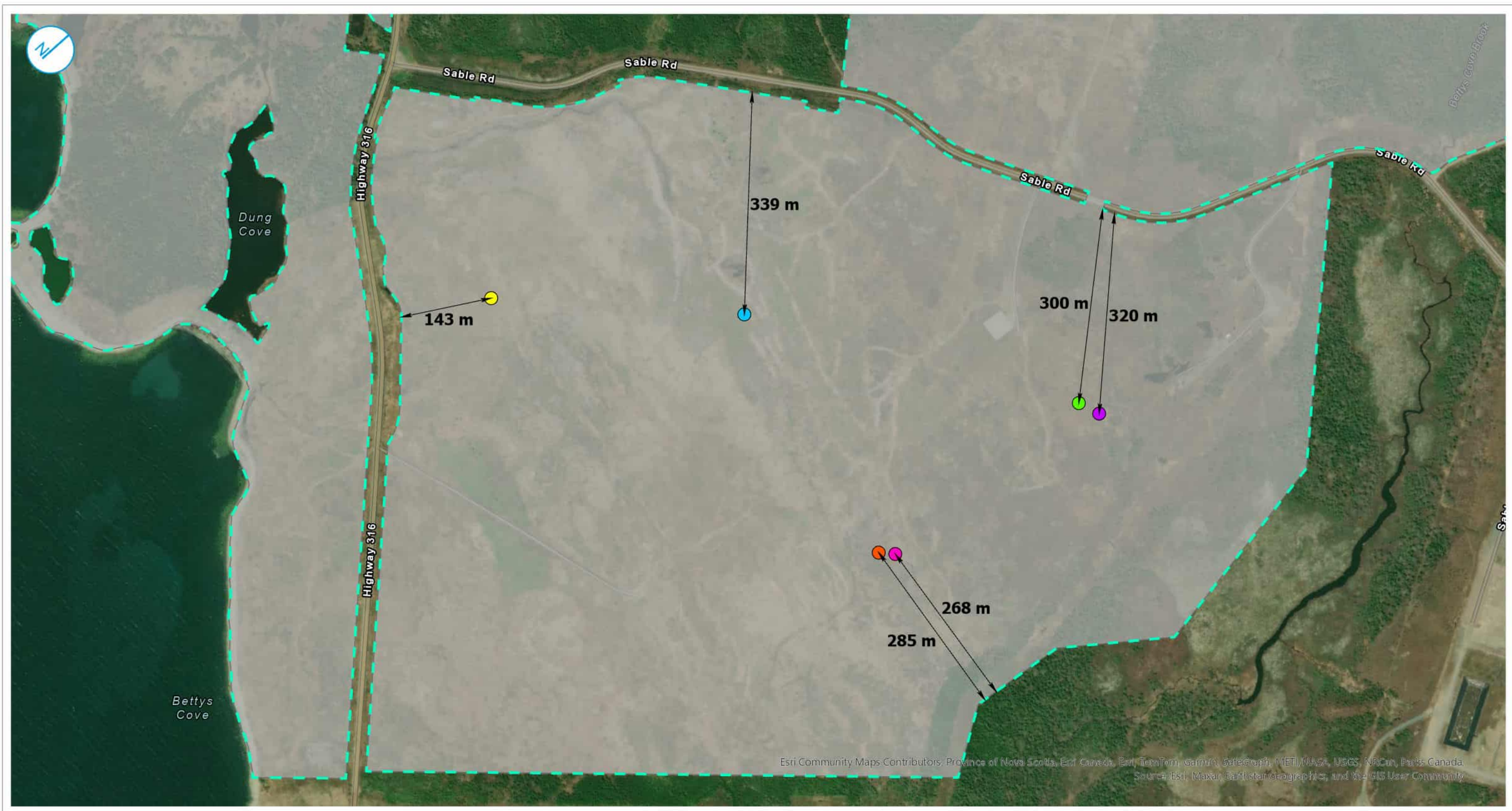
FIGURE 01

Proposed Property Boundary

0 3 6 Kilometers

Nova Scotia Facility





Legend

- Boundary Line
- Auxilliary Boiler
- Sour Gas Waste Stream
- CO Boiler
- Flare System
- Jet Fractionator Reboiler
- Biomass Belt Dryers

AIR DISPERSION MODELLING ASSESSMENT PROPOSED SUSTAINABLE AVIATION FUEL PRODUCTION FACILITY

FIGURE 02

Modelled Emission Sources and Corresponding
Minimum Ambient Distances

0 400 800 Meters

Nova Scotia Facility

RAMBOLL



Legend

- | | | |
|--|---|--|
| --- Boundary Line | ● Auxiliary Boiler | ● Sour Gas Waste Stream |
| ● CO Boiler | ● Flare System | Jet Fractionator/COBoiler Building |
| ● Jet Fractionator Reboiler | ● Biomass Belt Dryers | Auxiliary Boiler Building |
| | | Dryer Building |

0 400 800 Meters

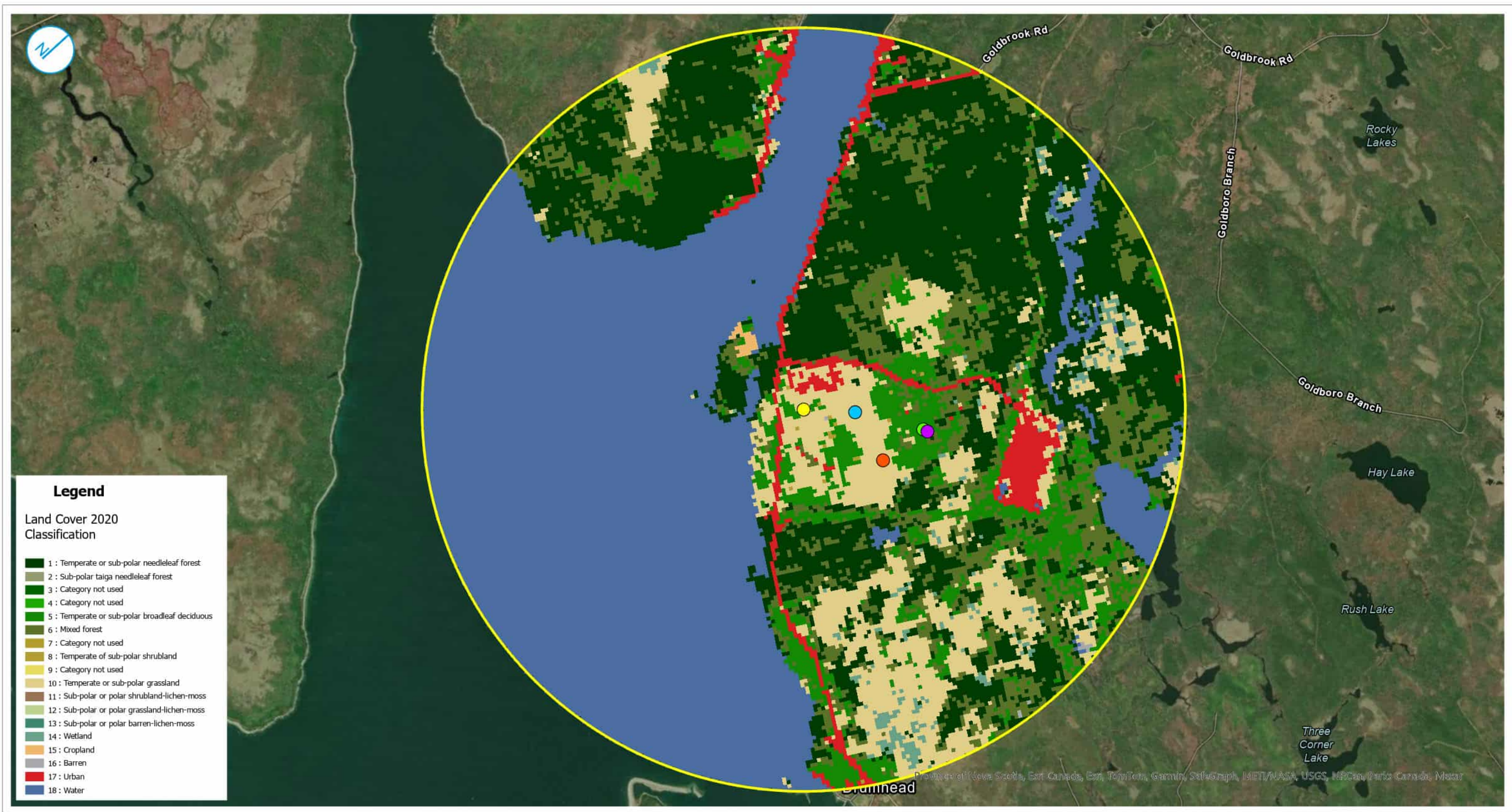
AIR DISPERSION MODELLING ASSESSMENT PROPOSED SUSTAINABLE AVIATION FUEL PRODUCTION FACILITY

Nova Scotia Facility

FIGURE 03

Modelled Buildings

RAMBOLL



Legend

- CO Boiler
- Auxilliary Boiler
- Flare System
- Biomass Belt Dryers
- Sour Gas Waste Stream
- 3 km radius around biomass belt dryers

0 2.5 5 Kilometers

AIR DISPERSION MODELLING ASSESSMENT PROPOSED SUSTAINABLE AVIATION FUEL PRODUCTION FACILITY

Nova Scotia Facility

FIGURE 04

Land Use Cover Classification

RAMBOLL

**APPENDIX B
TABLES**

B1 Source Information Table

Source ID	Source Description or Title	Expected Contaminants	Source Information
FLARE	Flare System	TSP, CO, SO ₂ , NO ₂ , VOCs	Feed 204 and 402 from the design basis material balance fed to the flare system intermittently
DRYER	Biomass Belt Dryers Stack	PM	Receiving system capacity of 894,000 tonnes per year and system dries biomass in the form of wood chips from ~50% to ~10% moisture
JET	Jet Fractionator Fired Heater Stack	TSP, CO, SO ₂ , NO ₂ , VOCs	23 MW boiler fired with a mixture of natural gas and biogas (methane, ethane, propane) generated onsite
COB	CO Boiler Stack	TSP, CO, SO ₂ , NO ₂ , VOCs	1 MW boiler fired with a mixture of natural gas and biogas (methane, ethane, propane) generated onsite
AUX	Auxiliary Boiler Stack	TSP, CO, SO ₂ , NO ₂ , VOCs	35.4 MW boiler fired with a mixture of natural gas and biogas (methane, ethane, propane) generated onsite or CO rich gas
SGW	Sour Gas Waste Exhaust	H ₂ S, VOCs	Continuous exhaust of sour gas waste from the acid gas removal unit (AGRU)
Insignificant Sources			
N/A	Gasifier	N/A	Natural gas fired during startup
N/A	MTO Regeneration Heater	N/A	Only used during startup
N/A	Diesel Generators (2 x 2 MW)	N/A	Standby power use
N/A	Cooling Tower (non	N/A	3% of recirculation rate loss

B2a Point Source Modelling Parameters

Source ID	Description	Height Above Grade (m)	UTM Coordinates		Discharge				Minimum Ambient Distance (m)
			X (m)	Y (m)	Temp. (K)	Diameter (m)	Velocity (m/s)	Release Type	
DRYER	Biomass Belt Dryers Stack	25	607385.9	5002075.4	320.0	2.00	14.7	Vertical	143
FLARE	Flare System	20	608112.7	5002667.8	--	--	20.0	Vertical	300
AUX	Auxiliary Boiler Stack	20	607664.5	5002360.2	413	1.20	13.5	Vertical	339
JET	Jet Fractionator Fired Heater Stack	20	608104.6	5002294.5	413	1.00	12.7	Vertical	268
COB	CO Boiler Stack	15	608085.9	5002276.2	413	0.20	13.8	Vertical	285
SGW	Sour Gas Waste Exhaust	20	608146.1	5002681.22	318	0.50	16.6	Vertical	320

B2b Structure Modelling Parameters

Structure ID	Building height	Maximum horizontal building dimension (m)	Minimum horizontal building dimension (m)	Maximum building dimension angle to true north (deg)	Direction of stack from building center (deg)	Distance between stack and building center (m)
Dryer Structure	7.7	60	25	90	0	0
Auxiliary Boiler Structure	10	100	50	90	0	0
Jet Fractionator/CO Boiler Structure	10	100	50	90	0	0

B2c Other Modelling Parameters

Land Cover Classification	Albedo	Bowen Ratio	Surface Roughness
Water	0.1	0.1	0.001
Temperate or sub-polar needleleaf forest	0.12	0.8	1.3

B3 Cumulative Emission Summary Table

Contaminant	CAS Number	Avg. Period (h)	Limit - Schedule A Maximum Permissible GLC ($\mu\text{g}/\text{m}^3$)	Max. Facility Modelled GLC ($\mu\text{g}/\text{m}^3$)	Max. Facility Modelled GLC as Percent of Limit (%)	Background Conc. ($\mu\text{g}/\text{m}^3$)	Cumulative GLC ($\mu\text{g}/\text{m}^3$)	Background Conc. as Percent of Limit (%)	Cumulative GLC as Percent of Limit (%)
Nitrogen Dioxide	10102-44-0	1	400	266	67%	51.2	317	13%	79%
		Annual	100	26.6	27%	4.3	30.8	4%	31%
Carbon Monoxide	630-08-0	1	34,600	156	0.5%	—	156	—	0.5%
		8	12,700	141	1.1%	—	141	—	1.1%
Total Suspended Particulate Matter	N/A	24	120	64	54%	18.7	83.2	16%	69%
		Annual	70	10	14%	5.1	15.0	7%	21%
Sulphur Dioxide	7446-09-05	1	900	1.1	0.1%	40.1	41.2	4%	5%
		24	300	0.7	0.2%	40.1	40.7	13%	14%
		Annual	60	0.1	0.2%	1.7	1.9	3%	3%
Hydrogen Sulphide	7783-06-04	1	42	9	22%	—	9.2	—	22%
		24	8	6	69%	—	5.5	—	69%
Ozone	10028-15-6	1	160	— ⁽⁴⁾	— ⁽⁴⁾	93.6	93.6	58%	58%

Note:

1. Assumes all nitrogen oxides (NO_x) was released as nitrogen dioxide (NO₂).
2. Assumes all Particulate Matter was released as Total Suspended Particulate (TSP).
3. Background concentrations from the Port Hawkesbury monitoring station are not available for Carbon Monoxide and Hydrogen Sulphide.
4. Ozone is considered insignificant as it is below the screening threshold.

APPENDIX C EMISSION ESTIMATES

Emissions from Flare

Emissions were estimated based on heat input and AP-42 emission factors. The flare will operate intermittently during vessel purging prior to maintenance. Two scenarios were evaluated.

Process Data:

Assumed Operation Schedule = 335 day/year
= 1000 h/yr

Source ID	Boiler Name	Heat Input - Process Stream [MW]	Heat input - NG Pilot [MMBtu/h]	Heat Input - Flare TOTAL [MMBtu/hr]	Fuel Type
FLARE	Elevated Flare Lower MMBTU/H	10.49	1.7	37.5	Methanol
FLARE	Elevated Flare Higher MMBTU/H	55.3	1.7	190.5	Hydrogen, carbon monoxide, methanol, methane, low hydrocarbons, etc.

Emission Data:

Contaminant	Various fuels/feeds to Industrial flares	
	Emission Factor [lb/MMBTU]	Emission Factor [g/MMBTU]
TSP (PM2.5)	0.12	54.4
CO	0.31	140.6
SO2	-	-
NOX	0.068	30.8
VOC	0.14	63.5

Sample Emission Calculations (Source: NOx from flare/feed 402)

Emission Factor = 35.8 MMBTU/hr
 $ER_{NOx} = \text{Firing Rate (MMBTU/hr)} \times \text{emission factor (g/MMBTU)} \div 3600 \text{ s/hr}$
 $ER_{NOx} = 35.8 \text{ MMBTU/hr} \times 30.8 \text{ g/MMBTU} \div 3600 \text{ s/hr}$
 $ER_{NOx} = 0.32 \text{ g/s}$

Emission Summary: Emissions from Flare

Source ID	Description	Heat Input - Process Stream [MW]	Heat Input - Flare TOTAL [MMBtu/hr]	Contaminant	CAS No.	Emission Factor [g/MMBTU]	Emission Rate [g/s]	Avg. Period
FLARE	Elevated Flare Lower MMBTU/H	10.5	37.5	TSP	n/a	54.4	0.57	24 hr
							0.065	Annual
				CO	630-08-0	140.6	1.46	1 hr & 8 hr
				SO2	7446-09-5	-	-	1 hr & 24 hr
							-	Annual
				NO2	10102-44-0	30.8	0.32	1 hr
FLARE	Elevated Flare Higher MMBTU/H	55.3	190.5	VOCs	n/a	63.5	0.037	Annual
							0.6610	1 hour
				TSP	n/a	54.4	2.88	24 hr
							0.33	Annual
				CO	630-08-0	140.6	7.44	1 hr & 8 hr
				SO2	7446-09-5	-	-	1 hr & 24 hr
							-	Annual
FLARE	Elevated Flare Higher MMBTU/H	55.3	190.5	NO2	10102-44-0	30.8	1.63	1 hr
							0.19	Annual
				VOCs	n/a	63.5	3.36	1 hour

Emissions from Sour Gas Waste Stream

The sour gas waste stream is a continuous stream that contains CO₂, N₂, sulphur and methanol. The sulphur is assumed to be present as reduced sulphur compounds and is conservatively assumed to be all hydrogen sulphide (H₂S). The source gas waste stream will need to be controlled. The approach will be defined at a latter project stage.

Process Data:

Parameter	Value	Units
Sour Gas Waste Stream Flow	14118	kg/h
	450	kmol/h
	11737	Am ³ /h
Temperature, sour gas waste	45	°C
MW, sour gas waste	31.4	g/mol

Emission Data:

Sour Gas Composition

Parameter	mol%	MW g/mol
CO ₂	21.1%	inert
N ₂	78.8%	inert
Total sulphur**	0.04%	34.08
Methanol	0.05%	32.04

** assumed to be present as reduced sulphur compounds, MW for hydrogen sulphide

H ₂ S Control Efficiency	98%
-------------------------------------	-----

Sample Emission Calculations:

$ER_{H_2S} = \text{Sour gas waste flow (kmol/hour)} \times 1000 \text{ mol/kmol} \times \text{Total sulphur mol \%} \times \text{Molecular weight (g/mol)} \div 3600 \text{ s/hr} \times (100\% - \text{Control Efficiency \%})$

$ER_{H_2S} = 450 \text{ kmol/h} \times 1000 \text{ mol/kmol} \times 0.04\% \times 34.08 \text{ g/mol} \div 3600 \text{ s/hr} \times (100\% - 95\%)$

$ER_{H_2S} = 0.03 \text{ g/s}$

Emission Summary: H₂S Emissions from Sour Gas Waste Stream

Source ID	Description	Contaminant	CAS No.	Emission Factor		24-h Emission Rate [g/s]	Annual Emission Rate [g/s]
				Value	Units		
SGW	Sour Gas Waste Exhaust	H ₂ S	7783-06-4	0.04%	mol%	0.03	0.03
		VOC	n/a	0.05%	mol%	0.04	0.04

Particulate Matter (PM) Emissions from Biomass Dryers

Drying of the biomass is required prior to processing. Biomass as received is estimated to contain 50% moisture and after drying will be approximately 10%. Drying is completed utilizing air heated in non-contact heat exchanger. The exhaust air from the dryer will contain moisture from the biomass and some particulate matter. Emissions are estimated using AP-42 Ch 10.9 emission factors for biomass drying based on throughput, as site specific data is not available at this time.

Process Data:

Assumed Operation Schedule = 335 day/year

Parameter	tonnes/year	tonnes/h
System Biomass Capacity, Wet (~50% moisture)	894,000	111
System Biomass Capacity, Oven Dried (~10% moisture)	496,667	61.8

Emission Data:

PM Emission Factor = 0.31 lb per oven-dried short ton of wood material out of dryer (lb/ODT)
PM Emission Factor = 155 g/tonne oven-dried wood material

Sample Emission Calculations:

$ER_{PM} = \text{Peak daily unloading rate (tonnes/hour)} \times EF \text{ (g/tonne)} \div 3600 \text{ s/hr}$
 $ER_{PM} = 61.8 \text{ tonnes/hour} \times 155.00 \text{ g/tonne} \times 1000 \text{ g/kg} \div 3600 \text{ s/hr}$
 $ER_{PM} = 2.66 \text{ g/s}$

Emission Summary: PM Emissions from Biomass Dryers

Source ID	Description	Contaminant	CAS No.	Emission Factor		24-h Emission Rate [g/s]	Annual Emission Rate [g/s]
				Value	Units		
DRYER	Biomass Dryer Stack	TSP	N/A	0.31	lb/ODT	2.66	2.44
		VOC	N/A	0.29	lb/ODT	2.49	2.28

Notes:

lb/ODT - pounds of emission per oven dried short ton of material out of the dryer

Emissions from Boilers

The facility will require boilers to provide process heating. The boiler are expected to be fired on a combination of natural gas and some biogas produced onsite (biogenic methane/ethane/propane). The CO boiler may be fuelled using a CO-rich fuel stream and may also use natural gas and biogas.

Emissions of NO_x were conservatively estimated using the maximum of emission factors taken from the US EPA AP-42 documentation for natural gas (Section 1.4 Natural Gas Combustion, Table 1.4-1 for Small Boilers (< 100 MMBtu/hr), Uncontrolled and Large Wall-Fired Boilers (>100 MMBTU/hr)) and propane Section 1.5 Liquefied Petroleum Gas Combustion, Table 1.5-1 Propane Emission Factor - Industrial Boilers - 10-100 MMBTU/hr). Emission factors for CO rich fuel stream are not available. It is assumed the use of emission factors for higher heating value fuels (i.e. methane or propane) to estimate NOX from a boiler combusting CO would be conservative since flame temperatures would be higher.

Process Data:

Assumed Operation Schedule = 335 day/year
Modelled Operation Schedule = 365 day/year
= 8760 h/yr

Source ID	Boiler Name	Maximum Heat Input Rating [MW]	Maximum Heat Input Rating [MMBtu/hr]	Fuel Type
AUX	Auxiliary Boiler	35.4	120.8	Natural Gas (NG)/Biogas (methane, ethane, propane)
JET	Jet Fractionator	23	78.5	
COB	CO Boiler	1	3.4	NG/Biogas or CO rich stream

Emission Data:

Contaminant	Natural Gas		Propane		Max Emission Factor [g/MMBTU]
	Emission Factor [lb/10 ⁶ scf]	Emission Factor [g/MMBTU]	Emission Factor [lb/10 ³ gal]	Emission Factor [g/MMBTU]	
TSP	7.6	3.4	0.7	3.5	3.5
CO	84	37.4	8	37.6	37.6
SO2	0.6	0.3	--	--	0.3
NOX	140	62.3	13	65.2	65.2
VOC	5.5	2.4	--	--	2.4

Sample Emission Calculations (Source: NOx from Auxiliary Boiler)

Emission Factor = 280 lb/10⁶ ft³
 $ER_{NOx} = \text{Firing Rate (MMBTU/hr)} \times \text{emission factor (g/MMBTU)} \div 3600 \text{ s/hr}$
 $ER_{NOx} = 120.8 \text{ MMBTU/hr} \times 65.2 \text{ g/MMBTU} \div 3600 \text{ s/hr}$
 $ER_{NOx} = 2.19 \text{ g/s}$

Emission Summary: Emissions from Boilers

Source ID	Description	Maximum Heat Input Rating [MW]	Maximum Heat Input Rating [MMBtu/hr]	Contaminant	CAS No.	Emission Factor [g/MMBTU]	Emission Rate [g/s]	Avg. Period
JET	Jet Fractionator Fired Heater Stack	23.0	78.5	TSP	n/a	3.5	0.0765	24 hr
							0.0765	Annual
				CO	630-08-0	37.6	0.819	1 hr & 8 hr
				SO2	7446-09-5	0.3	0.00582	1 hr & 24 hr
							0.00582	Annual
				NO2	10102-44-0	65.2	1.42	1 hr
COB	CO Boiler Stack	1.0	3.4				1.42	Annual
				VOCs	n/a	2.4	0.0533	1 hour
				TSP	n/a	3.5	0.00333	24 hr
							0.00333	Annual
				CO	630-08-0	37.6	0.0356	1 hr & 8 hr
				SO2	7446-09-5	0.3	2.53E-04	1 hr & 24 hr
AUX	Auxiliary Boiler Stack	35.4	120.8				2.53E-04	Annual
				NO2	10102-44-0	65.2	0.0618	1 hr
							0.0618	Annual
				VOCs	n/a	2.4	0.00232	1 hour
				TSP	n/a	3.5	0.118	24 hr
							0.118	Annual
JET	Jet Fractionator Fired Heater Stack	23.0	78.5	CO	630-08-0	37.6	1.26	1 hr & 8 hr
				SO2	7446-09-5	0.3	0.00895	1 hr & 24 hr
							0.00895	Annual
				NO2	10102-44-0	65.2	2.19	1 hr
							2.19	Annual
				VOCs	n/a	2.4	0.0821	1 hour

APPENDIX D

AERSCREEN OUTPUT

1. Water Characteristics Runs (All Sources)
2. Forest Characteristics Runs (All Sources)
3. Fumigation Runs (Flare)

10/21/25
06:37:58

***** STACK PARAMETERS *****

[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

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***** FLOW SECTOR ANALYSIS *****
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25 meter receptor spacing: 143. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
```

TEMPORAL PERIOD	FLOW SECTOR	BUILD WIDTH	BUILD LENGTH	XBADJ	YBADJ	MAXIMUM	IMPACT	RECEPTOR	
						1-HR CONC (ug/m3)	DIST (m)	HEIGHT (m)	
10		63.43	35.04	-17.52	0.00	24.97	675.0	2.52	ANN
20		64.93	44.01	-22.01	0.00	24.96	675.0	0.10	ANN
30		64.46	51.65	-25.83	0.00	34.16	3800.0	45.45	ANN
40		62.03	57.72	-28.86	0.00	24.97	675.0	2.82	ANN
50		57.72	62.03	-31.02	0.00	24.96	675.0	0.48	ANN
60		51.65	64.46	-32.23	0.00	24.30	700.0	-2.30	ANN
70		44.01	64.93	-32.47	0.00	24.58	625.0	-0.80	ANN
80		35.04	63.43	-31.71	0.00	24.93	650.0	1.23	ANN
90		25.00	60.00	-30.00	0.00	24.48	625.0	-1.12	ANN
100		35.04	63.43	-31.71	0.00	23.69	600.0	-3.00	ANN
110		44.01	64.93	-32.47	0.00	23.48	650.0	-5.03	ANN
120		51.65	64.46	-32.23	0.00	24.83	700.0	-0.35	ANN
130		57.72	62.03	-31.02	0.00	24.93	650.0	0.23	ANN
140		62.03	57.72	-28.86	0.00	23.15	625.0	-5.67	ANN
150		64.46	51.65	-25.83	0.00	20.73	600.0	-15.60	ANN
160		64.93	44.01	-22.01	0.00	19.80	625.0	-24.72	ANN
170		63.43	35.04	-17.52	0.00	19.17	725.0	-39.75	ANN
180		60.00	25.00	-12.50	0.00	19.17	725.0	-39.75	ANN
190		63.43	35.04	-17.52	0.00	19.17	725.0	-39.75	ANN
200		64.93	44.01	-22.01	0.00	19.17	725.0	-39.75	ANN
210		64.46	51.65	-25.83	0.00	19.17	725.0	-39.75	ANN
220		62.03	57.72	-28.86	0.00	19.30	675.0	-35.67	ANN
230		57.72	62.03	-31.02	0.00	19.66	600.0	-23.66	ANN
240		51.65	64.46	-32.23	0.00	19.85	600.0	-21.86	ANN
250		44.01	64.93	-32.47	0.00	19.62	675.0	-30.38	ANN
260		35.04	63.43	-31.71	0.00	19.67	650.0	-28.26	ANN
270		25.00	60.00	-30.00	0.00	19.52	700.0	-32.84	ANN
280		35.04	63.43	-31.71	0.00	19.23	775.0	-37.29	ANN
290		44.01	64.93	-32.47	0.00	19.17	725.0	-39.75	ANN
300		51.65	64.46	-32.23	0.00	19.54	675.0	-31.55	ANN
310		57.72	62.03	-31.02	0.00	22.42	625.0	-8.56	ANN
320		62.03	57.72	-28.86	0.00	25.10	650.0	8.88	ANN
330		64.46	51.65	-25.83	0.00	25.19	650.0	10.86	ANN
340		64.93	44.01	-22.01	0.00	27.99	5400.0	57.42	ANN
350*		63.43	35.04	-17.52	0.00	34.26	1700.0	36.68	ANN
360		60.00	25.00	-12.50	0.00	25.00	700.0	6.33	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.10

BOWEN RATIO: 0.10

ROUGHNESS LENGTH: 0.001 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

-- -- -- -- --

10 03 23 23 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-2.60	0.059	-9.000	0.020	-999.	33.	7.7	0.001	0.10	0.10	1.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 3.0 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 25.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 21.8 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 46.8 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

-- -- -- -- --

10 03 31 23 13

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
41.65	0.442	0.600	0.020	198.	676.	-198.4	0.001	0.10	0.10	10.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 10.8 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 24.4 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 12.8 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 37.3 meters

***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
143.00	22.97	17.66	3825.00	33.97	45.85
150.00	22.96	17.59	3850.00	33.77	45.88
175.00	21.37	16.41	3875.00	33.55	46.00
200.00	18.95	12.90	3900.00	33.21	46.45
225.00	19.71	3.42	3925.00	32.76	46.88
250.00	20.74	6.11	3950.00	32.35	47.15
275.00	21.04	8.94	3975.00	32.08	47.25
300.00	20.62	11.29	4000.00	31.89	47.25
325.00	19.57	12.13	4025.00	31.83	47.12
350.00	18.12	10.47	4050.00	32.21	46.12
375.00	17.66	-0.08	4075.00	31.92	45.00
400.00	19.20	7.98	4100.00	30.62	43.64
425.00	20.75	9.68	4125.00	27.02	41.61
450.00	21.93	10.41	4150.00	22.09	39.41
475.00	22.78	10.21	4175.00	17.50	36.71
500.00	23.23	7.23	4200.00	18.37	37.23
525.00	23.81	7.31	4225.00	19.47	37.92
550.00	24.31	8.20	4250.00	20.17	38.42
575.00	24.67	8.83	4275.00	19.94	38.34
600.00	24.91	9.29	4300.00	20.01	38.46
625.00	25.09	10.21	4325.00	20.59	38.93
650.00	25.19	10.86	4350.00	20.89	39.24
675.00	25.18	10.65	4375.00	20.79	39.25
700.00	25.07	9.04	4400.00	20.67	39.25
725.00	24.96	7.80	4425.00	20.70	39.36
750.00	24.86	8.81	4450.00	20.45	39.25
775.00	24.68	9.69	4475.00	20.78	39.59
800.00	24.48	5.59	4500.00	21.76	40.05

825.00	24.28	5.41	4525.00	22.15	40.27
850.00	24.05	5.13	4550.00	21.94	40.22
875.00	23.80	1.30	4575.00	21.93	40.26
900.00	23.54	2.25	4600.00	21.85	40.27
925.00	23.24	-0.11	4625.00	22.75	40.74
950.00	22.94	3.33	4650.00	24.09	41.47
975.00	22.64	3.39	4675.00	25.55	42.39
1000.00	22.37	0.28	4700.00	26.72	43.35
1025.00	22.07	1.80	4725.00	27.49	44.33
1050.00	21.77	2.77	4750.00	27.81	45.39
1075.00	21.49	2.79	4775.00	27.62	46.29
1100.00	21.20	2.55	4800.00	27.41	46.52
1125.00	20.92	2.42	4825.00	27.34	46.34
1150.00	20.65	1.68	4850.00	27.23	46.25
1175.00	20.38	1.00	4875.00	27.16	45.93
1200.00	20.11	0.58	4900.00	27.03	45.50
1225.00	19.83	-0.14	4925.00	26.90	45.50
1250.00	19.57	4.19	4950.00	26.78	45.82
1275.00	19.31	4.15	4975.00	26.59	46.25
1300.00	19.06	4.22	5000.00	26.47	46.26
1325.00	18.82	4.18	5100.00	25.56	47.19
1350.00	18.58	3.91	5200.00	22.66	42.01
1375.00	18.35	3.50	5300.00	26.91	53.85
1400.00	18.12	3.42	5400.00	27.99	57.42
1425.00	17.90	3.27	5500.00	27.47	58.05
1450.00	17.68	3.26	5600.00	27.02	57.53
1475.00	20.43	33.25	5700.00	26.45	56.59
1500.00	20.10	33.24	5800.00	24.36	53.47
1525.00	19.71	33.21	5900.00	21.29	50.73
1550.00	20.81	33.54	6000.00	22.26	45.33
1575.00	23.40	34.19	6100.00	20.72	50.82
1600.00	24.47	34.48	6200.00	22.03	52.50
1625.00	29.23	35.52	6300.00	23.04	54.35
1650.00	31.92	36.11	6400.00	23.23	55.47
1675.00	33.98	36.57	6500.00	23.29	58.24
1700.00	34.26	36.68	6600.00	23.18	42.72
1725.00	32.58	36.40	6700.00	22.44	42.60
1750.00	27.84	35.49	6800.00	21.61	41.82
1775.00	23.76	34.67	6900.00	19.38	63.28
1800.00	24.41	34.88	7000.00	21.62	57.95
1825.00	22.87	34.58	7100.00	20.90	55.49
1850.00	21.38	34.28	7200.00	19.99	54.13
1875.00	19.91	33.97	7300.00	19.72	54.14
1900.00	19.34	33.87	7400.00	18.95	53.29
1925.00	18.35	33.66	7500.00	17.89	45.78
1950.00	18.05	33.62	7600.00	17.62	46.25
1975.00	16.05	33.12	7700.00	17.42	45.78
2000.00	14.17	32.59	7800.00	17.16	45.26
2025.00	13.86	3.26	7900.00	16.96	46.19
2050.00	13.74	2.24	8000.00	16.00	43.25

2075.00	13.62	4.14	8100.00	16.32	51.81
2100.00	13.50	2.84	8200.00	17.48	54.22
2125.00	13.38	3.71	8300.00	16.61	52.95
2150.00	13.27	2.12	8400.00	17.23	54.70
2175.00	13.15	2.18	8500.00	17.57	56.85
2200.00	13.04	1.55	8600.00	17.40	58.41
2225.00	12.93	0.65	8700.00	17.19	58.29
2250.00	12.83	0.19	8800.00	16.35	54.60
2275.00	12.72	0.10	8900.00	14.14	48.89
2300.00	12.62	1.76	9000.00	14.79	45.04
2325.00	12.52	3.32	9100.00	14.65	45.21
2350.00	12.42	2.16	9200.00	14.49	45.25
2375.00	12.32	3.50	9300.00	14.33	45.27
2400.00	12.22	3.08	9400.00	16.39	43.74
2425.00	12.12	2.56	9500.00	15.21	50.37
2450.00	12.03	1.98	9600.00	14.66	54.08
2475.00	11.94	2.03	9700.00	15.15	56.59
2500.00	11.85	2.08	9800.00	14.94	56.38
2525.00	11.76	2.59	9900.00	14.86	58.98
2550.00	11.67	3.33	10000.00	14.56	59.91
2575.00	11.58	4.23	10100.00	14.54	57.25
2600.00	11.50	4.30	10200.00	14.21	55.97
2625.00	11.41	3.64	10300.00	13.33	62.48
2650.00	11.33	0.28	10400.00	12.95	63.06
2675.00	11.25	1.39	10500.00	21.49	44.68
2700.00	11.17	2.30	10600.00	13.73	59.21
2725.00	11.09	1.84	10700.00	12.84	62.35
2750.00	11.02	0.27	10800.00	13.77	55.34
2775.00	10.94	0.19	10900.00	13.73	44.96
2800.00	10.86	0.55	11000.00	22.05	47.04
2825.00	10.79	0.52	11100.00	18.50	57.53
2850.00	10.71	1.64	11200.00	19.05	54.61
2875.00	10.64	1.41	11300.00	15.01	62.90
2900.00	10.57	1.88	11400.00	15.48	58.15
2925.00	10.50	1.99	11500.00	11.43	46.68
2950.00	10.43	1.74	11600.00	17.03	60.74
2975.00	10.36	0.60	11700.00	18.17	58.31
3000.00	10.30	0.43	11800.00	12.15	58.84
3025.00	10.23	2.41	11900.00	12.59	42.65
3050.00	10.16	3.25	12000.00	11.81	59.94
3075.00	10.10	4.32	12100.00	11.80	57.91
3100.00	10.03	5.42	12200.00	11.69	57.94
3125.00	9.965	7.04	12300.00	11.50	59.71
3150.00	9.901	7.71	12400.00	11.46	58.53
3175.00	9.840	7.57	12500.00	20.07	47.93
3200.00	9.780	7.16	12600.00	17.16	54.91
3225.00	9.723	-0.13	12700.00	14.43	49.28
3250.00	10.07	32.13	12800.00	13.56	50.23
3275.00	12.65	33.30	12900.00	17.70	41.10
3300.00	13.67	33.75	13000.00	16.54	53.95

3325.00	12.96	33.48	13100.00	15.42	54.91
3350.00	12.47	33.29	13200.00	10.80	68.94
3375.00	11.85	33.04	13300.00	10.37	56.07
3400.00	10.04	32.21	13400.00	10.95	59.96
3425.00	9.468	31.94	13500.00	10.30	57.25
3450.00	11.20	32.80	13600.00	10.20	57.25
3475.00	13.21	33.73	13700.00	12.19	63.23
3500.00	15.65	34.80	13800.00	13.97	58.11
3525.00	18.17	35.88	13900.00	9.959	58.60
3550.00	20.44	36.88	14000.00	9.845	59.34
3575.00	22.42	37.82	14100.00	11.42	62.63
3600.00	24.10	38.72	14200.00	10.61	59.24
3625.00	24.94	39.28	14300.00	16.30	46.81
3650.00	25.39	39.66	14400.00	13.15	57.24
3675.00	27.12	40.57	14500.00	10.38	65.46
3700.00	29.25	41.44	14600.00	9.356	58.86
3725.00	31.61	42.58	14700.00	11.44	63.11
3750.00	33.55	43.94	14800.00	13.05	59.25
3775.00	34.06	44.72	14900.00	10.62	60.75
3800.00	34.16	45.45	15000.00	10.06	55.11

 ***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	34.62	34.62	31.16	20.77	3.462

DISTANCE FROM SOURCE 1690.00 meters directed toward 350 degrees
 RECEPTOR HEIGHT 36.73 meters

IMPACT AT THE
 AMBIENT BOUNDARY 22.97 22.97 20.67 13.78 2.297

DISTANCE FROM SOURCE 143.00 meters directed toward 20 degrees
 RECEPTOR HEIGHT 17.66 meters

10/21/25
00:18:10

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***** FLARE PARAMETERS *****
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[illegible]

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***** BUILDING DOWNWASH PARAMETERS *****
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***** FLOW SECTOR ANALYSIS *****

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25 meter receptor spacing: 300. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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FLOW SECTOR	MAXIMUM 1-HR CONC (ug/m3)	IMPACT DIST (m)	RECEPTOR HEIGHT (m)	TEMPORAL PERIOD
10	0.6264	3300.0	39.44	ANN
20*	0.6268	3225.0	46.88	ANN
30	0.6257	3250.0	31.43	ANN
40	0.6250	3325.0	9.02	ANN
50	0.6250	3325.0	4.22	ANN
60	0.6248	3275.0	0.36	ANN
70	0.6250	3325.0	1.51	ANN
80	0.6247	3250.0	2.02	ANN
90	0.6189	3125.0	-4.33	ANN
100	0.6042	3250.0	-20.02	ANN
110	0.6014	3000.0	-18.63	ANN
120	0.6028	3150.0	-20.41	ANN
130	0.6001	3125.0	-22.82	ANN
140	0.5954	3275.0	-29.66	ANN
150	0.5913	3500.0	-35.49	ANN
160	0.5932	3850.0	-28.25	ANN
170	0.5913	3500.0	-35.49	ANN
180	0.5913	3500.0	-35.49	ANN
190	0.5913	3500.0	-35.49	ANN
200	0.5913	3500.0	-35.49	ANN
210	0.5913	3500.0	-35.49	ANN
220	0.5913	3500.0	-35.49	ANN
230	0.5913	3500.0	-35.49	ANN
240	0.5913	3500.0	-35.49	ANN
250	0.6040	3250.0	-20.17	ANN
260	0.6250	3350.0	8.96	ANN
270	0.6255	3350.0	25.15	ANN
280	0.6253	3325.0	17.81	ANN
290	0.6245	3450.0	1.12	ANN
300	0.5913	3500.0	-35.49	ANN
310	0.6035	3125.0	-19.33	ANN
320	0.6256	3375.0	28.46	ANN
330	0.6255	3325.0	24.45	ANN
340	0.6251	3325.0	10.28	ANN
350	0.6257	3325.0	27.38	ANN
360	0.6262	3350.0	36.35	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.10

BOWEN RATIO: 0.10

ROUGHNESS LENGTH: 0.001 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 01 25 25 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
6.38	0.033	0.300	0.020	297.	14.	-1.0	0.001	0.10	0.10	0.50

HT	REF TA	HT
10.0	244.7	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 0.6 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 57.8 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 7520.0 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 7577.8 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 10 09 25 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
41.65	0.108	1.200	0.020	1586.	82.	-2.9	0.001	0.10	0.10	2.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 2.1 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 57.8 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 1943.4 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 2001.1 meters

 ***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
300.00	0.1859E-01	8.27	3925.00	0.6154	48.66
325.00	0.1904E-01	8.83	3950.00	0.6146	48.68
350.00	0.1940E-01	9.37	3975.00	0.6137	48.46
375.00	0.2037E-01	9.42	4000.00	0.6128	48.48
400.00	0.2122E-01	9.53	4025.00	0.6119	48.51
425.00	0.2262E-01	9.47	4050.00	0.6110	48.54
450.00	0.2460E-01	10.34	4075.00	0.6100	48.31
475.00	0.2682E-01	11.63	4100.00	0.6090	47.51
500.00	0.2927E-01	12.82	4125.00	0.6080	47.40
525.00	0.3194E-01	13.83	4150.00	0.6070	46.61
550.00	0.3493E-01	15.39	4175.00	0.6060	46.13
575.00	0.3798E-01	15.27	4200.00	0.6049	45.46
600.00	0.4119E-01	14.25	4225.00	0.6038	44.47
625.00	0.4488E-01	15.11	4250.00	0.6028	43.50
650.00	0.5002E-01	15.39	4275.00	0.6017	43.55
675.00	0.5625E-01	13.90	4300.00	0.6006	44.06
700.00	0.6371E-01	14.75	4325.00	0.5996	45.48
725.00	0.7172E-01	15.93	4350.00	0.5985	47.24
750.00	0.8041E-01	18.14	4375.00	0.5975	49.06
775.00	0.8933E-01	19.19	4400.00	0.5964	50.53
800.00	0.9849E-01	19.50	4425.00	0.5953	51.75
825.00	0.1082	20.69	4450.00	0.5942	52.54
850.00	0.1186	23.63	4475.00	0.5930	53.07
875.00	0.1292	25.96	4500.00	0.5918	52.69
900.00	0.1399	27.75	4525.00	0.5906	51.66
925.00	0.1505	29.00	4550.00	0.5894	50.25
950.00	0.1611	29.67	4575.00	0.5882	49.23
975.00	0.1716	30.36	4600.00	0.5870	50.17
1000.00	0.1823	31.25	4625.00	0.5858	50.45
1025.00	0.1930	32.44	4650.00	0.5845	50.72
1050.00	0.2035	33.47	4675.00	0.5833	50.72
1075.00	0.2137	34.01	4700.00	0.5821	51.18
1100.00	0.2237	34.41	4725.00	0.5808	51.42
1125.00	0.2333	34.22	4750.00	0.5796	51.35

1150.00	0.2430	34.88	4775.00	0.5783	50.66
1175.00	0.2522	35.04	4800.00	0.5770	50.39
1200.00	0.2614	35.70	4825.00	0.5757	50.04
1225.00	0.2703	36.28	4850.00	0.5745	49.76
1250.00	0.2786	36.13	4875.00	0.5732	50.32
1275.00	0.2867	36.26	4900.00	0.5719	51.19
1300.00	0.2946	36.55	4925.00	0.5706	51.94
1325.00	0.3023	37.20	4950.00	0.5694	52.90
1350.00	0.3094	37.19	4975.00	0.5681	53.89
1375.00	0.3162	37.02	5000.00	0.5668	55.15
1400.00	0.3227	36.84	5100.00	0.5616	59.33
1425.00	0.3290	36.97	5200.00	0.5563	61.87
1450.00	0.3354	38.61	5300.00	0.5509	61.25
1475.00	0.3423	39.42	5400.00	0.5455	60.63
1500.00	0.3526	40.31	5500.00	0.5401	58.11
1525.00	0.3624	40.41	5600.00	0.5346	54.80
1550.00	0.3717	39.90	5700.00	0.5291	52.18
1575.00	0.3809	39.19	5800.00	0.5238	56.94
1600.00	0.3901	38.96	5900.00	0.5185	64.42
1625.00	0.3992	38.76	6000.00	0.5130	68.88
1650.00	0.4084	39.46	6100.00	0.5076	52.79
1675.00	0.4174	40.02	6200.00	0.5023	51.94
1700.00	0.4261	40.09	6300.00	0.4970	49.36
1725.00	0.4345	40.20	6400.00	0.4917	44.88
1750.00	0.4424	39.51	6500.00	0.4865	42.79
1775.00	0.4501	38.48	6600.00	0.4814	41.30
1800.00	0.4574	37.17	6700.00	0.4763	38.48
1825.00	0.4648	36.35	6800.00	0.4712	28.73
1850.00	0.4720	35.74	6900.00	0.4662	28.92
1875.00	0.4791	35.47	7000.00	0.4613	26.36
1900.00	0.4859	34.62	7100.00	0.4563	17.46
1925.00	0.4924	33.49	7200.00	0.4532	53.49
1950.00	0.4988	32.81	7300.00	0.4506	51.18
1975.00	0.5051	32.51	7400.00	0.4480	50.31
2000.00	0.5112	32.51	7500.00	0.4455	52.82
2025.00	0.5172	32.45	7600.00	0.4428	48.77
2050.00	0.5228	31.72	7700.00	0.4401	44.44
2075.00	0.5281	30.51	7800.00	0.4374	44.87
2100.00	0.5332	29.56	7900.00	0.4347	41.90
2125.00	0.5382	28.44	8000.00	0.4320	39.61
2150.00	0.5432	28.66	8100.00	0.4293	37.03
2175.00	0.5480	28.78	8200.00	0.4266	33.50
2200.00	0.5526	28.60	8300.00	0.4239	30.48
2225.00	0.5571	29.19	8400.00	0.4212	25.04
2250.00	0.5613	29.30	8500.00	0.4185	24.75
2275.00	0.5654	29.62	8600.00	0.4158	23.64
2300.00	0.5693	30.28	8700.00	0.4130	18.71
2325.00	0.5730	30.24	8800.00	0.4103	18.06
2350.00	0.5763	28.65	8900.00	0.4075	15.42
2375.00	0.5794	26.28	9000.00	0.4048	13.11

2400.00	0.5826	26.55	9100.00	0.4020	9.92
2425.00	0.5858	27.17	9200.00	0.3992	7.66
2450.00	0.5889	28.88	9300.00	0.3964	1.86
2475.00	0.5920	31.46	9400.00	0.3936	3.20
2500.00	0.5949	33.70	9500.00	0.3908	3.50
2525.00	0.5976	35.54	9600.00	0.3881	2.70
2550.00	0.6001	36.61	9700.00	0.3854	3.33
2575.00	0.6024	37.46	9800.00	0.3827	2.76
2600.00	0.6045	38.37	9900.00	0.3800	7.10
2625.00	0.6067	39.70	10000.00	0.3773	2.76
2650.00	0.6087	41.31	10100.00	0.3747	1.47
2675.00	0.6106	42.60	10200.00	0.3721	4.79
2700.00	0.6123	43.60	10300.00	0.3696	4.47
2725.00	0.6139	44.71	10400.00	0.3670	6.23
2750.00	0.6156	46.55	10500.00	0.3645	7.58
2775.00	0.6170	48.03	10600.00	0.3620	6.41
2800.00	0.6184	49.45	10700.00	0.3596	3.44
2825.00	0.6196	50.57	10800.00	0.3571	1.28
2850.00	0.6206	50.75	10900.00	0.3547	5.57
2875.00	0.6216	51.63	11000.00	0.3523	5.61
2900.00	0.6225	52.22	11100.00	0.3499	12.11
2925.00	0.6232	52.37	11200.00	0.3489	3.38
2950.00	0.6239	52.52	11300.00	0.3466	8.10
2975.00	0.6245	52.62	11400.00	0.3455	0.24
3000.00	0.6250	53.15	11500.00	0.3432	5.42
3025.00	0.6255	53.51	11600.00	0.3412	5.78
3050.00	0.6259	53.58	11700.00	0.3394	5.33
3075.00	0.6262	53.60	11800.00	0.3376	4.20
3100.00	0.6263	53.10	11900.00	0.3360	0.44
3125.00	0.6264	52.23	12000.00	0.3338	-1.02
3150.00	0.6264	51.24	12100.00	0.3318	6.85
3175.00	0.6266	50.22	12200.00	0.3297	9.58
3200.00	0.6267	48.82	12300.00	0.3256	23.23
3225.00	0.6268	46.88	12400.00	0.3254	14.49
3250.00	0.6267	44.59	12500.00	0.3236	14.46
3275.00	0.6266	41.87	12600.00	0.3219	14.51
3300.00	0.6264	39.44	12700.00	0.3201	14.51
3325.00	0.6264	39.30	12800.00	0.3196	2.35
3350.00	0.6264	39.51	12900.00	0.3173	9.10
3375.00	0.6263	39.51	13000.00	0.3156	8.92
3400.00	0.6262	39.51	13100.00	0.3143	3.84
3425.00	0.6260	39.51	13200.00	0.3125	-0.94
3450.00	0.6257	39.51	13300.00	0.3109	4.48
3475.00	0.6255	39.50	13400.00	0.3083	-3.63
3500.00	0.6252	39.43	13500.00	0.3076	4.25
3525.00	0.6249	40.26	13600.00	0.3059	4.95
3550.00	0.6245	40.68	13700.00	0.3044	1.29
3575.00	0.6241	41.04	13800.00	0.3027	2.93
3600.00	0.6237	41.61	13900.00	0.3010	5.03
3625.00	0.6233	42.46	14000.00	0.2995	2.67

3650.00	0.6227	42.51	14100.00	0.2978	4.53
3675.00	0.6222	42.51	14200.00	0.2961	7.68
3700.00	0.6216	42.14	14300.00	0.2947	3.33
3725.00	0.6209	42.00	14400.00	0.2931	5.69
3750.00	0.6204	44.07	14500.00	0.2916	2.22
3775.00	0.6199	46.59	14600.00	0.2901	1.97
3800.00	0.6193	48.52	14700.00	0.2886	1.84
3825.00	0.6186	49.44	14800.00	0.2870	5.65
3850.00	0.6179	50.36	14900.00	0.2855	4.35
3875.00	0.6171	50.04	15000.00	0.2841	0.51
3900.00	0.6163	49.28			

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	0.6268	0.6268	0.5641	0.3761	0.6268E-01

DISTANCE FROM SOURCE 3215.00 meters directed toward 20 degrees
 RECEPTOR HEIGHT 47.72 meters

IMPACT AT THE
 AMBIENT BOUNDARY 0.1859E-01 0.1859E-01 0.1673E-01 0.1115E-01 0.1859E-02

DISTANCE FROM SOURCE 300.00 meters directed toward 290 degrees
 RECEPTOR HEIGHT 8.27 meters

10/21/25
00:26:05

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***** FLARE PARAMETERS *****
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[illegible]

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***** BUILDING DOWNWASH PARAMETERS *****
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***** FLOW SECTOR ANALYSIS *****

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25 meter receptor spacing: 300. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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FLOW SECTOR	MAXIMUM 1-HR CONC (ug/m3)	IMPACT DIST (m)	RECEPTOR HEIGHT (m)	TEMPORAL PERIOD
10	0.1600	5000.0	43.79	ANN
20	0.1599	5000.0	33.38	ANN
30	0.1598	4925.0	31.52	ANN
40	0.1598	5000.0	17.46	ANN
50	0.1598	4950.0	22.99	ANN
60	0.1598	4975.0	23.41	ANN
70	0.1597	5000.0	10.30	ANN
80	0.1597	5000.0	8.86	ANN
90	0.1574	4850.0	-15.21	ANN
100	0.1576	5200.0	-14.14	ANN
110	0.1559	5200.0	-28.29	ANN
120	0.1551	5100.0	-35.49	ANN
130	0.1551	5100.0	-35.49	ANN
140	0.1551	5100.0	-35.49	ANN
150	0.1551	5100.0	-35.49	ANN
160	0.1551	5100.0	-35.49	ANN
170	0.1551	5100.0	-35.49	ANN
180	0.1551	5100.0	-35.49	ANN
190	0.1551	5100.0	-35.49	ANN
200	0.1587	5400.0	-1.56	ANN
210	0.1594	5200.0	2.24	ANN
220	0.1592	5200.0	-1.29	ANN
230	0.1589	4800.0	-3.79	ANN
240	0.1587	5300.0	-3.52	ANN
250	0.1575	5500.0	-8.38	ANN
260	0.1552	4600.0	-24.78	ANN
270	0.1597	5000.0	11.22	ANN
280	0.1599	5000.0	30.29	ANN
290	0.1599	5000.0	34.58	ANN
300	0.1597	5000.0	12.38	ANN
310	0.1579	5400.0	-7.72	ANN
320	0.1598	4975.0	17.86	ANN
330*	0.1601	5000.0	55.15	ANN
340	0.1599	5000.0	37.81	ANN
350	0.1598	5000.0	16.51	ANN
360	0.1599	5000.0	40.48	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.10

BOWEN RATIO: 0.10

ROUGHNESS LENGTH: 0.001 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 02 06 6 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
1.03	0.028	0.300	0.020	792.	11.	-1.7	0.001	0.10	0.10	0.50

HT	REF TA	HT
10.0	244.7	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 0.5 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 102.2 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 22195.1 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 22297.3 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 01 16 6 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
57.01	0.041	0.300	0.020	153.	19.	-1.0	0.001	0.10	0.10	0.50

HT	REF TA	HT
10.0	244.7	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 0.7 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 102.2 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 15060.4 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 15162.6 meters

 ***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
300.00	0.3065E-02	8.27	3925.00	0.1521	48.66
325.00	0.3011E-02	8.83	3950.00	0.1525	48.68
350.00	0.2964E-02	9.37	3975.00	0.1529	48.46
375.00	0.2923E-02	9.42	4000.00	0.1533	48.48
400.00	0.2885E-02	9.53	4025.00	0.1537	48.51
425.00	0.2849E-02	9.47	4050.00	0.1541	48.54
450.00	0.2818E-02	10.34	4075.00	0.1544	48.31
475.00	0.2790E-02	11.63	4100.00	0.1548	47.51
500.00	0.2764E-02	12.82	4125.00	0.1551	47.40
525.00	0.2739E-02	13.83	4150.00	0.1554	46.61
550.00	0.2718E-02	15.39	4175.00	0.1557	46.13
575.00	0.2774E-02	15.27	4200.00	0.1560	45.46
600.00	0.3037E-02	14.25	4225.00	0.1562	44.47
625.00	0.3341E-02	15.11	4250.00	0.1565	43.50
650.00	0.3670E-02	15.39	4275.00	0.1567	43.55
675.00	0.4017E-02	13.90	4300.00	0.1570	44.06
700.00	0.4416E-02	14.75	4325.00	0.1572	45.48
725.00	0.4854E-02	15.93	4350.00	0.1575	47.24
750.00	0.5343E-02	18.14	4375.00	0.1577	49.06
775.00	0.5862E-02	19.19	4400.00	0.1579	50.53
800.00	0.6413E-02	19.50	4425.00	0.1581	51.75
825.00	0.7022E-02	20.69	4450.00	0.1583	52.54
850.00	0.7709E-02	23.63	4475.00	0.1585	53.07
875.00	0.8441E-02	25.96	4500.00	0.1587	52.69
900.00	0.9216E-02	27.75	4525.00	0.1588	51.66
925.00	0.1003E-01	29.00	4550.00	0.1589	50.25
950.00	0.1089E-01	29.67	4575.00	0.1590	49.23
975.00	0.1179E-01	30.36	4600.00	0.1592	50.17
1000.00	0.1276E-01	31.25	4625.00	0.1593	50.45
1025.00	0.1379E-01	32.44	4650.00	0.1594	50.72
1050.00	0.1488E-01	33.47	4675.00	0.1595	50.72
1075.00	0.1600E-01	34.01	4700.00	0.1596	51.18
1100.00	0.1716E-01	34.41	4725.00	0.1597	51.42
1125.00	0.1836E-01	34.22	4750.00	0.1597	51.35

1150.00	0.1965E-01	34.88	4775.00	0.1598	50.66
1175.00	0.2096E-01	35.04	4800.00	0.1598	50.39
1200.00	0.2235E-01	35.70	4825.00	0.1599	50.04
1225.00	0.2379E-01	36.28	4850.00	0.1599	49.76
1250.00	0.2524E-01	36.13	4875.00	0.1600	50.32
1275.00	0.2675E-01	36.26	4900.00	0.1600	51.19
1300.00	0.2831E-01	36.55	4925.00	0.1600	51.94
1325.00	0.2994E-01	37.20	4950.00	0.1601	52.90
1350.00	0.3157E-01	37.19	4975.00	0.1601	53.89
1375.00	0.3323E-01	37.02	5000.00	0.1601	55.15
1400.00	0.3493E-01	36.84	5100.00	0.1601	59.33
1425.00	0.3668E-01	36.97	5200.00	0.1599	61.87
1450.00	0.3855E-01	38.61	5300.00	0.1597	61.25
1475.00	0.4041E-01	39.42	5400.00	0.1593	60.63
1500.00	0.4230E-01	40.31	5500.00	0.1589	58.11
1525.00	0.4417E-01	40.41	5600.00	0.1584	54.80
1550.00	0.4602E-01	39.90	5700.00	0.1579	52.18
1575.00	0.4789E-01	39.19	5800.00	0.1572	56.94
1600.00	0.4980E-01	38.96	5900.00	0.1565	64.42
1625.00	0.5173E-01	38.76	6000.00	0.1556	68.88
1650.00	0.5372E-01	39.46	6100.00	0.1548	73.28
1675.00	0.5572E-01	40.02	6200.00	0.1539	51.94
1700.00	0.5769E-01	40.09	6300.00	0.1529	75.82
1725.00	0.5967E-01	40.20	6400.00	0.1520	71.89
1750.00	0.6161E-01	39.51	6500.00	0.1511	68.76
1775.00	0.6353E-01	38.48	6600.00	0.1501	68.64
1800.00	0.6543E-01	37.17	6700.00	0.1491	66.69
1825.00	0.6736E-01	36.35	6800.00	0.1481	63.42
1850.00	0.6930E-01	35.74	6900.00	0.1471	58.63
1875.00	0.7125E-01	35.47	7000.00	0.1461	56.51
1900.00	0.7316E-01	34.62	7100.00	0.1451	56.31
1925.00	0.7504E-01	33.49	7200.00	0.1441	53.49
1950.00	0.7694E-01	32.81	7300.00	0.1430	51.18
1975.00	0.7884E-01	32.51	7400.00	0.1420	50.31
2000.00	0.8073E-01	32.51	7500.00	0.1410	52.82
2025.00	0.8261E-01	32.45	7600.00	0.1399	54.34
2050.00	0.8443E-01	31.72	7700.00	0.1389	58.18
2075.00	0.8622E-01	30.51	7800.00	0.1379	61.07
2100.00	0.8799E-01	29.56	7900.00	0.1368	62.74
2125.00	0.8974E-01	28.44	8000.00	0.1358	65.10
2150.00	0.9152E-01	28.66	8100.00	0.1347	67.15
2175.00	0.9326E-01	28.78	8200.00	0.1337	67.90
2200.00	0.9497E-01	28.60	8300.00	0.1327	67.53
2225.00	0.9668E-01	29.19	8400.00	0.1317	68.70
2250.00	0.9834E-01	29.30	8500.00	0.1314	70.63
2275.00	0.1000	29.62	8600.00	0.1324	69.99
2300.00	0.1016	30.28	8700.00	0.1332	69.13
2325.00	0.1032	30.24	8800.00	0.1340	69.74
2350.00	0.1047	28.65	8900.00	0.1347	70.74
2375.00	0.1061	26.28	9000.00	0.1352	68.58

2400.00	0.1076	26.55	9100.00	0.1357	67.51
2425.00	0.1090	27.17	9200.00	0.1362	65.65
2450.00	0.1105	28.88	9300.00	0.1366	63.51
2475.00	0.1120	31.46	9400.00	0.1369	64.16
2500.00	0.1134	33.70	9500.00	0.1372	63.84
2525.00	0.1148	35.54	9600.00	0.1374	62.10
2550.00	0.1161	36.61	9700.00	0.1376	61.61
2575.00	0.1174	37.46	9800.00	0.1378	73.70
2600.00	0.1186	38.37	9900.00	0.1379	82.42
2625.00	0.1198	39.70	10000.00	0.1379	74.85
2650.00	0.1211	41.31	10100.00	0.1379	72.83
2675.00	0.1222	42.60	10200.00	0.1379	84.00
2700.00	0.1234	43.60	10300.00	0.1379	84.70
2725.00	0.1245	44.71	10400.00	0.1377	74.23
2750.00	0.1255	46.55	10500.00	0.1376	85.71
2775.00	0.1266	48.03	10600.00	0.1375	94.39
2800.00	0.1276	49.45	10700.00	0.1372	83.58
2825.00	0.1286	50.57	10800.00	0.1370	91.94
2850.00	0.1295	50.75	10900.00	0.1367	82.98
2875.00	0.1304	51.63	11000.00	0.1363	58.96
2900.00	0.1313	52.22	11100.00	0.1360	52.42
2925.00	0.1321	52.37	11200.00	0.1357	61.10
2950.00	0.1329	52.52	11300.00	0.1353	69.40
2975.00	0.1337	52.62	11400.00	0.1349	62.34
3000.00	0.1345	53.15	11500.00	0.1345	53.88
3025.00	0.1352	53.51	11600.00	0.1341	55.70
3050.00	0.1359	53.58	11700.00	0.1337	41.81
3075.00	0.1366	53.60	11800.00	0.1332	41.48
3100.00	0.1372	53.10	11900.00	0.1328	44.94
3125.00	0.1378	52.23	12000.00	0.1323	43.42
3150.00	0.1384	51.24	12100.00	0.1318	36.50
3175.00	0.1389	50.22	12200.00	0.1313	33.42
3200.00	0.1394	48.82	12300.00	0.1308	26.83
3225.00	0.1399	46.88	12400.00	0.1303	27.06
3250.00	0.1404	44.59	12500.00	0.1297	14.46
3275.00	0.1408	41.87	12600.00	0.1291	14.51
3300.00	0.1413	39.44	12700.00	0.1285	14.51
3325.00	0.1417	39.30	12800.00	0.1279	2.35
3350.00	0.1422	39.51	12900.00	0.1272	9.10
3375.00	0.1426	39.51	13000.00	0.1265	8.92
3400.00	0.1430	39.51	13100.00	0.1258	3.84
3425.00	0.1434	39.51	13200.00	0.1250	-0.94
3450.00	0.1438	39.51	13300.00	0.1244	4.48
3475.00	0.1441	39.50	13400.00	0.1234	-3.63
3500.00	0.1445	39.43	13500.00	0.1230	4.25
3525.00	0.1448	40.26	13600.00	0.1223	5.04
3550.00	0.1451	40.68	13700.00	0.1216	5.03
3575.00	0.1454	41.04	13800.00	0.1209	4.27
3600.00	0.1457	41.61	13900.00	0.1203	5.03
3625.00	0.1460	42.46	14000.00	0.1196	2.67

3650.00	0.1463	42.51	14100.00	0.1189	4.53
3675.00	0.1469	42.51	14200.00	0.1182	7.68
3700.00	0.1475	42.14	14300.00	0.1176	3.33
3725.00	0.1480	42.00	14400.00	0.1169	5.69
3750.00	0.1486	44.07	14500.00	0.1163	2.73
3775.00	0.1492	46.59	14600.00	0.1156	1.97
3800.00	0.1497	48.52	14700.00	0.1150	8.54
3825.00	0.1503	49.44	14800.00	0.1143	5.65
3850.00	0.1508	50.36	14900.00	0.1137	4.35
3875.00	0.1512	50.04	15000.00	0.1131	2.23
3900.00	0.1517	49.28			

 ***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	0.1601	0.1601	0.1441	0.9605E-01	0.1601E-01

DISTANCE FROM SOURCE 5025.00 meters directed toward 330 degrees
 RECEPTOR HEIGHT 56.34 meters

IMPACT AT THE
 AMBIENT BOUNDARY 0.3065E-02 0.3065E-02 0.2758E-02 0.1839E-02 0.3065E-03

DISTANCE FROM SOURCE 300.00 meters directed toward 290 degrees
 RECEPTOR HEIGHT 8.27 meters

10/20/25
23:19:17

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***** STACK PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

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***** FLOW SECTOR ANALYSIS *****
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25 meter receptor spacing: 339. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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TEMPORAL PERIOD	FLOW SECTOR	BUILD WIDTH	BUILD LENGTH	XBADJ	YBADJ	MAXIMUM	IMPACT	RECEPTOR	
						1-HR CONC (ug/m3)	DIST (m)	HEIGHT (m)	
10		107.16	66.61	-33.30	0.00	57.00	339.0	4.60	ANN
20		111.07	81.19	-40.59	0.00	54.89	339.0	3.94	ANN
30		111.60	93.30	-46.65	0.00	57.84	339.0	4.57	ANN
40		108.74	102.58	-51.29	0.00	57.37	339.0	3.63	ANN
50		102.58	108.74	-54.37	0.00	57.06	339.0	3.06	ANN
60		93.30	111.60	-55.80	0.00	56.84	339.0	2.46	ANN
70		81.19	111.07	-55.54	0.00	56.82	339.0	1.78	ANN
80		66.61	107.16	-53.58	0.00	52.47	339.0	-0.53	ANN
90		50.00	100.00	-50.00	0.00	50.36	339.0	-3.02	ANN
100		66.61	107.16	-53.58	0.00	52.65	339.0	-0.35	ANN
110		81.19	111.07	-55.54	0.00	56.91	339.0	5.26	ANN
120		93.30	111.60	-55.80	0.00	56.91	339.0	5.48	ANN
130		102.58	108.74	-54.37	0.00	57.14	339.0	6.12	ANN
140		108.74	102.58	-51.29	0.00	57.56	339.0	8.28	ANN
150		111.60	93.30	-46.65	0.00	58.11	339.0	8.53	ANN
160		111.07	81.19	-40.59	0.00	54.86	339.0	3.06	ANN
170		107.16	66.61	-33.30	0.00	56.87	339.0	1.93	ANN
180		100.00	50.00	-25.00	0.00	59.69	339.0	0.31	ANN
190		107.16	66.61	-33.30	0.00	54.94	339.0	-1.62	ANN
200		111.07	81.19	-40.59	0.00	54.43	339.0	-0.39	ANN
210		111.60	93.30	-46.65	0.00	57.79	339.0	3.27	ANN
220		108.74	102.58	-51.29	0.00	57.50	339.0	7.16	ANN
230		102.58	108.74	-54.37	0.00	57.34	339.0	10.79	ANN
240		93.30	111.60	-55.80	0.00	57.33	339.0	14.11	ANN
250		81.19	111.07	-55.54	0.00	57.26	339.0	11.37	ANN
260		66.61	107.16	-53.58	0.00	53.06	339.0	3.50	ANN
270		50.00	100.00	-50.00	0.00	50.44	339.0	-2.95	ANN
280		66.61	107.16	-53.58	0.00	50.51	339.0	-2.53	ANN
290		81.19	111.07	-55.54	0.00	54.65	339.0	-2.18	ANN
300		93.30	111.60	-55.80	0.00	56.83	339.0	1.71	ANN
310		102.58	108.74	-54.37	0.00	57.05	339.0	2.24	ANN
320		108.74	102.58	-51.29	0.00	57.34	339.0	2.26	ANN
330		111.60	93.30	-46.65	0.00	57.74	339.0	1.08	ANN
340		111.07	81.19	-40.59	0.00	54.40	339.0	-0.42	ANN
350		107.16	66.61	-33.30	0.00	56.85	339.0	1.17	ANN
360*		100.00	50.00	-25.00	0.00	60.03	339.0	4.91	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.10

BOWEN RATIO: 0.10

ROUGHNESS LENGTH: 0.001 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-4.53	0.078	-9.000	0.020	-999.	249.	9.9	0.001	0.10	0.10	2.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 3.4 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 31.2 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 51.2 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 04 26 26 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-4.53	0.078	-9.000	0.020	-999.	249.	9.9	0.001	0.10	0.10	2.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 3.4 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 31.2 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 51.2 meters

***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
339.00	60.03	4.91	3925.00	19.27	49.03
350.00	59.21	5.05	3950.00	18.95	48.78
375.00	57.40	5.37	3975.00	18.60	48.51
400.00	55.66	5.76	4000.00	18.49	48.49
425.00	54.27	6.29	4025.00	18.40	48.49
450.00	53.13	7.13	4050.00	18.44	48.63
475.00	52.11	8.20	4075.00	18.83	49.16
500.00	51.14	9.28	4100.00	19.02	49.50
525.00	50.23	10.37	4125.00	18.92	49.49
550.00	49.30	11.17	4150.00	18.97	49.66
575.00	48.27	11.44	4175.00	19.08	49.93
600.00	47.14	11.16	4200.00	18.94	49.86
625.00	45.94	10.35	4225.00	18.55	49.47
650.00	44.72	9.16	4250.00	18.05	48.97
675.00	43.69	8.60	4275.00	17.38	48.31
700.00	42.79	8.48	4300.00	17.12	48.12
725.00	41.96	8.58	4325.00	16.80	47.71
750.00	41.24	9.04	4350.00	16.64	47.47
775.00	40.67	10.16	4375.00	16.55	47.48
800.00	39.95	10.36	4400.00	16.44	47.39
825.00	39.20	10.38	4425.00	16.30	47.22
850.00	38.58	15.00	4450.00	16.09	46.90
875.00	37.96	15.85	4475.00	15.91	46.67
900.00	37.39	17.23	4500.00	15.68	46.34
925.00	36.83	18.90	4525.00	15.14	45.46
950.00	36.27	20.90	4550.00	14.87	45.13
975.00	35.69	23.00	4575.00	15.10	45.66
1000.00	35.05	24.93	4600.00	15.68	47.06

1025.00	34.38	26.47	4625.00	15.81	47.72
1050.00	33.67	27.62	4650.00	15.92	47.94
1075.00	32.93	27.98	4675.00	15.68	47.75
1100.00	32.14	27.70	4700.00	15.52	47.52
1125.00	31.39	26.21	4725.00	15.67	47.89
1150.00	30.84	27.15	4750.00	16.01	48.36
1175.00	30.30	28.12	4775.00	16.38	48.92
1200.00	29.77	29.02	4800.00	16.91	49.75
1225.00	29.25	29.97	4825.00	17.49	50.81
1250.00	28.76	30.92	4850.00	17.70	51.38
1275.00	28.26	31.64	4875.00	17.67	51.49
1300.00	27.65	31.33	4900.00	17.60	51.49
1325.00	27.15	31.87	4925.00	17.54	51.53
1350.00	26.75	32.73	4950.00	17.65	51.97
1375.00	26.46	33.91	4975.00	17.81	52.66
1400.00	26.43	35.70	5000.00	17.89	53.29
1425.00	26.45	37.18	5100.00	17.69	55.50
1450.00	26.25	37.76	5200.00	17.20	56.66
1475.00	25.81	37.69	5300.00	17.10	55.76
1500.00	25.22	37.28	5400.00	16.83	55.80
1525.00	24.66	36.96	5500.00	16.62	55.25
1550.00	24.41	37.28	5600.00	16.20	53.03
1575.00	24.20	37.62	5700.00	16.05	55.98
1600.00	24.08	38.08	5800.00	15.89	54.31
1625.00	24.05	38.61	5900.00	15.66	55.15
1650.00	24.05	39.12	6000.00	15.42	55.49
1675.00	24.27	39.89	6100.00	15.12	56.21
1700.00	24.33	40.36	6200.00	14.29	58.52
1725.00	24.10	40.41	6300.00	16.07	67.64
1750.00	23.24	39.66	6400.00	14.72	64.80
1775.00	22.26	38.80	6500.00	13.79	58.35
1800.00	21.15	37.81	6600.00	14.19	55.69
1825.00	19.64	36.31	6700.00	14.04	54.47
1850.00	18.68	35.49	6800.00	13.53	52.23
1875.00	17.56	34.43	6900.00	13.00	51.07
1900.00	16.97	34.11	7000.00	12.00	49.13
1925.00	16.30	33.67	7100.00	12.43	49.89
1950.00	15.86	33.56	7200.00	12.80	51.95
1975.00	15.34	33.34	7300.00	13.01	54.21
2000.00	14.90	33.22	7400.00	13.51	49.20
2025.00	14.33	32.89	7500.00	14.12	54.34
2050.00	13.73	32.50	7600.00	11.74	59.40
2075.00	13.02	31.92	7700.00	11.02	61.60
2100.00	12.37	31.38	7800.00	11.88	63.94
2125.00	12.00	31.34	7900.00	11.91	64.39
2150.00	11.40	30.86	8000.00	11.63	64.02
2175.00	10.69	30.10	8100.00	11.35	63.67
2200.00	10.24	0.02	8200.00	11.52	64.48
2225.00	10.16	0.06	8300.00	11.27	64.17
2250.00	10.08	1.26	8400.00	10.68	62.95

2275.00	10.00	1.45	8500.00	10.23	60.67
2300.00	9.924	1.45	8600.00	10.67	59.00
2325.00	9.849	1.22	8700.00	9.956	60.91
2350.00	9.776	0.21	8800.00	10.69	64.31
2375.00	9.702	0.87	8900.00	11.14	66.18
2400.00	9.630	0.14	9000.00	11.81	70.18
2425.00	9.559	0.52	9100.00	11.40	68.36
2450.00	9.488	0.75	9200.00	11.67	71.56
2475.00	9.417	1.37	9300.00	11.55	71.75
2500.00	9.351	0.38	9400.00	11.44	72.10
2525.00	9.283	0.71	9500.00	11.32	72.47
2550.00	9.217	0.52	9600.00	14.23	70.33
2575.00	9.152	0.63	9700.00	14.34	69.15
2600.00	9.086	0.89	9800.00	13.84	71.12
2625.00	9.022	1.30	9900.00	11.53	72.92
2650.00	8.958	1.79	10000.00	13.48	70.04
2675.00	8.896	2.11	10100.00	12.95	67.21
2700.00	8.839	0.34	10200.00	11.93	64.35
2725.00	8.775	1.98	10300.00	14.07	59.57
2750.00	8.720	0.27	10400.00	15.18	54.49
2775.00	8.661	0.61	10500.00	13.77	49.86
2800.00	8.601	1.46	10600.00	13.70	67.25
2825.00	8.544	2.04	10700.00	12.95	73.43
2850.00	8.491	0.24	10800.00	16.92	52.49
2875.00	8.436	0.11	10900.00	15.93	50.82
2900.00	8.382	0.52	11000.00	15.96	56.44
2925.00	8.328	0.17	11100.00	11.76	67.75
2950.00	8.275	0.33	11200.00	11.46	69.04
2975.00	8.220	1.44	11300.00	13.25	62.65
3000.00	8.168	1.57	11400.00	11.47	76.08
3025.00	8.117	1.65	11500.00	9.166	85.22
3050.00	9.537	36.31	11600.00	8.551	66.72
3075.00	11.05	37.57	11700.00	8.667	67.86
3100.00	12.26	38.55	11800.00	8.847	69.93
3125.00	13.69	39.67	11900.00	8.328	54.82
3150.00	15.19	40.85	12000.00	8.088	57.92
3175.00	16.37	41.82	12100.00	8.194	54.69
3200.00	18.41	43.60	12200.00	8.322	66.04
3225.00	19.64	44.92	12300.00	10.85	60.73
3250.00	20.35	45.91	12400.00	11.94	57.25
3275.00	20.80	46.77	12500.00	12.14	46.01
3300.00	20.71	46.82	12600.00	14.21	58.27
3325.00	20.80	47.22	12700.00	12.00	71.20
3350.00	20.79	47.46	12800.00	9.403	80.75
3375.00	20.57	47.24	12900.00	10.22	74.77
3400.00	20.58	47.54	13000.00	9.980	61.64
3425.00	20.53	47.70	13100.00	7.969	71.51
3450.00	20.38	47.62	13200.00	8.415	79.54
3475.00	19.87	46.80	13300.00	8.258	55.50
3500.00	20.03	47.32	13400.00	13.92	56.47

3525.00	20.20	48.10	13500.00	13.55	57.47
3550.00	20.43	48.67	13600.00	12.31	60.28
3575.00	20.54	48.88	13700.00	10.94	68.42
3600.00	19.89	48.28	13800.00	9.333	76.02
3625.00	19.52	47.48	13900.00	7.368	75.83
3650.00	19.25	47.11	14000.00	10.00	49.09
3675.00	18.40	45.82	14100.00	10.11	49.01
3700.00	17.46	44.73	14200.00	10.79	52.85
3725.00	17.27	44.62	14300.00	7.936	78.34
3750.00	18.33	46.20	14400.00	10.65	62.79
3775.00	18.55	46.78	14500.00	10.27	61.49
3800.00	18.59	47.09	14600.00	7.733	66.19
3825.00	18.72	47.69	14700.00	9.103	62.59
3850.00	18.76	48.17	14800.00	6.920	74.40
3875.00	18.86	48.40	14900.00	7.446	61.96
3900.00	19.01	48.65	15000.00	6.855	79.35

 ***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	60.03	60.03	54.03	36.02	6.003

DISTANCE FROM SOURCE 339.00 meters directed toward 360 degrees
 RECEPTOR HEIGHT 4.91 meters

IMPACT AT THE
 AMBIENT BOUNDARY 60.03 60.03 54.03 36.02 6.003

DISTANCE FROM SOURCE 339.00 meters directed toward 360 degrees
 RECEPTOR HEIGHT 4.91 meters

10/20/25
21:08:44

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***** STACK PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

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***** FLOW SECTOR ANALYSIS *****
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25 meter receptor spacing: 268. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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TEMPORAL PERIOD	FLOW SECTOR	BUILD WIDTH	BUILD LENGTH	XBADJ	YBADJ	MAXIMUM	IMPACT	RECEPTOR	
						1-HR CONC (ug/m3)	DIST (m)	HEIGHT (m)	
10		107.16	66.61	-33.30	0.00	75.33	268.0	3.35	ANN
20		111.07	81.19	-40.59	0.00	73.00	268.0	2.72	ANN
30		111.60	93.30	-46.65	0.00	71.37	268.0	1.38	ANN
40		108.74	102.58	-51.29	0.00	69.61	268.0	-0.34	ANN
50		102.58	108.74	-54.37	0.00	65.99	268.0	-2.49	ANN
60		93.30	111.60	-55.80	0.00	63.21	268.0	-4.64	ANN
70		81.19	111.07	-55.54	0.00	61.41	268.0	-6.10	ANN
80		66.61	107.16	-53.58	0.00	61.40	268.0	-6.63	ANN
90		50.00	100.00	-50.00	0.00	62.55	268.0	-5.48	ANN
100		66.61	107.16	-53.58	0.00	65.45	268.0	-3.29	ANN
110		81.19	111.07	-55.54	0.00	66.43	268.0	-1.95	ANN
120		93.30	111.60	-55.80	0.00	68.02	268.0	-0.78	ANN
130		102.58	108.74	-54.37	0.00	67.70	268.0	-1.15	ANN
140		108.74	102.58	-51.29	0.00	68.50	268.0	-1.17	ANN
150		111.60	93.30	-46.65	0.00	70.42	268.0	-0.65	ANN
160		111.07	81.19	-40.59	0.00	72.01	268.0	-0.56	ANN
170		107.16	66.61	-33.30	0.00	75.11	268.0	0.57	ANN
180		100.00	50.00	-25.00	0.00	72.87	268.0	2.22	ANN
190		107.16	66.61	-33.30	0.00	75.33	268.0	3.31	ANN
200		111.07	81.19	-40.59	0.00	73.19	268.0	4.88	ANN
210		111.60	93.30	-46.65	0.00	71.70	268.0	7.15	ANN
220		108.74	102.58	-51.29	0.00	70.55	268.0	10.68	ANN
230		102.58	108.74	-54.37	0.00	69.87	268.0	13.24	ANN
240		93.30	111.60	-55.80	0.00	70.02	268.0	15.84	ANN
250		81.19	111.07	-55.54	0.00	70.61	268.0	17.49	ANN
260		66.61	107.16	-53.58	0.00	72.42	268.0	16.37	ANN
270		50.00	100.00	-50.00	0.00	73.09	268.0	12.18	ANN
280		66.61	107.16	-53.58	0.00	70.99	268.0	9.38	ANN
290		81.19	111.07	-55.54	0.00	69.52	268.0	8.95	ANN
300		93.30	111.60	-55.80	0.00	69.36	268.0	8.58	ANN
310		102.58	108.74	-54.37	0.00	69.47	268.0	8.17	ANN
320		108.74	102.58	-51.29	0.00	70.37	268.0	8.37	ANN
330		111.60	93.30	-46.65	0.00	71.80	268.0	8.16	ANN
340		111.07	81.19	-40.59	0.00	73.43	268.0	6.68	ANN
350*		107.16	66.61	-33.30	0.00	75.54	268.0	4.63	ANN
360		100.00	50.00	-25.00	0.00	73.10	268.0	4.07	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.10

BOWEN RATIO: 0.10

ROUGHNESS LENGTH: 0.001 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 03 25 25 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-2.60	0.059	-9.000	0.020	-999.	333.	7.7	0.001	0.10	0.10	1.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 2.8 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 29.6 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 49.6 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 03 25 25 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-2.60	0.059	-9.000	0.020	-999.	333.	7.7	0.001	0.10	0.10	1.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 2.8 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 29.6 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 49.6 meters

***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
268.00	75.54	4.63	3900.00	21.68	44.57
275.00	75.27	4.72	3925.00	22.18	45.07
300.00	73.95	5.02	3950.00	22.53	45.49
325.00	72.46	5.60	3975.00	22.90	45.96
350.00	70.34	5.74	4000.00	23.09	46.29
375.00	68.23	5.57	4025.00	23.02	46.35
400.00	66.25	5.53	4050.00	22.93	46.37
425.00	64.40	5.69	4075.00	22.71	46.25
450.00	62.60	5.50	4100.00	21.83	45.45
475.00	60.99	6.01	4125.00	22.48	46.24
500.00	59.56	4.33	4150.00	22.22	46.08
525.00	58.23	4.35	4175.00	21.66	45.60
550.00	56.94	4.35	4200.00	20.69	44.79
575.00	55.71	4.35	4225.00	20.05	44.33
600.00	54.53	4.35	4250.00	20.13	44.48
625.00	53.41	4.55	4275.00	20.67	45.04
650.00	52.35	5.02	4300.00	20.84	45.30
675.00	51.37	5.74	4325.00	21.32	45.91
700.00	50.44	6.58	4350.00	21.62	46.39
725.00	49.55	7.36	4375.00	21.64	46.54
750.00	48.61	7.34	4400.00	21.79	46.89
775.00	47.65	6.69	4425.00	21.86	47.15
800.00	46.75	6.36	4450.00	21.96	47.50
825.00	45.87	6.18	4475.00	22.04	47.86
850.00	44.95	5.63	4500.00	22.14	48.35
875.00	44.06	5.41	4525.00	22.04	48.38
900.00	43.10	4.45	4550.00	22.04	48.72
925.00	42.21	11.42	4575.00	22.01	49.08

950.00	41.55	12.27	4600.00	21.94	49.27
975.00	40.87	12.89	4625.00	21.86	49.41
1000.00	40.19	13.61	4650.00	21.77	49.59
1025.00	39.50	14.22	4675.00	21.68	49.85
1050.00	38.82	15.13	4700.00	21.57	50.22
1075.00	38.12	15.94	4725.00	21.34	50.99
1100.00	37.42	16.66	4750.00	21.38	49.66
1125.00	36.72	17.49	4775.00	21.24	50.51
1150.00	35.99	17.78	4800.00	21.03	51.10
1175.00	35.26	18.16	4825.00	20.85	51.39
1200.00	34.53	18.54	4850.00	20.78	51.32
1225.00	33.90	30.83	4875.00	20.77	51.04
1250.00	33.65	33.92	4900.00	20.78	50.54
1275.00	33.53	36.09	4925.00	20.71	50.34
1300.00	33.38	37.37	4950.00	20.61	50.39
1325.00	33.01	37.52	4975.00	20.43	50.95
1350.00	32.28	36.52	5000.00	20.24	51.34
1375.00	31.85	36.54	5100.00	19.52	52.36
1400.00	31.59	36.92	5200.00	19.67	50.94
1425.00	31.61	37.83	5300.00	18.97	52.16
1450.00	31.60	38.99	5400.00	19.08	50.69
1475.00	31.29	38.94	5500.00	18.99	58.45
1500.00	30.92	38.79	5600.00	20.81	62.51
1525.00	30.82	39.10	5700.00	20.71	63.32
1550.00	30.76	39.42	5800.00	20.39	63.38
1575.00	30.91	40.06	5900.00	18.19	59.07
1600.00	30.91	40.40	6000.00	17.29	51.33
1625.00	30.70	40.38	6100.00	17.20	49.87
1650.00	30.66	40.61	6200.00	19.08	63.09
1675.00	30.52	40.67	6300.00	18.39	69.54
1700.00	31.18	41.98	6400.00	16.72	73.35
1725.00	31.66	43.29	6500.00	14.42	55.57
1750.00	31.76	43.93	6600.00	15.09	53.62
1775.00	31.77	44.39	6700.00	15.73	51.09
1800.00	31.66	44.26	6800.00	15.33	74.56
1825.00	31.56	44.19	6900.00	15.89	72.42
1850.00	31.43	44.01	7000.00	15.80	71.92
1875.00	31.45	44.44	7100.00	16.36	69.76
1900.00	31.38	44.52	7200.00	16.82	66.19
1925.00	31.34	44.86	7300.00	15.99	61.89
1950.00	31.27	45.01	7400.00	15.24	60.35
1975.00	31.35	45.63	7500.00	14.77	59.71
2000.00	31.89	46.27	7600.00	13.66	57.76
2025.00	31.68	46.09	7700.00	15.50	63.23
2050.00	31.13	45.60	7800.00	15.53	65.08
2075.00	30.74	44.48	7900.00	15.12	68.26
2100.00	30.15	43.32	8000.00	14.65	69.48
2125.00	29.48	42.52	8100.00	14.22	70.32
2150.00	28.44	41.52	8200.00	13.68	71.37
2175.00	27.14	40.51	8300.00	13.33	72.33

2200.00	25.73	39.56	8400.00	12.66	74.27
2225.00	24.17	38.60	8500.00	12.88	72.98
2250.00	22.66	37.73	8600.00	12.64	73.36
2275.00	22.14	37.52	8700.00	12.21	74.36
2300.00	21.12	37.00	8800.00	12.13	74.17
2325.00	20.34	36.64	8900.00	12.40	72.55
2350.00	18.54	35.63	9000.00	12.18	72.93
2375.00	16.43	34.38	9100.00	11.69	74.34
2400.00	15.87	34.21	9200.00	11.33	75.08
2425.00	16.15	34.54	9300.00	11.46	74.27
2450.00	16.89	35.15	9400.00	11.52	51.17
2475.00	17.68	35.76	9500.00	11.39	51.38
2500.00	18.34	36.27	9600.00	11.35	50.05
2525.00	17.74	36.02	9700.00	11.24	50.20
2550.00	15.88	35.00	9800.00	11.41	53.03
2575.00	11.72	32.28	9900.00	9.915	55.41
2600.00	10.45	-0.05	10000.00	12.28	60.49
2625.00	10.38	3.33	10100.00	14.42	69.50
2650.00	10.31	0.15	10200.00	20.52	50.96
2675.00	10.24	1.19	10300.00	16.42	63.75
2700.00	10.16	2.23	10400.00	18.28	44.44
2725.00	10.09	2.70	10500.00	16.18	42.45
2750.00	10.03	0.36	10600.00	14.49	41.03
2775.00	9.962	0.83	10700.00	19.36	46.98
2800.00	9.893	2.23	10800.00	16.12	64.14
2825.00	11.58	33.39	10900.00	14.87	58.51
2850.00	14.74	35.45	11000.00	13.09	69.90
2875.00	17.54	37.15	11100.00	15.70	64.48
2900.00	19.69	38.48	11200.00	15.28	57.92
2925.00	21.61	39.75	11300.00	16.10	56.21
2950.00	23.36	41.08	11400.00	16.40	55.15
2975.00	24.47	42.15	11500.00	17.94	52.28
3000.00	25.32	43.29	11600.00	15.85	55.87
3025.00	25.80	44.44	11700.00	13.21	70.06
3050.00	27.07	45.46	11800.00	9.912	63.67
3075.00	28.08	46.45	11900.00	9.879	64.36
3100.00	28.82	47.45	12000.00	10.36	66.81
3125.00	29.27	48.47	12100.00	9.756	66.39
3150.00	29.30	49.00	12200.00	10.07	72.38
3175.00	29.25	49.63	12300.00	16.97	50.67
3200.00	29.03	50.45	12400.00	16.65	51.52
3225.00	28.47	51.54	12500.00	15.09	54.99
3250.00	27.42	52.81	12600.00	12.94	66.76
3275.00	26.10	53.97	12700.00	9.812	75.57
3300.00	25.20	54.68	12800.00	9.120	67.35
3325.00	25.57	55.45	12900.00	9.053	66.98
3350.00	26.31	56.12	13000.00	8.986	66.34
3375.00	26.47	56.36	13100.00	8.761	68.91
3400.00	26.41	56.44	13200.00	9.166	54.53
3425.00	26.21	56.41	13300.00	12.27	52.18

3450.00	25.85	56.25	13400.00	11.86	52.51
3475.00	24.95	55.67	13500.00	11.30	63.25
3500.00	24.03	54.94	13600.00	9.983	65.99
3525.00	24.70	54.10	13700.00	9.580	67.18
3550.00	25.22	53.48	13800.00	10.18	71.52
3575.00	26.02	52.38	13900.00	11.28	67.35
3600.00	26.68	50.78	14000.00	9.643	47.93
3625.00	26.61	49.05	14100.00	8.372	52.51
3650.00	25.76	47.46	14200.00	10.25	53.24
3675.00	23.63	45.31	14300.00	10.85	51.25
3700.00	21.38	43.34	14400.00	7.955	65.58
3725.00	21.26	43.35	14500.00	7.792	63.68
3750.00	21.14	43.35	14600.00	7.823	66.94
3775.00	21.00	43.33	14700.00	7.755	67.11
3800.00	20.93	43.43	14800.00	10.30	67.29
3825.00	20.93	43.66	14900.00	8.014	70.12
3850.00	20.87	43.79	15000.00	8.543	68.32
3875.00	21.25	44.15			

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	75.54	75.54	67.98	45.32	7.554

DISTANCE FROM SOURCE 268.00 meters directed toward 350 degrees
 RECEPTOR HEIGHT 4.63 meters

IMPACT AT THE AMBIENT BOUNDARY	75.54	75.54	67.98	45.32	7.554
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DISTANCE FROM SOURCE 268.00 meters directed toward 350 degrees
 RECEPTOR HEIGHT 4.63 meters

10/20/25
21:00:02

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***** STACK PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

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***** FLOW SECTOR ANALYSIS *****
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25 meter receptor spacing: 285. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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TEMPORAL PERIOD	FLOW SECTOR	BUILD WIDTH	BUILD LENGTH	XBADJ	YBADJ	MAXIMUM	IMPACT	RECEPTOR	
						1-HR CONC (ug/m3)	DIST (m)	HEIGHT (m)	
10		107.16	66.61	-33.30	0.00	434.7	285.0	1.32	ANN
20		111.07	81.19	-40.59	0.00	427.3	285.0	0.86	ANN
30		111.60	93.30	-46.65	0.00	409.5	285.0	-0.66	ANN
40		108.74	102.58	-51.29	0.00	394.9	285.0	-2.16	ANN
50		102.58	108.74	-54.37	0.00	373.1	285.0	-4.43	ANN
60		93.30	111.60	-55.80	0.00	356.2	285.0	-6.72	ANN
70		81.19	111.07	-55.54	0.00	343.5	285.0	-8.35	ANN
80		66.61	107.16	-53.58	0.00	338.5	285.0	-8.40	ANN
90		50.00	100.00	-50.00	0.00	346.6	285.0	-6.73	ANN
100		66.61	107.16	-53.58	0.00	359.0	285.0	-4.51	ANN
110		81.19	111.07	-55.54	0.00	367.8	285.0	-3.58	ANN
120		93.30	111.60	-55.80	0.00	373.1	285.0	-3.34	ANN
130		102.58	108.74	-54.37	0.00	374.1	285.0	-4.22	ANN
140		108.74	102.58	-51.29	0.00	389.5	285.0	-3.32	ANN
150		111.60	93.30	-46.65	0.00	399.0	285.0	-3.02	ANN
160		111.07	81.19	-40.59	0.00	414.6	285.0	-2.74	ANN
170		107.16	66.61	-33.30	0.00	427.1	285.0	-1.53	ANN
180		100.00	50.00	-25.00	0.00	435.9	285.0	-0.66	ANN
190		107.16	66.61	-33.30	0.00	434.9	285.0	0.29	ANN
200		111.07	81.19	-40.59	0.00	426.9	285.0	2.05	ANN
210		111.60	93.30	-46.65	0.00	409.9	285.0	4.65	ANN
220		108.74	102.58	-51.29	0.00	396.9	285.0	8.06	ANN
230		102.58	108.74	-54.37	0.00	377.2	285.0	12.82	ANN
240		93.30	111.60	-55.80	0.00	365.0	285.0	15.85	ANN
250		81.19	111.07	-55.54	0.00	358.9	285.0	17.19	ANN
260		66.61	107.16	-53.58	0.00	362.6	285.0	15.04	ANN
270		50.00	100.00	-50.00	0.00	373.5	285.0	11.54	ANN
280		66.61	107.16	-53.58	0.00	374.5	285.0	8.49	ANN
290		81.19	111.07	-55.54	0.00	377.9	285.0	7.76	ANN
300		93.30	111.60	-55.80	0.00	381.3	285.0	7.80	ANN
310		102.58	108.74	-54.37	0.00	387.9	285.0	6.71	ANN
320		108.74	102.58	-51.29	0.00	399.3	285.0	6.40	ANN
330		111.60	93.30	-46.65	0.00	408.1	285.0	6.36	ANN
340		111.07	81.19	-40.59	0.00	424.2	285.0	5.63	ANN
350		107.16	66.61	-33.30	0.00	433.9	285.0	3.44	ANN
360*		100.00	50.00	-25.00	0.00	439.5	285.0	2.36	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.10

BOWEN RATIO: 0.10

ROUGHNESS LENGTH: 0.001 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 01 16 16 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-0.09	0.020	-9.000	0.020	-999.	6.	8.0	0.001	0.10	0.10	0.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 0.5 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 15.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 20.0 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 35.0 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 01 16 16 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-0.09	0.020	-9.000	0.020	-999.	6.	8.0	0.001	0.10	0.10	0.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 0.5 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 15.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 20.0 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 35.0 meters

***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
285.00	439.5	2.36	3900.00	61.47	30.29
300.00	423.2	2.36	3925.00	61.38	31.03
325.00	398.3	2.35	3950.00	60.65	31.80
350.00	379.7	2.35	3975.00	62.63	19.98
375.00	363.5	2.34	4000.00	83.97	22.02
400.00	348.8	2.34	4025.00	92.28	23.25
425.00	335.5	2.33	4050.00	93.28	23.61
450.00	323.4	0.49	4075.00	90.19	23.10
475.00	312.9	0.62	4100.00	89.45	23.08
500.00	303.0	1.07	4125.00	89.99	23.30
525.00	294.0	0.42	4150.00	84.68	22.53
550.00	284.9	1.05	4175.00	82.00	22.25
575.00	275.7	1.30	4200.00	83.54	22.53
600.00	266.5	1.17	4225.00	88.89	23.62
625.00	257.2	1.04	4250.00	89.33	25.24
650.00	247.9	0.74	4275.00	89.59	26.82
675.00	238.5	0.65	4300.00	89.15	27.04
700.00	229.1	0.92	4325.00	84.61	25.92
725.00	219.8	1.32	4350.00	87.67	24.76
750.00	210.8	0.16	4375.00	86.84	24.22
775.00	202.4	0.21	4400.00	83.15	23.22
800.00	192.6	-0.97	4425.00	77.30	22.32
825.00	185.7	0.16	4450.00	62.79	20.65
850.00	177.2	1.88	4475.00	53.44	31.75
875.00	168.5	3.98	4500.00	53.00	32.38
900.00	159.7	5.87	4525.00	52.69	30.36
925.00	152.6	0.51	4550.00	52.20	30.14
950.00	149.3	1.90	4575.00	51.99	30.24

975.00	146.6	1.18	4600.00	52.06	30.99
1000.00	143.9	0.95	4625.00	51.53	31.94
1025.00	141.1	1.33	4650.00	50.86	33.29
1050.00	138.2	1.59	4675.00	48.37	34.75
1075.00	135.5	2.45	4700.00	48.15	26.59
1100.00	132.8	3.38	4725.00	48.78	29.09
1125.00	130.0	4.18	4750.00	50.23	30.68
1150.00	127.5	4.08	4775.00	49.87	30.52
1175.00	159.7	24.85	4800.00	49.70	30.75
1200.00	200.2	28.25	4825.00	49.51	31.08
1225.00	196.9	31.10	4850.00	49.07	30.56
1250.00	157.9	28.00	4875.00	48.94	31.57
1275.00	163.9	30.23	4900.00	48.98	27.21
1300.00	160.2	31.24	4925.00	51.42	29.04
1325.00	155.1	31.94	4950.00	48.16	31.57
1350.00	150.2	32.42	4975.00	47.70	32.89
1375.00	143.7	33.31	5000.00	47.50	32.73
1400.00	135.2	34.32	5100.00	46.06	29.98
1425.00	125.9	35.15	5200.00	45.55	32.89
1450.00	123.6	35.24	5300.00	44.71	32.60
1475.00	121.6	35.30	5400.00	43.56	30.33
1500.00	119.0	35.41	5500.00	42.86	33.12
1525.00	115.1	35.65	5600.00	42.02	33.19
1550.00	115.6	35.50	5700.00	61.63	23.39
1575.00	115.5	35.39	5800.00	67.15	31.46
1600.00	106.2	36.09	5900.00	42.04	19.87
1625.00	104.4	22.46	6000.00	39.13	32.83
1650.00	105.0	23.38	6100.00	38.43	31.41
1675.00	104.4	23.75	6200.00	37.71	31.10
1700.00	106.0	35.71	6300.00	37.05	32.12
1725.00	112.3	26.06	6400.00	45.63	29.46
1750.00	125.1	28.21	6500.00	34.33	35.03
1775.00	126.7	28.96	6600.00	35.19	33.22
1800.00	127.6	29.59	6700.00	34.31	30.42
1825.00	127.4	30.39	6800.00	34.01	32.05
1850.00	125.9	30.41	6900.00	33.56	32.52
1875.00	124.1	29.99	7000.00	32.94	31.80
1900.00	120.9	29.30	7100.00	32.42	31.82
1925.00	115.1	28.42	7200.00	31.92	32.15
1950.00	111.8	28.12	7300.00	31.50	32.62
1975.00	112.1	28.36	7400.00	31.03	32.81
2000.00	115.2	29.22	7500.00	33.69	34.06
2025.00	114.4	29.35	7600.00	37.30	33.06
2050.00	109.5	28.55	7700.00	46.27	30.93
2075.00	99.46	27.30	7800.00	28.43	29.77
2100.00	94.08	22.40	7900.00	28.26	34.49
2125.00	92.74	22.66	8000.00	28.28	32.13
2150.00	96.09	34.82	8100.00	27.63	30.60
2175.00	99.79	34.12	8200.00	25.50	36.26
2200.00	103.0	33.22	8300.00	26.45	34.93

2225.00	102.5	33.05	8400.00	26.45	30.54
2250.00	102.6	32.56	8500.00	26.19	34.15
2275.00	102.1	32.06	8600.00	25.92	33.92
2300.00	102.7	31.45	8700.00	25.35	30.49
2325.00	101.9	31.37	8800.00	26.75	23.48
2350.00	100.5	31.53	8900.00	32.18	24.25
2375.00	100.5	30.60	9000.00	32.00	30.06
2400.00	97.92	29.47	9100.00	30.87	21.43
2425.00	98.47	28.25	9200.00	24.09	33.17
2450.00	90.05	34.14	9300.00	25.73	23.39
2475.00	87.99	26.22	9400.00	20.77	22.99
2500.00	88.27	24.16	9500.00	20.47	22.24
2525.00	88.71	33.92	9600.00	33.70	27.58
2550.00	91.30	32.81	9700.00	24.65	35.65
2575.00	93.10	30.72	9800.00	20.12	37.18
2600.00	86.24	28.29	9900.00	24.15	19.77
2625.00	83.93	23.14	10000.00	34.65	28.27
2650.00	84.85	23.46	10100.00	31.42	34.32
2675.00	83.00	23.21	10200.00	31.09	25.63
2700.00	82.11	24.29	10300.00	32.73	28.42
2725.00	77.46	25.26	10400.00	26.59	35.96
2750.00	79.86	22.71	10500.00	23.20	28.27
2775.00	78.90	27.86	10600.00	20.33	39.45
2800.00	83.74	29.24	10700.00	25.35	34.44
2825.00	85.16	30.75	10800.00	21.31	19.93
2850.00	84.22	30.29	10900.00	25.86	31.49
2875.00	83.53	31.22	11000.00	19.36	32.64
2900.00	81.73	31.96	11100.00	19.11	33.93
2925.00	80.16	33.00	11200.00	18.58	35.11
2950.00	77.25	33.91	11300.00	17.21	37.13
2975.00	74.23	34.55	11400.00	28.94	28.26
3000.00	72.65	22.50	11500.00	18.33	32.92
3025.00	74.41	23.73	11600.00	18.10	33.95
3050.00	72.91	24.47	11700.00	17.40	29.73
3075.00	79.40	22.09	11800.00	18.12	39.52
3100.00	80.74	23.80	11900.00	27.43	28.67
3125.00	78.49	25.12	12000.00	25.40	26.18
3150.00	86.75	26.70	12100.00	21.45	30.84
3175.00	86.59	27.82	12200.00	17.85	34.03
3200.00	80.68	28.77	12300.00	26.06	31.57
3225.00	74.57	30.33	12400.00	22.59	35.77
3250.00	78.20	31.28	12500.00	18.08	24.68
3275.00	72.62	32.41	12600.00	15.85	35.76
3300.00	72.03	32.53	12700.00	16.76	29.32
3325.00	80.48	31.97	12800.00	14.46	27.37
3350.00	74.31	31.39	12900.00	15.73	31.13
3375.00	71.31	30.41	13000.00	17.97	33.18
3400.00	69.68	29.56	13100.00	12.18	40.31
3425.00	66.24	28.43	13200.00	11.41	10.28
3450.00	65.67	34.34	13300.00	14.28	24.98

3475.00	65.80	34.15	13400.00	13.67	26.78
3500.00	76.64	32.48	13500.00	13.80	26.15
3525.00	68.44	30.95	13600.00	14.10	28.90
3550.00	66.47	29.44	13700.00	13.78	25.39
3575.00	63.01	28.30	13800.00	13.57	22.92
3600.00	65.27	29.31	13900.00	13.34	22.45
3625.00	75.33	23.36	14000.00	10.76	14.37
3650.00	65.38	21.08	14100.00	13.22	22.73
3675.00	62.72	28.80	14200.00	12.78	20.73
3700.00	61.83	28.63	14300.00	12.29	20.76
3725.00	60.95	28.47	14400.00	20.28	27.26
3750.00	61.09	28.67	14500.00	11.59	18.63
3775.00	62.29	29.37	14600.00	10.45	5.08
3800.00	61.87	29.37	14700.00	10.70	18.52
3825.00	62.13	29.78	14800.00	15.61	38.18
3850.00	62.30	30.30	14900.00	15.22	38.43
3875.00	61.76	30.16	15000.00	15.40	38.14

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	439.5	439.5	395.6	263.7	43.95

DISTANCE FROM SOURCE 285.00 meters directed toward 360 degrees
 RECEPTOR HEIGHT 2.36 meters

IMPACT AT THE AMBIENT BOUNDARY	439.5	439.5	395.6	263.7	43.95
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DISTANCE FROM SOURCE 285.00 meters directed toward 360 degrees
 RECEPTOR HEIGHT 2.36 meters

10/20/25
23:39:09

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***** STACK PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

NO BUILDING DOWNWASH HAS BEEN REQUESTED FOR THIS ANALYSIS

***** FLOW SECTOR ANALYSIS *****

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25 meter receptor spacing: 320. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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FLOW	MAXIMUM 1-HR CONC	IMPACT DIST	RECEPTOR HEIGHT	TEMPORAL
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SECTOR	(ug/m3)	(m)	(m)	PERIOD
10	102.4	2500.0	31.20	ANN
20	107.9	2425.0	30.39	ANN
30	108.8	3225.0	30.98	ANN
40	88.52	320.0	-0.27	ANN
50	88.04	320.0	-0.65	ANN
60	86.46	320.0	-1.93	ANN
70	85.34	320.0	-2.89	ANN
80	84.78	320.0	-3.38	ANN
90	84.75	320.0	-3.41	ANN
100	84.58	320.0	-3.56	ANN
110	84.18	320.0	-3.92	ANN
120	84.18	320.0	-3.92	ANN
130	82.29	320.0	-5.73	ANN
140	80.67	320.0	-7.42	ANN
150	81.05	320.0	-7.01	ANN
160	82.82	320.0	-5.21	ANN
170	84.08	320.0	-4.01	ANN
180	83.46	320.0	-4.59	ANN
190	83.89	320.0	-4.19	ANN
200	87.78	320.0	-0.85	ANN
210	90.00	320.0	2.29	ANN
220	90.38	320.0	3.88	ANN
230	90.44	320.0	5.44	ANN
240	90.46	320.0	6.57	ANN
250	90.44	320.0	7.56	ANN
260	90.44	320.0	7.59	ANN
270	90.42	320.0	8.23	ANN
280	90.40	320.0	9.01	ANN
290	90.40	320.0	8.97	ANN
300	189.7	1275.0	27.33	ANN
310*	267.2	900.0	27.33	ANN
320	248.4	1125.0	31.79	ANN
330	140.9	1700.0	27.24	ANN
340	97.45	4400.0	31.32	ANN
350	96.32	2650.0	31.14	ANN
360	100.1	2575.0	31.86	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.10
BOWEN RATIO: 0.10
ROUGHNESS LENGTH: 0.001 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 02 18 18 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS
-1.21	0.045	-9.000	0.020	-999.	22.	7.4	0.001	0.10	0.10	1.00		

HT	REF	TA	HT
10.0	311.2	2.0	

WIND SPEED AT STACK HEIGHT (non-downwash): 2.2 m/s
STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
ESTIMATED FINAL PLUME RISE (non-downwash): 8.2 meters
ESTIMATED FINAL PLUME HEIGHT (non-downwash): 28.2 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 04 07 18 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS
22.42	0.060	0.300	0.020	49.	34.	-1.0	0.001	0.10	0.10	1.00		

HT	REF	TA	HT
10.0	311.2	2.0	

WIND SPEED AT STACK HEIGHT (non-downwash): 1.0 m/s
STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
ESTIMATED FINAL PLUME RISE (non-downwash): 24.3 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 44.3 meters

***** AERSCREEN AUTOMATED DISTANCES *****
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
320.00	90.46	6.57	3925.00	64.54	32.45
325.00	90.13	6.67	3950.00	63.99	32.75
350.00	88.35	5.76	3975.00	63.01	33.31
375.00	86.39	4.50	4000.00	61.62	33.88
400.00	84.34	4.77	4025.00	61.11	33.94
425.00	82.27	4.02	4050.00	62.25	32.85
450.00	80.20	5.30	4075.00	61.43	31.42
475.00	78.18	4.18	4100.00	58.66	30.22
500.00	76.21	3.84	4125.00	60.51	31.33
525.00	74.31	3.96	4150.00	60.80	32.32
550.00	72.47	3.63	4175.00	60.21	32.95
575.00	70.71	4.46	4200.00	59.44	33.35
600.00	69.02	4.98	4225.00	58.23	33.90
625.00	67.43	3.77	4250.00	57.11	34.27
650.00	65.88	3.72	4275.00	60.53	24.61
675.00	64.40	4.36	4300.00	74.28	26.29
700.00	63.00	3.66	4325.00	84.07	27.50
725.00	61.65	3.82	4350.00	91.97	28.77
750.00	60.36	3.73	4375.00	97.35	30.36
775.00	59.13	3.47	4400.00	97.45	31.32
800.00	59.65	19.98	4425.00	95.25	32.33
825.00	67.15	20.80	4450.00	90.29	33.45
850.00	69.39	21.20	4475.00	84.78	34.31
875.00	142.6	24.26	4500.00	72.95	35.60
900.00	267.2	27.33	4525.00	67.94	36.09
925.00	254.4	30.10	4550.00	48.59	28.26
950.00	260.2	31.71	4575.00	51.92	30.18
975.00	246.7	32.55	4600.00	53.05	30.90
1000.00	237.7	32.79	4625.00	67.69	35.55
1025.00	231.1	27.05	4650.00	69.66	35.50
1050.00	229.8	28.37	4675.00	71.35	35.48
1075.00	227.2	29.49	4700.00	73.86	35.29
1100.00	225.7	30.83	4725.00	69.90	35.78
1125.00	248.4	31.79	4750.00	70.08	35.85
1150.00	202.4	33.31	4775.00	69.99	35.81
1175.00	180.9	34.21	4800.00	71.03	35.65

1200.00	178.4	34.19	4825.00	65.67	36.32
1225.00	176.5	34.14	4850.00	62.73	36.66
1250.00	182.3	26.61	4875.00	57.54	37.06
1275.00	189.7	27.33	4900.00	54.71	37.22
1300.00	188.1	27.66	4925.00	56.17	29.55
1325.00	184.7	27.72	4950.00	59.92	36.18
1350.00	181.0	27.64	4975.00	49.06	33.91
1375.00	172.0	26.98	5000.00	51.71	35.33
1400.00	158.1	26.35	5100.00	72.42	32.32
1425.00	155.9	34.14	5200.00	43.04	35.88
1450.00	148.0	26.12	5300.00	55.99	24.31
1475.00	146.1	26.14	5400.00	78.82	31.60
1500.00	161.8	35.13	5500.00	43.89	31.32
1525.00	146.1	26.38	5600.00	43.71	32.83
1550.00	157.2	27.65	5700.00	42.79	32.33
1575.00	154.8	27.77	5800.00	55.94	25.75
1600.00	152.2	27.68	5900.00	40.71	33.98
1625.00	149.2	28.22	6000.00	40.33	33.34
1650.00	144.3	28.61	6100.00	39.13	34.11
1675.00	142.1	28.60	6200.00	39.25	29.67
1700.00	143.1	27.96	6300.00	35.90	35.64
1725.00	140.0	27.45	6400.00	37.16	34.02
1750.00	134.5	26.96	6500.00	36.81	32.41
1775.00	130.0	26.71	6600.00	38.28	27.67
1800.00	133.4	27.34	6700.00	45.84	29.34
1825.00	132.7	28.07	6800.00	55.58	30.52
1850.00	130.9	27.71	6900.00	49.85	34.21
1875.00	127.0	27.19	7000.00	38.50	34.75
1900.00	125.2	27.19	7100.00	33.12	33.81
1925.00	125.6	27.74	7200.00	35.36	25.82
1950.00	125.1	33.51	7300.00	48.37	33.89
1975.00	124.5	33.39	7400.00	34.58	35.83
2000.00	124.8	33.13	7500.00	30.82	34.38
2025.00	127.3	31.97	7600.00	30.64	33.65
2050.00	124.1	30.86	7700.00	30.14	32.45
2075.00	118.4	33.48	7800.00	29.72	28.24
2100.00	122.3	32.30	7900.00	28.97	31.80
2125.00	120.3	31.04	8000.00	27.41	30.33
2150.00	113.4	29.97	8100.00	27.22	35.74
2175.00	109.5	29.62	8200.00	27.83	34.26
2200.00	104.9	29.23	8300.00	38.17	26.31
2225.00	105.8	28.60	8400.00	41.10	33.83
2250.00	103.9	28.72	8500.00	25.09	24.04
2275.00	102.7	28.73	8600.00	26.14	24.58
2300.00	101.0	29.30	8700.00	23.63	29.22
2325.00	104.9	29.98	8800.00	25.66	33.97
2350.00	101.9	29.69	8900.00	41.93	31.99
2375.00	100.3	28.08	9000.00	32.65	24.74
2400.00	99.27	27.73	9100.00	22.53	21.93
2425.00	107.9	30.39	9200.00	32.12	24.84

2450.00	103.6	32.93	9300.00	21.87	37.27
2475.00	101.1	30.48	9400.00	35.66	33.27
2500.00	102.4	31.20	9500.00	22.05	30.13
2525.00	102.1	32.07	9600.00	32.97	35.64
2550.00	99.94	32.81	9700.00	36.77	32.71
2575.00	100.1	31.86	9800.00	33.73	26.52
2600.00	98.53	32.59	9900.00	28.80	24.62
2625.00	96.49	33.04	10000.00	27.00	24.10
2650.00	96.32	31.14	10100.00	27.14	40.77
2675.00	96.17	31.63	10200.00	32.15	26.58
2700.00	94.91	32.57	10300.00	31.69	33.80
2725.00	93.19	32.97	10400.00	30.01	30.09
2750.00	92.51	32.91	10500.00	23.46	42.03
2775.00	91.61	32.94	10600.00	23.56	44.39
2800.00	90.79	32.94	10700.00	23.34	44.78
2825.00	90.04	32.92	10800.00	22.86	44.13
2850.00	89.29	32.90	10900.00	19.71	33.64
2875.00	88.66	32.83	11000.00	31.11	29.59
2900.00	88.33	32.56	11100.00	21.50	49.04
2925.00	87.25	32.77	11200.00	19.00	32.97
2950.00	85.74	33.13	11300.00	18.79	34.27
2975.00	84.13	33.45	11400.00	29.85	31.30
3000.00	82.67	33.68	11500.00	24.38	24.79
3025.00	81.02	33.94	11600.00	22.09	33.59
3050.00	81.25	33.71	11700.00	18.73	29.87
3075.00	82.42	33.06	11800.00	17.46	31.64
3100.00	82.42	32.65	11900.00	28.18	30.44
3125.00	82.07	32.15	12000.00	23.10	37.20
3150.00	81.29	31.77	12100.00	18.18	50.91
3175.00	80.53	31.66	12200.00	16.80	35.46
3200.00	95.07	33.55	12300.00	15.83	37.32
3225.00	108.8	30.98	12400.00	20.44	23.85
3250.00	93.29	28.78	12500.00	22.56	25.13
3275.00	76.73	30.92	12600.00	22.35	25.14
3300.00	75.61	30.72	12700.00	16.12	34.68
3325.00	74.00	30.38	12800.00	24.08	26.72
3350.00	71.55	29.87	12900.00	14.69	29.63
3375.00	68.05	29.22	13000.00	12.95	24.45
3400.00	68.26	29.37	13100.00	12.13	47.59
3425.00	68.90	29.63	13200.00	12.03	47.82
3450.00	70.57	30.20	13300.00	13.10	25.56
3475.00	72.33	31.06	13400.00	15.02	32.82
3500.00	72.86	31.97	13500.00	14.80	32.37
3525.00	71.10	33.42	13600.00	13.30	28.32
3550.00	71.69	32.61	13700.00	13.17	28.75
3575.00	71.27	32.36	13800.00	12.68	26.40
3600.00	68.22	30.46	13900.00	11.16	50.51
3625.00	69.21	31.10	14000.00	11.57	24.57
3650.00	69.48	31.67	14100.00	16.00	36.18
3675.00	69.24	32.17	14200.00	20.23	25.99

3700.00	68.23	33.06	14300.00	10.90	48.59
3725.00	67.06	33.50	14400.00	10.80	48.59
3750.00	64.29	34.41	14500.00	10.71	48.59
3775.00	63.16	29.91	14600.00	10.61	48.59
3800.00	64.04	30.34	14700.00	15.69	48.07
3825.00	64.09	30.53	14800.00	16.03	47.27
3850.00	78.38	34.59	14900.00	12.04	54.05
3875.00	88.50	32.63	15000.00	11.10	23.55
3900.00	77.93	31.48			

 ***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	269.9	269.9	242.9	161.9	26.99

DISTANCE FROM SOURCE 904.00 meters directed toward 310 degrees
 RECEPTOR HEIGHT 27.81 meters

IMPACT AT THE AMBIENT BOUNDARY	90.46	90.46	81.41	54.27	9.046
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DISTANCE FROM SOURCE 320.00 meters directed toward 240 degrees
 RECEPTOR HEIGHT 6.57 meters

10/21/25
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***** STACK PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

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***** FLOW SECTOR ANALYSIS *****
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25 meter receptor spacing: 143. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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TEMPORAL PERIOD	FLOW SECTOR	BUILD WIDTH	BUILD LENGTH	XBADJ	YBADJ	MAXIMUM	IMPACT	RECEPTOR	
						1-HR CONC (ug/m3)	DIST (m)	HEIGHT (m)	
10		63.43	35.04	-17.52	0.00	32.68	143.0	16.44	ANN
20*		64.93	44.01	-22.01	0.00	33.44	143.0	17.66	ANN
30		64.46	51.65	-25.83	0.00	32.86	143.0	16.73	ANN
40		62.03	57.72	-28.86	0.00	27.61	143.0	13.04	ANN
50		57.72	62.03	-31.02	0.00	26.90	143.0	8.65	ANN
60		51.65	64.46	-32.23	0.00	23.46	143.0	4.73	ANN
70		44.01	64.93	-32.47	0.00	29.35	143.0	1.56	ANN
80		35.04	63.43	-31.71	0.00	28.80	143.0	-0.52	ANN
90		25.00	60.00	-30.00	0.00	28.16	143.0	-1.31	ANN
100		35.04	63.43	-31.71	0.00	28.32	143.0	-1.10	ANN
110		44.01	64.93	-32.47	0.00	28.62	143.0	-0.75	ANN
120		51.65	64.46	-32.23	0.00	22.87	143.0	-1.04	ANN
130		57.72	62.03	-31.02	0.00	25.05	143.0	-1.78	ANN
140		62.03	57.72	-28.86	0.00	23.69	143.0	-3.76	ANN
150		64.46	51.65	-25.83	0.00	24.61	143.0	-6.90	ANN
160		64.93	44.01	-22.01	0.00	23.19	143.0	-10.43	ANN
170		63.43	35.04	-17.52	0.00	22.55	143.0	-13.25	ANN
180		60.00	25.00	-12.50	0.00	22.34	143.0	-14.70	ANN
190		63.43	35.04	-17.52	0.00	22.29	143.0	-15.11	ANN
200		64.93	44.01	-22.01	0.00	22.29	143.0	-15.13	ANN
210		64.46	51.65	-25.83	0.00	22.32	143.0	-14.88	ANN
220		62.03	57.72	-28.86	0.00	20.23	143.0	-14.27	ANN
230		57.72	62.03	-31.02	0.00	20.25	143.0	-14.40	ANN
240		51.65	64.46	-32.23	0.00	18.34	143.0	-13.68	ANN
250		44.01	64.93	-32.47	0.00	22.64	143.0	-12.74	ANN
260		35.04	63.43	-31.71	0.00	22.90	143.0	-11.55	ANN
270		25.00	60.00	-30.00	0.00	22.84	143.0	-11.79	ANN
280		35.04	63.43	-31.71	0.00	23.12	143.0	-10.67	ANN
290		44.01	64.93	-32.47	0.00	23.88	143.0	-8.40	ANN
300		51.65	64.46	-32.23	0.00	20.65	143.0	-5.57	ANN
310		57.72	62.03	-31.02	0.00	25.05	143.0	-1.77	ANN
320		62.03	57.72	-28.86	0.00	26.41	143.0	1.93	ANN
330		64.46	51.65	-25.83	0.00	29.01	143.0	6.02	ANN
340		64.93	44.01	-22.01	0.00	29.26	143.0	9.21	ANN
350		63.43	35.04	-17.52	0.00	30.03	143.0	11.65	ANN
360		60.00	25.00	-12.50	0.00	31.26	143.0	14.10	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.12

BOWEN RATIO: 0.80

ROUGHNESS LENGTH: 1.300 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 03 05 5 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	0.755	-9.000	0.020	-999.	1510.	644.0	1.300	0.80	0.12	4.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 5.4 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 4.5 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 24.5 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 03 05 5 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	0.755	-9.000	0.020	-999.	1510.	644.0	1.300	0.80	0.12	4.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 5.4 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 4.5 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 24.5 meters

***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
143.00	33.44	17.66	3825.00	3.072	45.85
150.00	32.15	17.59	3850.00	3.059	45.88
175.00	27.90	16.41	3875.00	3.046	46.00
200.00	24.28	12.90	3900.00	3.033	46.45
225.00	21.02	8.08	3925.00	3.020	46.88
250.00	18.13	6.11	3950.00	3.008	47.15
275.00	16.60	8.94	3975.00	2.995	47.25
300.00	15.11	11.29	4000.00	2.983	47.25
325.00	13.62	12.13	4025.00	2.970	47.12
350.00	12.23	10.47	4050.00	2.958	46.12
375.00	13.19	3.03	4075.00	2.945	45.00
400.00	14.00	1.11	4100.00	2.932	43.64
425.00	14.63	1.42	4125.00	2.917	41.61
450.00	14.77	-0.17	4150.00	2.902	39.41
475.00	14.59	0.08	4175.00	2.885	36.71
500.00	14.29	0.03	4200.00	2.875	37.23
525.00	13.96	0.13	4225.00	2.864	37.92
550.00	13.53	1.05	4250.00	2.854	38.42
575.00	13.22	0.07	4275.00	2.842	38.34
600.00	12.84	0.12	4300.00	2.831	38.46
625.00	12.46	0.66	4325.00	2.821	38.93
650.00	12.09	0.23	4350.00	2.810	39.24
675.00	11.72	0.48	4375.00	2.799	39.25
700.00	11.36	1.64	4400.00	2.788	39.25
725.00	11.03	2.45	4425.00	2.778	39.36
750.00	10.72	3.57	4450.00	2.767	39.25
775.00	10.42	4.53	4475.00	2.757	39.59
800.00	10.14	5.59	4500.00	2.747	40.05

825.00	9.880	6.66	4525.00	2.737	40.27
850.00	9.630	9.37	4550.00	2.726	40.22
875.00	9.395	9.85	4575.00	2.716	40.26
900.00	9.172	11.30	4600.00	2.706	40.27
925.00	8.959	12.47	4625.00	2.696	40.74
950.00	8.756	13.89	4650.00	2.687	41.47
975.00	8.559	14.88	4675.00	2.679	42.39
1000.00	8.364	15.24	4700.00	2.670	43.35
1025.00	8.172	15.24	4725.00	2.661	44.33
1050.00	7.991	15.80	4750.00	2.653	45.39
1075.00	7.820	16.82	4775.00	2.644	46.29
1100.00	7.657	18.14	4800.00	2.634	46.52
1125.00	7.533	2.42	4825.00	2.625	46.34
1150.00	7.441	3.13	4850.00	2.615	46.25
1175.00	7.350	3.78	4875.00	2.605	45.93
1200.00	7.273	25.23	4900.00	2.596	45.50
1225.00	7.224	26.54	4925.00	2.587	45.50
1250.00	7.173	27.72	4950.00	2.578	45.82
1275.00	7.118	28.73	4975.00	2.569	46.25
1300.00	7.051	29.34	5000.00	2.560	46.26
1325.00	6.976	29.57	5100.00	2.525	47.19
1350.00	6.901	29.80	5200.00	2.492	49.68
1375.00	6.839	30.60	5300.00	2.457	53.85
1400.00	6.770	31.11	5400.00	2.425	48.16
1425.00	6.706	31.81	5500.00	2.394	49.17
1450.00	6.640	32.43	5600.00	2.362	57.53
1475.00	6.578	33.25	5700.00	2.333	56.59
1500.00	6.501	33.24	5800.00	2.305	53.47
1525.00	6.424	33.21	5900.00	2.276	50.73
1550.00	6.355	33.54	6000.00	2.255	0.41
1575.00	6.292	34.19	6100.00	2.233	1.42
1600.00	6.223	34.48	6200.00	2.213	1.53
1625.00	6.168	35.52	6300.00	2.195	0.69
1650.00	6.105	36.11	6400.00	2.176	0.13
1675.00	6.041	36.57	6500.00	2.156	1.08
1700.00	5.973	36.68	6600.00	2.138	0.26
1725.00	5.900	36.40	6700.00	2.119	0.97
1750.00	5.822	35.49	6800.00	2.097	-0.45
1775.00	5.748	34.67	6900.00	2.082	-0.04
1800.00	5.687	34.88	7000.00	2.063	-0.28
1825.00	5.621	34.58	7100.00	2.046	1.50
1850.00	5.558	34.28	7200.00	2.027	-0.31
1875.00	5.495	33.97	7300.00	2.010	3.37
1900.00	5.435	33.87	7400.00	1.993	3.25
1925.00	5.376	33.66	7500.00	1.978	2.12
1950.00	5.319	33.62	7600.00	1.962	1.12
1975.00	5.260	33.12	7700.00	1.944	3.25
2000.00	5.202	32.59	7800.00	1.928	3.25
2025.00	5.143	31.73	7900.00	1.914	0.78
2050.00	5.087	31.15	8000.00	1.898	1.40

2075.00	5.032	30.67	8100.00	1.883	1.26
2100.00	4.980	30.38	8200.00	1.868	0.27
2125.00	4.931	30.65	8300.00	1.852	3.25
2150.00	4.881	30.48	8400.00	1.838	3.25
2175.00	4.832	30.38	8500.00	1.823	3.25
2200.00	4.782	29.98	8600.00	1.809	3.01
2225.00	4.732	29.58	8700.00	1.795	3.25
2250.00	4.684	29.23	8800.00	1.781	3.25
2275.00	4.638	29.14	8900.00	1.767	3.25
2300.00	4.592	29.03	9000.00	1.754	1.73
2325.00	4.546	28.73	9100.00	1.740	1.52
2350.00	4.499	28.17	9200.00	1.727	3.25
2375.00	4.450	27.17	9300.00	1.714	2.05
2400.00	4.403	26.56	9400.00	1.701	2.07
2425.00	4.360	26.44	9500.00	1.689	2.06
2450.00	4.312	25.49	9600.00	1.676	3.25
2475.00	4.259	24.02	9700.00	1.664	4.25
2500.00	4.200	22.05	9800.00	1.652	3.96
2525.00	4.136	19.79	9900.00	1.640	4.69
2550.00	4.067	17.51	10000.00	1.628	5.48
2575.00	4.013	16.47	10100.00	1.616	5.25
2600.00	3.980	16.86	10200.00	1.605	5.73
2625.00	3.944	16.99	10300.00	1.593	4.79
2650.00	3.911	17.28	10400.00	1.582	63.06
2675.00	3.877	17.54	10500.00	1.572	63.02
2700.00	3.850	18.19	10600.00	1.562	66.70
2725.00	3.822	18.75	10700.00	1.551	64.73
2750.00	3.793	19.26	10800.00	1.541	66.43
2775.00	3.758	19.25	10900.00	1.531	64.65
2800.00	3.725	19.37	11000.00	1.521	62.15
2825.00	3.694	19.57	11100.00	1.511	64.95
2850.00	3.667	20.04	11200.00	1.501	73.33
2875.00	3.638	20.39	11300.00	1.492	64.33
2900.00	3.611	20.82	11400.00	1.483	68.83
2925.00	3.585	21.36	11500.00	1.474	70.25
2950.00	3.565	21.60	11600.00	1.464	69.86
2975.00	3.542	20.68	11700.00	1.455	69.08
3000.00	3.530	21.92	11800.00	1.446	69.46
3025.00	3.520	23.78	11900.00	1.436	78.22
3050.00	3.506	24.72	12000.00	1.427	66.50
3075.00	3.493	25.86	12100.00	1.419	67.92
3100.00	3.480	27.05	12200.00	1.410	66.41
3125.00	3.466	28.16	12300.00	1.401	64.81
3150.00	3.452	29.33	12400.00	1.392	64.34
3175.00	3.439	30.57	12500.00	1.384	67.47
3200.00	3.423	30.96	12600.00	1.376	69.88
3225.00	3.407	31.34	12700.00	1.369	73.24
3250.00	3.392	32.13	12800.00	1.361	75.89
3275.00	3.379	33.30	12900.00	1.353	78.09
3300.00	3.363	33.75	13000.00	1.344	80.08

3325.00	3.347	33.48	13100.00	1.336	81.10
3350.00	3.330	33.29	13200.00	1.329	81.13
3375.00	3.313	33.04	13300.00	1.321	82.37
3400.00	3.295	32.21	13400.00	1.313	79.50
3425.00	3.279	31.94	13500.00	1.306	79.10
3450.00	3.266	32.80	13600.00	1.298	82.58
3475.00	3.253	33.73	13700.00	1.290	75.03
3500.00	3.240	34.80	13800.00	1.283	76.62
3525.00	3.228	35.88	13900.00	1.276	81.55
3550.00	3.215	36.88	14000.00	1.269	80.44
3575.00	3.202	37.82	14100.00	1.262	83.25
3600.00	3.189	38.72	14200.00	1.258	95.82
3625.00	3.176	39.28	14300.00	1.250	94.23
3650.00	3.162	39.66	14400.00	1.244	95.59
3675.00	3.149	40.57	14500.00	1.234	83.62
3700.00	3.136	41.44	14600.00	1.227	83.83
3725.00	3.124	42.58	14700.00	1.221	83.33
3750.00	3.111	43.94	14800.00	1.218	95.43
3775.00	3.098	44.72	14900.00	1.211	95.59
3800.00	3.085	45.45	15000.00	1.204	95.26

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	33.44	33.44	30.10	20.07	3.344

DISTANCE FROM SOURCE 143.00 meters directed toward 20 degrees
 RECEPTOR HEIGHT 17.66 meters

IMPACT AT THE AMBIENT BOUNDARY	33.44	33.44	30.10	20.07	3.344
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DISTANCE FROM SOURCE 143.00 meters directed toward 20 degrees
 RECEPTOR HEIGHT 17.66 meters

10/21/25
00:39:20

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***** FLARE PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

***** FLOW SECTOR ANALYSIS *****

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25 meter receptor spacing: 300. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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FLOW SECTOR	MAXIMUM 1-HR CONC (ug/m3)	IMPACT DIST (m)	RECEPTOR HEIGHT (m)	TEMPORAL PERIOD
10	0.9448	375.0	1.37	ANN
20	0.9398	375.0	-0.94	ANN
30	0.9470	375.0	-0.49	ANN
40	0.9366	375.0	-1.14	ANN
50	0.9226	375.0	-2.05	ANN
60	0.9047	375.0	-3.26	ANN
70	0.8894	375.0	-4.35	ANN
80	0.8896	400.0	-4.49	ANN
90	0.8897	400.0	-4.48	ANN
100	0.8794	400.0	-5.33	ANN
110	0.8710	375.0	-5.75	ANN
120	0.8591	375.0	-6.71	ANN
130	0.8353	400.0	-9.39	ANN
140	0.8262	400.0	-10.34	ANN
150	0.8403	375.0	-8.35	ANN
160	0.8826	400.0	-5.06	ANN
170	0.8835	450.0	-2.24	ANN
180	0.9305	425.0	-0.18	ANN
190	0.9498	400.0	0.06	ANN
200	0.9483	375.0	1.07	ANN
210*	0.9550	375.0	0.01	ANN
220	0.9224	375.0	3.38	ANN
230	0.9136	425.0	4.10	ANN
240	0.9139	425.0	4.04	ANN
250	0.9101	400.0	5.64	ANN
260	0.9066	400.0	6.19	ANN
270	0.9059	400.0	6.31	ANN
280	0.9000	400.0	7.37	ANN
290	0.8972	400.0	7.98	ANN
300	0.8950	400.0	8.50	ANN
310	0.8916	425.0	9.47	ANN
320	0.8978	400.0	7.84	ANN
330	0.9045	425.0	5.91	ANN
340	0.9091	400.0	5.79	ANN
350	0.9318	400.0	2.72	ANN
360	0.9314	400.0	2.77	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.12

BOWEN RATIO: 0.80

ROUGHNESS LENGTH: 1.300 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 04 04 4 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	3.528	-9.000	0.020	-999.	4000.	8888.0	1.300	0.80	0.12	18.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 33.7 m/s
STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 42.7 meters
ESTIMATED FINAL PLUME RISE (non-downwash): 17.0 meters
ESTIMATED FINAL PLUME HEIGHT (non-downwash): 59.6 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 04 04 4 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	3.528	-9.000	0.020	-999.	4000.	8888.0	1.300	0.80	0.12	18.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 33.7 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 42.7 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 17.0 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 59.6 meters

 ***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
300.00	0.7432	5.96	3925.00	0.2576	48.66
325.00	0.8892	1.37	3950.00	0.2579	48.68
350.00	0.9388	0.79	3975.00	0.2582	48.46
375.00	0.9550	0.01	4000.00	0.2585	48.48
400.00	0.9498	0.13	4025.00	0.2588	48.51
425.00	0.9310	0.86	4050.00	0.2591	48.54
450.00	0.9075	0.56	4075.00	0.2593	48.31
475.00	0.8771	0.34	4100.00	0.2595	47.51
500.00	0.8450	3.07	4125.00	0.2597	47.40
525.00	0.8153	13.83	4150.00	0.2598	46.61
550.00	0.7891	15.39	4175.00	0.2600	46.13
575.00	0.7612	15.27	4200.00	0.2601	45.46
600.00	0.7319	14.25	4225.00	0.2602	44.47
625.00	0.7040	15.11	4250.00	0.2603	43.50
650.00	0.6760	15.39	4275.00	0.2604	43.55
675.00	0.6466	13.90	4300.00	0.2605	44.06
700.00	0.6208	14.75	4325.00	0.2607	45.48
725.00	0.5964	15.93	4350.00	0.2609	47.24
750.00	0.5742	18.14	4375.00	0.2611	49.06
775.00	0.5517	19.19	4400.00	0.2612	50.53
800.00	0.5294	19.50	4425.00	0.2613	51.75
825.00	0.5091	20.69	4450.00	0.2614	52.54
850.00	0.4915	23.63	4475.00	0.2614	53.07
875.00	0.4740	25.96	4500.00	0.2614	52.69
900.00	0.4568	27.75	4525.00	0.2613	51.66
925.00	0.4400	29.00	4550.00	0.2612	50.25
950.00	0.4237	29.67	4575.00	0.2611	49.23
975.00	0.4130	0.36	4600.00	0.2611	50.17
1000.00	0.4078	0.87	4625.00	0.2610	50.45
1025.00	0.4022	1.31	4650.00	0.2610	50.72
1050.00	0.3971	0.67	4675.00	0.2609	50.72
1075.00	0.3912	0.14	4700.00	0.2608	51.18
1100.00	0.3850	0.51	4725.00	0.2607	51.42
1125.00	0.3785	0.71	4750.00	0.2606	51.35

1150.00	0.3719	1.13	4775.00	0.2605	50.66
1175.00	0.3654	3.50	4800.00	0.2603	50.39
1200.00	0.3596	35.70	4825.00	0.2602	50.04
1225.00	0.3543	36.28	4850.00	0.2600	49.76
1250.00	0.3489	36.13	4875.00	0.2599	50.32
1275.00	0.3433	36.26	4900.00	0.2598	51.19
1300.00	0.3378	36.55	4925.00	0.2596	51.94
1325.00	0.3323	37.20	4950.00	0.2595	52.90
1350.00	0.3267	37.19	4975.00	0.2593	53.89
1375.00	0.3212	37.02	5000.00	0.2592	55.15
1400.00	0.3156	36.84	5100.00	0.2585	59.33
1425.00	0.3101	36.97	5200.00	0.2577	61.87
1450.00	0.3049	38.61	5300.00	0.2566	61.25
1475.00	0.2996	39.42	5400.00	0.2555	60.63
1500.00	0.2943	40.31	5500.00	0.2543	58.11
1525.00	0.2891	40.41	5600.00	0.2529	54.80
1550.00	0.2838	39.90	5700.00	0.2516	52.18
1575.00	0.2786	39.19	5800.00	0.2503	56.94
1600.00	0.2736	38.96	5900.00	0.2491	64.42
1625.00	0.2686	38.76	6000.00	0.2478	68.88
1650.00	0.2638	39.46	6100.00	0.2464	73.28
1675.00	0.2591	40.02	6200.00	0.2450	76.20
1700.00	0.2545	40.09	6300.00	0.2434	75.82
1725.00	0.2499	40.20	6400.00	0.2417	71.89
1750.00	0.2453	39.51	6500.00	0.2401	68.76
1775.00	0.2407	38.48	6600.00	0.2384	68.64
1800.00	0.2361	37.17	6700.00	0.2368	66.69
1825.00	0.2317	36.35	6800.00	0.2351	63.42
1850.00	0.2275	35.74	6900.00	0.2333	58.63
1875.00	0.2233	35.47	7000.00	0.2317	56.51
1900.00	0.2192	34.62	7100.00	0.2300	56.31
1925.00	0.2150	33.49	7200.00	0.2283	53.49
1950.00	0.2110	32.81	7300.00	0.2265	51.18
1975.00	0.2110	32.51	7400.00	0.2248	50.31
2000.00	0.2116	32.51	7500.00	0.2231	49.05
2025.00	0.2122	32.45	7600.00	0.2214	43.84
2050.00	0.2128	31.72	7700.00	0.2197	44.44
2075.00	0.2132	30.51	7800.00	0.2180	37.77
2100.00	0.2136	29.56	7900.00	0.2163	37.29
2125.00	0.2139	28.44	8000.00	0.2145	30.51
2150.00	0.2143	28.66	8100.00	0.2128	28.55
2175.00	0.2146	28.78	8200.00	0.2111	26.99
2200.00	0.2148	28.60	8300.00	0.2094	23.88
2225.00	0.2151	29.19	8400.00	0.2077	21.33
2250.00	0.2153	29.30	8500.00	0.2060	18.57
2275.00	0.2154	29.62	8600.00	0.2043	20.23
2300.00	0.2155	30.28	8700.00	0.2026	18.22
2325.00	0.2156	30.24	8800.00	0.2009	18.06
2350.00	0.2156	28.65	8900.00	0.1993	23.01
2375.00	0.2154	26.28	9000.00	0.1977	21.14

2400.00	0.2154	26.55	9100.00	0.1961	22.66
2425.00	0.2154	27.17	9200.00	0.1945	22.44
2450.00	0.2154	28.88	9300.00	0.1930	23.51
2475.00	0.2153	31.46	9400.00	0.1914	25.39
2500.00	0.2153	33.70	9500.00	0.1899	29.31
2525.00	0.2152	35.54	9600.00	0.1884	29.59
2550.00	0.2150	36.61	9700.00	0.1870	29.50
2575.00	0.2148	37.46	9800.00	0.1855	30.41
2600.00	0.2146	38.37	9900.00	0.1841	29.10
2625.00	0.2144	39.70	10000.00	0.1827	30.88
2650.00	0.2141	41.31	10100.00	0.1813	32.44
2675.00	0.2139	42.60	10200.00	0.1799	37.05
2700.00	0.2136	43.60	10300.00	0.1786	36.23
2725.00	0.2132	44.71	10400.00	0.1772	33.39
2750.00	0.2129	46.55	10500.00	0.1759	37.78
2775.00	0.2126	48.03	10600.00	0.1746	41.04
2800.00	0.2122	49.45	10700.00	0.1733	40.19
2825.00	0.2128	50.57	10800.00	0.1721	48.26
2850.00	0.2147	50.75	10900.00	0.1708	46.60
2875.00	0.2167	51.63	11000.00	0.1696	50.73
2900.00	0.2185	52.22	11100.00	0.1684	52.42
2925.00	0.2203	52.37	11200.00	0.1672	49.52
2950.00	0.2220	52.52	11300.00	0.1660	65.38
2975.00	0.2236	52.62	11400.00	0.1648	62.34
3000.00	0.2253	53.15	11500.00	0.1637	53.88
3025.00	0.2269	53.51	11600.00	0.1625	65.08
3050.00	0.2284	53.58	11700.00	0.1614	62.39
3075.00	0.2299	53.60	11800.00	0.1603	63.22
3100.00	0.2312	53.10	11900.00	0.1592	67.55
3125.00	0.2324	52.23	12000.00	0.1581	75.96
3150.00	0.2336	51.24	12100.00	0.1570	74.46
3175.00	0.2347	50.22	12200.00	0.1560	73.73
3200.00	0.2357	48.82	12300.00	0.1549	73.84
3225.00	0.2367	46.88	12400.00	0.1539	78.46
3250.00	0.2375	44.59	12500.00	0.1529	81.23
3275.00	0.2384	41.87	12600.00	0.1519	84.13
3300.00	0.2392	39.44	12700.00	0.1509	85.51
3325.00	0.2403	39.30	12800.00	0.1499	89.67
3350.00	0.2413	39.51	12900.00	0.1489	83.31
3375.00	0.2424	39.51	13000.00	0.1480	103.17
3400.00	0.2433	39.51	13100.00	0.1470	89.74
3425.00	0.2443	39.51	13200.00	0.1461	88.71
3450.00	0.2452	39.51	13300.00	0.1452	102.40
3475.00	0.2461	39.50	13400.00	0.1443	94.54
3500.00	0.2469	39.43	13500.00	0.1434	93.40
3525.00	0.2478	40.26	13600.00	0.1425	111.23
3550.00	0.2486	40.68	13700.00	0.1416	108.48
3575.00	0.2494	41.04	13800.00	0.1407	106.97
3600.00	0.2502	41.61	13900.00	0.1399	106.69
3625.00	0.2509	42.46	14000.00	0.1390	107.53

3650.00	0.2516	42.51	14100.00	0.1382	107.59
3675.00	0.2522	42.51	14200.00	0.1373	108.15
3700.00	0.2528	42.14	14300.00	0.1365	128.51
3725.00	0.2533	42.00	14400.00	0.1357	124.45
3750.00	0.2541	44.07	14500.00	0.1349	118.96
3775.00	0.2548	46.59	14600.00	0.1341	113.86
3800.00	0.2555	48.52	14700.00	0.1333	134.45
3825.00	0.2560	49.44	14800.00	0.1325	129.78
3850.00	0.2565	50.36	14900.00	0.1317	127.23
3875.00	0.2569	50.04	15000.00	0.1310	123.88
3900.00	0.2572	49.28			

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	0.9550	0.9550	0.8595	0.5730	0.9550E-01

DISTANCE FROM SOURCE 375.00 meters directed toward 210 degrees
 RECEPTOR HEIGHT 0.01 meters

IMPACT AT THE AMBIENT BOUNDARY	0.7432	0.7432	0.6689	0.4459	0.7432E-01
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DISTANCE FROM SOURCE 300.00 meters directed toward 240 degrees
 RECEPTOR HEIGHT 5.96 meters

10/21/25
00:40:56

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***** FLARE PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

***** FLOW SECTOR ANALYSIS *****

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25 meter receptor spacing: 300. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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FLOW SECTOR	MAXIMUM 1-HR CONC (ug/m3)	IMPACT DIST (m)	RECEPTOR HEIGHT (m)	TEMPORAL PERIOD
10	0.1995	925.0	-0.65	ANN
20*	0.2007	950.0	0.47	ANN
30	0.1989	1000.0	0.95	ANN
40	0.1963	950.0	4.24	ANN
50	0.1914	1025.0	10.15	ANN
60	0.1907	1000.0	12.30	ANN
70	0.1912	1000.0	11.30	ANN
80	0.1918	1000.0	10.14	ANN
90	0.1955	950.0	5.00	ANN
100	0.2007	950.0	0.36	ANN
110	0.2007	950.0	0.43	ANN
120	0.1937	975.0	-4.18	ANN
130	0.1875	975.0	-8.52	ANN
140	0.1829	1025.0	-11.48	ANN
150	0.1837	975.0	-11.41	ANN
160	0.1842	975.0	-11.05	ANN
170	0.1907	925.0	-5.96	ANN
180	0.2006	925.0	0.38	ANN
190	0.1985	950.0	2.27	ANN
200	0.1966	1000.0	3.36	ANN
210	0.1943	1025.0	-2.71	ANN
220	0.1990	900.0	-0.59	ANN
230	0.1994	975.0	1.21	ANN
240	0.1983	975.0	2.21	ANN
250	0.1988	1000.0	-0.38	ANN
260	0.1984	875.0	0.78	ANN
270	0.1939	900.0	4.83	ANN
280	0.1946	1025.0	4.82	ANN
290	0.1903	1000.0	13.23	ANN
300	0.1883	1000.0	20.69	ANN
310	0.1883	1000.0	31.25	ANN
320	0.1882	1000.0	30.79	ANN
330	0.1902	1000.0	13.54	ANN
340	0.1907	1025.0	11.81	ANN
350	0.1991	925.0	1.59	ANN
360	0.2002	975.0	0.36	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.12

BOWEN RATIO: 0.80

ROUGHNESS LENGTH: 1.300 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 04 04 4 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	3.528	-9.000	0.020	-999.	4000.	8888.0	1.300	0.80	0.12	18.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 39.0 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 65.2 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 53.7 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 118.9 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 03 28 4 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-37.95	4.038	-9.000	0.020	-999.	4000.	8888.0	1.300	0.80	0.12	10.00

HT	REF TA	HT
10.0	244.7	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 44.6 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 62.7 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 41.7 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 104.4 meters

 ***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
300.00	0.1654E-01	8.27	3925.00	0.6897E-01	48.66
325.00	0.2743E-01	8.83	3950.00	0.6881E-01	48.68
350.00	0.4119E-01	9.37	3975.00	0.6865E-01	48.46
375.00	0.5692E-01	9.42	4000.00	0.6849E-01	48.48
400.00	0.7395E-01	9.53	4025.00	0.6832E-01	48.51
425.00	0.9128E-01	9.47	4050.00	0.6815E-01	48.54
450.00	0.1084	10.34	4075.00	0.6798E-01	48.31
475.00	0.1243	11.63	4100.00	0.6780E-01	47.51
500.00	0.1378	4.29	4125.00	0.6763E-01	47.40
525.00	0.1482	0.54	4150.00	0.6745E-01	46.61
550.00	0.1529	0.41	4175.00	0.6727E-01	46.13
575.00	0.1559	-0.17	4200.00	0.6709E-01	45.46
600.00	0.1578	0.80	4225.00	0.6691E-01	44.47
625.00	0.1587	0.06	4250.00	0.6672E-01	43.50
650.00	0.1585	0.26	4275.00	0.6654E-01	43.55
675.00	0.1575	0.19	4300.00	0.6636E-01	44.06
700.00	0.1560	2.82	4325.00	0.6618E-01	45.48
725.00	0.1595	7.57	4350.00	0.6600E-01	47.24
750.00	0.1724	4.23	4375.00	0.6582E-01	49.06
775.00	0.1856	0.13	4400.00	0.6564E-01	50.53
800.00	0.1909	0.44	4425.00	0.6545E-01	51.75
825.00	0.1939	-0.21	4450.00	0.6527E-01	52.54
850.00	0.1970	0.13	4475.00	0.6508E-01	53.07
875.00	0.1986	-0.14	4500.00	0.6488E-01	52.69
900.00	0.2000	0.42	4525.00	0.6468E-01	51.66
925.00	0.2006	0.38	4550.00	0.6448E-01	50.25
950.00	0.2007	0.47	4575.00	0.6428E-01	49.23
975.00	0.2002	0.36	4600.00	0.6409E-01	50.17
1000.00	0.1990	0.87	4625.00	0.6389E-01	50.45
1025.00	0.1974	1.31	4650.00	0.6369E-01	50.72
1050.00	0.1964	0.67	4675.00	0.6349E-01	50.72
1075.00	0.1947	0.14	4700.00	0.6329E-01	51.18
1100.00	0.1927	0.51	4725.00	0.6309E-01	51.42
1125.00	0.1903	0.71	4750.00	0.6290E-01	51.35

1150.00	0.1880	0.60	4775.00	0.6272E-01	50.66
1175.00	0.1854	0.85	4800.00	0.6275E-01	50.39
1200.00	0.1826	1.52	4825.00	0.6280E-01	50.04
1225.00	0.1800	1.51	4850.00	0.6285E-01	49.76
1250.00	0.1772	1.50	4875.00	0.6290E-01	50.32
1275.00	0.1744	1.11	4900.00	0.6295E-01	51.19
1300.00	0.1716	3.92	4925.00	0.6300E-01	51.94
1325.00	0.1692	37.20	4950.00	0.6304E-01	52.90
1350.00	0.1669	37.19	4975.00	0.6308E-01	53.89
1375.00	0.1645	37.02	5000.00	0.6312E-01	55.15
1400.00	0.1621	36.84	5100.00	0.6325E-01	59.33
1425.00	0.1597	36.97	5200.00	0.6332E-01	61.87
1450.00	0.1574	38.61	5300.00	0.6333E-01	61.25
1475.00	0.1550	39.42	5400.00	0.6330E-01	60.63
1500.00	0.1527	40.31	5500.00	0.6324E-01	58.11
1525.00	0.1503	40.41	5600.00	0.6314E-01	54.80
1550.00	0.1479	39.90	5700.00	0.6302E-01	52.18
1575.00	0.1455	39.19	5800.00	0.6290E-01	56.94
1600.00	0.1431	38.96	5900.00	0.6277E-01	64.42
1625.00	0.1408	38.76	6000.00	0.6261E-01	68.88
1650.00	0.1385	39.46	6100.00	0.6243E-01	73.28
1675.00	0.1363	40.02	6200.00	0.6222E-01	76.20
1700.00	0.1341	40.09	6300.00	0.6198E-01	75.82
1725.00	0.1319	40.20	6400.00	0.6172E-01	71.89
1750.00	0.1296	39.51	6500.00	0.6152E-01	68.76
1775.00	0.1274	38.48	6600.00	0.6148E-01	68.64
1800.00	0.1252	37.17	6700.00	0.6141E-01	66.69
1825.00	0.1231	36.35	6800.00	0.6131E-01	63.42
1850.00	0.1210	35.74	6900.00	0.6120E-01	58.63
1875.00	0.1189	35.47	7000.00	0.6108E-01	56.51
1900.00	0.1169	34.62	7100.00	0.6097E-01	56.31
1925.00	0.1148	33.49	7200.00	0.6083E-01	53.49
1950.00	0.1129	32.81	7300.00	0.6068E-01	51.18
1975.00	0.1109	32.51	7400.00	0.6053E-01	50.31
2000.00	0.1091	32.51	7500.00	0.6037E-01	52.82
2025.00	0.1073	32.45	7600.00	0.6021E-01	54.34
2050.00	0.1054	31.72	7700.00	0.6004E-01	58.18
2075.00	0.1036	30.51	7800.00	0.5986E-01	61.07
2100.00	0.1018	29.56	7900.00	0.5967E-01	62.74
2125.00	0.1000	28.44	8000.00	0.5947E-01	65.10
2150.00	0.9834E-01	28.66	8100.00	0.5926E-01	67.15
2175.00	0.9675E-01	28.78	8200.00	0.5905E-01	67.90
2200.00	0.9516E-01	28.60	8300.00	0.5882E-01	67.53
2225.00	0.9369E-01	29.19	8400.00	0.5859E-01	68.70
2250.00	0.9220E-01	29.30	8500.00	0.5836E-01	70.63
2275.00	0.9076E-01	29.62	8600.00	0.5812E-01	69.99
2300.00	0.8940E-01	30.28	8700.00	0.5787E-01	69.13
2325.00	0.8798E-01	30.24	8800.00	0.5762E-01	69.74
2350.00	0.8640E-01	28.65	8900.00	0.5737E-01	70.74
2375.00	0.8473E-01	26.28	9000.00	0.5711E-01	68.58

2400.00	0.8344E-01	26.55	9100.00	0.5684E-01	67.51
2425.00	0.8222E-01	27.17	9200.00	0.5658E-01	65.65
2450.00	0.8117E-01	28.88	9300.00	0.5631E-01	63.51
2475.00	0.8022E-01	31.46	9400.00	0.5604E-01	64.16
2500.00	0.7925E-01	33.70	9500.00	0.5577E-01	63.84
2525.00	0.7824E-01	35.54	9600.00	0.5549E-01	62.10
2550.00	0.7718E-01	36.61	9700.00	0.5522E-01	61.61
2575.00	0.7611E-01	37.46	9800.00	0.5495E-01	73.70
2600.00	0.7507E-01	38.37	9900.00	0.5466E-01	7.10
2625.00	0.7408E-01	39.70	10000.00	0.5439E-01	2.76
2650.00	0.7314E-01	41.31	10100.00	0.5411E-01	1.47
2675.00	0.7219E-01	42.60	10200.00	0.5383E-01	4.79
2700.00	0.7179E-01	43.60	10300.00	0.5355E-01	4.47
2725.00	0.7192E-01	44.71	10400.00	0.5326E-01	6.23
2750.00	0.7203E-01	46.55	10500.00	0.5298E-01	7.58
2775.00	0.7214E-01	48.03	10600.00	0.5270E-01	6.41
2800.00	0.7223E-01	49.45	10700.00	0.5242E-01	3.44
2825.00	0.7231E-01	50.57	10800.00	0.5214E-01	1.28
2850.00	0.7236E-01	50.75	10900.00	0.5184E-01	5.57
2875.00	0.7242E-01	51.63	11000.00	0.5173E-01	105.92
2900.00	0.7246E-01	52.22	11100.00	0.5218E-01	103.31
2925.00	0.7249E-01	52.37	11200.00	0.5269E-01	105.94
2950.00	0.7251E-01	52.52	11300.00	0.5317E-01	108.12
2975.00	0.7252E-01	52.62	11400.00	0.5367E-01	112.82
3000.00	0.7253E-01	53.15	11500.00	0.5418E-01	119.12
3025.00	0.7253E-01	53.51	11600.00	0.5455E-01	119.19
3050.00	0.7252E-01	53.58	11700.00	0.5471E-01	106.62
3075.00	0.7250E-01	53.60	11800.00	0.5519E-01	116.39
3100.00	0.7247E-01	53.10	11900.00	0.5566E-01	126.00
3125.00	0.7243E-01	52.23	12000.00	0.5594E-01	125.54
3150.00	0.7238E-01	51.24	12100.00	0.5620E-01	124.80
3175.00	0.7233E-01	50.22	12200.00	0.5643E-01	122.71
3200.00	0.7227E-01	48.82	12300.00	0.5663E-01	119.96
3225.00	0.7220E-01	46.88	12400.00	0.5686E-01	119.51
3250.00	0.7212E-01	44.59	12500.00	0.5707E-01	119.51
3275.00	0.7203E-01	41.87	12600.00	0.5726E-01	119.49
3300.00	0.7194E-01	39.44	12700.00	0.5746E-01	120.51
3325.00	0.7186E-01	39.30	12800.00	0.5763E-01	120.54
3350.00	0.7178E-01	39.51	12900.00	0.5781E-01	123.36
3375.00	0.7170E-01	39.51	13000.00	0.5799E-01	127.41
3400.00	0.7161E-01	39.51	13100.00	0.5815E-01	129.89
3425.00	0.7152E-01	39.51	13200.00	0.5828E-01	131.58
3450.00	0.7142E-01	39.51	13300.00	0.5838E-01	131.77
3475.00	0.7132E-01	39.50	13400.00	0.5849E-01	133.99
3500.00	0.7121E-01	39.43	13500.00	0.5858E-01	135.21
3525.00	0.7111E-01	40.26	13600.00	0.5865E-01	135.34
3550.00	0.7100E-01	40.68	13700.00	0.5872E-01	136.50
3575.00	0.7089E-01	41.04	13800.00	0.5879E-01	138.78
3600.00	0.7077E-01	41.61	13900.00	0.5880E-01	136.62
3625.00	0.7065E-01	42.46	14000.00	0.5880E-01	132.69

3650.00	0.7053E-01	42.51	14100.00	0.5881E-01	131.49
3675.00	0.7040E-01	42.51	14200.00	0.5882E-01	130.81
3700.00	0.7026E-01	42.14	14300.00	0.5881E-01	128.55
3725.00	0.7012E-01	42.00	14400.00	0.5882E-01	129.08
3750.00	0.7000E-01	44.07	14500.00	0.5884E-01	134.66
3775.00	0.6987E-01	46.59	14600.00	0.5885E-01	138.47
3800.00	0.6974E-01	48.52	14700.00	0.5880E-01	134.45
3825.00	0.6959E-01	49.44	14800.00	0.5874E-01	129.78
3850.00	0.6945E-01	50.36	14900.00	0.5869E-01	127.23
3875.00	0.6929E-01	50.04	15000.00	0.5863E-01	123.88
3900.00	0.6913E-01	49.28			

 ***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	0.2007	0.2007	0.1806	0.1204	0.2007E-01

DISTANCE FROM SOURCE 950.00 meters directed toward 20 degrees
 RECEPTOR HEIGHT 0.47 meters

IMPACT AT THE
 AMBIENT BOUNDARY 0.1654E-01 0.1654E-01 0.1489E-01 0.9927E-02 0.1654E-02

DISTANCE FROM SOURCE 300.00 meters directed toward 290 degrees
 RECEPTOR HEIGHT 8.27 meters

10/21/25
00:35:42

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***** STACK PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

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***** FLOW SECTOR ANALYSIS *****
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25 meter receptor spacing: 339. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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TEMPORAL PERIOD	FLOW SECTOR	BUILD WIDTH	BUILD LENGTH	XBADJ	YBADJ	MAXIMUM	IMPACT	RECEPTOR	
						1-HR CONC (ug/m3)	DIST (m)	HEIGHT (m)	
10		107.16	66.61	-33.30	0.00	27.48	339.0	4.60	ANN
20		111.07	81.19	-40.59	0.00	29.68	339.0	3.94	ANN
30		111.60	93.30	-46.65	0.00	30.48	339.0	4.57	ANN
40		108.74	102.58	-51.29	0.00	30.48	339.0	3.63	ANN
50		102.58	108.74	-54.37	0.00	30.40	339.0	3.06	ANN
60		93.30	111.60	-55.80	0.00	29.82	339.0	2.46	ANN
70		81.19	111.07	-55.54	0.00	29.07	339.0	1.78	ANN
80		66.61	107.16	-53.58	0.00	26.49	339.0	-0.53	ANN
90		50.00	100.00	-50.00	0.00	21.40	339.0	-3.02	ANN
100		66.61	107.16	-53.58	0.00	26.59	339.0	-0.35	ANN
110		81.19	111.07	-55.54	0.00	29.06	339.0	5.26	ANN
120		93.30	111.60	-55.80	0.00	29.78	339.0	5.48	ANN
130		102.58	108.74	-54.37	0.00	30.34	339.0	6.12	ANN
140		108.74	102.58	-51.29	0.00	30.41	339.0	8.28	ANN
150		111.60	93.30	-46.65	0.00	30.47	339.0	8.53	ANN
160		111.07	81.19	-40.59	0.00	29.66	339.0	3.06	ANN
170		107.16	66.61	-33.30	0.00	27.35	339.0	1.93	ANN
180		100.00	50.00	-25.00	0.00	24.08	339.0	0.31	ANN
190		107.16	66.61	-33.30	0.00	26.25	339.0	-1.62	ANN
200		111.07	81.19	-40.59	0.00	29.40	339.0	-0.39	ANN
210		111.60	93.30	-46.65	0.00	30.49	339.0	3.27	ANN
220		108.74	102.58	-51.29	0.00	30.43	339.0	7.16	ANN
230		102.58	108.74	-54.37	0.00	30.21	339.0	10.79	ANN
240		93.30	111.60	-55.80	0.00	29.62	339.0	14.11	ANN
250		81.19	111.07	-55.54	0.00	29.04	339.0	11.37	ANN
260		66.61	107.16	-53.58	0.00	26.80	339.0	3.50	ANN
270		50.00	100.00	-50.00	0.00	21.44	339.0	-2.95	ANN
280		66.61	107.16	-53.58	0.00	25.41	339.0	-2.53	ANN
290		81.19	111.07	-55.54	0.00	27.87	339.0	-2.18	ANN
300		93.30	111.60	-55.80	0.00	29.82	339.0	1.71	ANN
310		102.58	108.74	-54.37	0.00	30.40	339.0	2.24	ANN
320*		108.74	102.58	-51.29	0.00	30.50	339.0	2.26	ANN
330		111.60	93.30	-46.65	0.00	30.49	339.0	1.08	ANN
340		111.07	81.19	-40.59	0.00	29.38	339.0	-0.42	ANN
350		107.16	66.61	-33.30	0.00	27.34	339.0	1.17	ANN
360		100.00	50.00	-25.00	0.00	24.42	339.0	4.91	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.12

BOWEN RATIO: 0.80

ROUGHNESS LENGTH: 1.300 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 02 21 21 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	0.371	-9.000	0.020	-999.	519.	76.1	1.300	0.80	0.12	2.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 3.6 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 35.9 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 55.9 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 02 21 21 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	0.371	-9.000	0.020	-999.	519.	76.1	1.300	0.80	0.12	2.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 3.6 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 35.9 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 55.9 meters

***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
339.00	30.50	2.26	3925.00	2.917	-0.45
350.00	29.50	1.52	3950.00	2.911	-0.37
375.00	27.24	3.05	3975.00	2.906	-0.30
400.00	25.05	2.75	4000.00	2.903	0.21
425.00	22.93	6.05	4025.00	2.895	-0.12
450.00	20.93	7.90	4050.00	2.880	1.62
475.00	19.06	9.76	4075.00	2.884	0.40
500.00	17.31	10.78	4100.00	2.868	1.63
525.00	15.72	12.30	4125.00	2.872	0.05
550.00	14.26	12.16	4150.00	2.865	0.24
575.00	12.95	12.68	4175.00	2.844	-1.37
600.00	11.77	12.99	4200.00	2.834	2.70
625.00	10.71	13.74	4225.00	2.833	-1.28
650.00	9.744	14.56	4250.00	2.840	0.24
675.00	8.892	15.35	4275.00	2.824	1.75
700.00	8.152	16.33	4300.00	2.812	2.49
725.00	7.509	17.19	4325.00	2.806	2.49
750.00	6.928	17.44	4350.00	2.800	2.49
775.00	6.417	17.45	4375.00	2.794	2.49
800.00	5.988	17.72	4400.00	2.789	-1.33
825.00	5.641	18.40	4425.00	2.782	2.48
850.00	5.363	19.33	4450.00	2.773	2.90
875.00	5.150	20.55	4475.00	2.764	3.31
900.00	5.004	22.15	4500.00	2.751	4.30
925.00	4.888	23.60	4525.00	2.753	-1.76
950.00	4.835	25.52	4550.00	2.765	0.02
975.00	4.811	27.45	4575.00	2.752	1.53
1000.00	4.792	29.19	4600.00	2.745	1.70

1025.00	4.756	30.52	4625.00	2.740	1.53
1050.00	4.709	31.58	4650.00	2.731	1.94
1075.00	4.645	32.28	4675.00	2.722	2.53
1100.00	4.580	32.87	4700.00	2.709	3.59
1125.00	4.526	33.55	4725.00	2.697	4.60
1150.00	4.485	34.39	4750.00	2.687	5.24
1175.00	4.415	34.67	4775.00	2.690	-1.91
1200.00	4.391	35.76	4800.00	2.694	-0.96
1225.00	4.341	36.36	4825.00	2.693	-0.46
1250.00	4.271	36.48	4850.00	2.692	0.05
1275.00	4.199	36.46	4875.00	2.685	0.60
1300.00	4.131	36.47	4900.00	2.676	-0.37
1325.00	4.067	36.50	4925.00	2.670	-0.37
1350.00	3.995	36.23	4950.00	2.661	-0.66
1375.00	3.908	35.41	4975.00	2.658	-0.31
1400.00	3.861	35.70	5000.00	2.652	-0.30
1425.00	3.850	37.18	5100.00	2.629	-0.22
1450.00	3.815	37.76	5200.00	2.608	0.23
1475.00	3.790	37.69	5300.00	2.583	-0.06
1500.00	3.751	37.28	5400.00	2.548	-1.29
1525.00	3.717	36.96	5500.00	2.538	0.12
1550.00	3.710	37.28	5600.00	2.513	0.98
1575.00	3.702	37.62	5700.00	2.476	5.17
1600.00	3.698	38.08	5800.00	2.467	1.56
1625.00	3.696	38.61	5900.00	2.442	2.49
1650.00	3.692	39.12	6000.00	2.423	-0.28
1675.00	3.697	39.89	6100.00	2.402	1.49
1700.00	3.689	40.36	6200.00	2.381	1.31
1725.00	3.667	40.41	6300.00	2.355	3.60
1750.00	3.619	39.66	6400.00	2.341	0.55
1775.00	3.592	0.43	6500.00	2.313	4.41
1800.00	3.576	0.52	6600.00	2.299	1.69
1825.00	3.560	0.45	6700.00	2.279	1.67
1850.00	3.531	1.24	6800.00	2.254	4.68
1875.00	3.521	-0.12	6900.00	2.234	5.47
1900.00	3.494	1.45	7000.00	2.221	1.36
1925.00	3.490	0.20	7100.00	2.203	0.00
1950.00	3.450	-0.57	7200.00	2.184	1.49
1975.00	3.443	33.34	7300.00	2.165	1.84
2000.00	3.438	33.22	7400.00	2.146	2.58
2025.00	3.432	32.89	7500.00	2.130	0.86
2050.00	3.425	32.50	7600.00	2.112	1.28
2075.00	3.416	31.92	7700.00	2.095	0.53
2100.00	3.408	31.38	7800.00	2.077	0.52
2125.00	3.398	31.34	7900.00	2.060	2.22
2150.00	3.388	30.86	8000.00	2.044	0.46
2175.00	3.376	30.10	8100.00	2.027	0.53
2200.00	3.364	29.22	8200.00	2.009	5.49
2225.00	3.352	28.93	8300.00	1.993	5.49
2250.00	3.340	29.06	8400.00	1.979	1.75

2275.00	3.326	28.53	8500.00	1.963	0.40
2300.00	3.312	27.27	8600.00	1.948	2.17
2325.00	3.296	24.97	8700.00	1.933	2.15
2350.00	3.277	21.86	8800.00	1.917	5.00
2375.00	3.258	18.93	8900.00	1.903	4.22
2400.00	3.240	17.45	9000.00	1.888	5.49
2425.00	3.223	16.55	9100.00	1.874	5.86
2450.00	3.205	15.64	9200.00	1.860	5.80
2475.00	3.186	14.47	9300.00	1.846	2.21
2500.00	3.168	13.65	9400.00	1.833	4.08
2525.00	3.156	14.80	9500.00	1.819	6.21
2550.00	3.143	15.88	9600.00	1.804	8.94
2575.00	3.129	16.90	9700.00	1.793	3.97
2600.00	3.129	0.89	9800.00	1.779	6.29
2625.00	3.126	1.30	9900.00	1.767	4.57
2650.00	3.122	1.79	10000.00	1.754	4.82
2675.00	3.140	-0.42	10100.00	1.741	4.13
2700.00	3.148	0.34	10200.00	1.729	5.03
2725.00	3.144	-0.41	10300.00	1.717	4.31
2750.00	3.151	0.27	10400.00	1.705	70.15
2775.00	3.150	0.61	10500.00	1.694	70.16
2800.00	3.149	-0.25	10600.00	1.683	67.25
2825.00	3.150	-0.15	10700.00	1.672	73.43
2850.00	3.152	0.24	10800.00	1.661	66.49
2875.00	3.151	0.11	10900.00	1.650	70.83
2900.00	3.149	0.52	11000.00	1.640	72.67
2925.00	3.148	0.17	11100.00	1.629	73.39
2950.00	3.146	0.33	11200.00	1.619	72.30
2975.00	3.131	-0.90	11300.00	1.609	78.28
3000.00	3.123	1.57	11400.00	1.599	76.08
3025.00	3.118	1.65	11500.00	1.588	69.53
3050.00	3.130	0.66	11600.00	1.577	66.72
3075.00	3.126	-0.17	11700.00	1.567	67.86
3100.00	3.108	-1.28	11800.00	1.558	69.93
3125.00	3.099	-1.60	11900.00	1.549	94.83
3150.00	3.095	-1.51	12000.00	1.538	93.46
3175.00	3.094	-1.19	12100.00	1.528	66.64
3200.00	3.089	-1.08	12200.00	1.520	86.06
3225.00	3.095	0.48	12300.00	1.513	80.04
3250.00	3.064	-2.16	12400.00	1.503	81.54
3275.00	3.050	-2.85	12500.00	1.494	76.07
3300.00	3.056	-1.79	12600.00	1.486	78.88
3325.00	3.068	-0.21	12700.00	1.477	83.46
3350.00	3.062	0.71	12800.00	1.468	80.75
3375.00	3.050	1.16	12900.00	1.459	93.03
3400.00	3.034	1.90	13000.00	1.451	84.66
3425.00	3.016	2.79	13100.00	1.443	83.29
3450.00	3.004	-3.14	13200.00	1.434	85.48
3475.00	2.995	3.55	13300.00	1.426	88.06
3500.00	2.982	-4.10	13400.00	1.419	93.00

3525.00	3.007	-1.29	13500.00	1.413	94.99
3550.00	3.001	1.65	13600.00	1.406	95.59
3575.00	3.006	0.74	13700.00	1.394	86.64
3600.00	2.995	-0.73	13800.00	1.386	88.41
3625.00	2.995	0.63	13900.00	1.380	93.36
3650.00	2.988	0.75	14000.00	1.373	93.74
3675.00	2.983	-0.08	14100.00	1.368	95.86
3700.00	2.978	0.00	14200.00	1.355	87.64
3725.00	2.972	0.18	14300.00	1.353	95.79
3750.00	2.962	0.82	14400.00	1.345	95.47
3775.00	2.953	1.07	14500.00	1.338	95.50
3800.00	2.952	0.64	14600.00	1.331	95.86
3825.00	2.945	0.66	14700.00	1.323	95.51
3850.00	2.934	1.09	14800.00	1.313	92.69
3875.00	2.927	1.23	14900.00	1.305	91.22
3900.00	2.927	0.61	15000.00	1.298	91.13

 ***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	30.50	30.50	27.45	18.30	3.050

DISTANCE FROM SOURCE 339.00 meters directed toward 320 degrees
 RECEPTOR HEIGHT 2.26 meters

IMPACT AT THE
 AMBIENT BOUNDARY 30.50 30.50 27.45 18.30 3.050

DISTANCE FROM SOURCE 339.00 meters directed toward 320 degrees
 RECEPTOR HEIGHT 2.26 meters

10/21/25
00:37:17

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***** STACK PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

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***** FLOW SECTOR ANALYSIS *****
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25 meter receptor spacing: 268. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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TEMPORAL PERIOD	FLOW SECTOR	BUILD WIDTH	BUILD LENGTH	XBADJ	YBADJ	MAXIMUM 1-HR CONC	IMPACT DIST	RECEPTOR HEIGHT	
						(ug/m3)	(m)	(m)	
10		107.16	66.61	-33.30	0.00	43.46	268.0	3.35	ANN
20*		111.07	81.19	-40.59	0.00	45.71	268.0	2.72	ANN
30		111.60	93.30	-46.65	0.00	45.47	268.0	1.38	ANN
40		108.74	102.58	-51.29	0.00	45.39	268.0	-0.34	ANN
50		102.58	108.74	-54.37	0.00	43.00	268.0	-2.49	ANN
60		93.30	111.60	-55.80	0.00	40.68	268.0	-4.64	ANN
70		81.19	111.07	-55.54	0.00	38.57	268.0	-6.10	ANN
80		66.61	107.16	-53.58	0.00	36.17	268.0	-6.63	ANN
90		50.00	100.00	-50.00	0.00	33.38	268.0	-5.48	ANN
100		66.61	107.16	-53.58	0.00	38.85	268.0	-3.29	ANN
110		81.19	111.07	-55.54	0.00	42.03	268.0	-1.95	ANN
120		93.30	111.60	-55.80	0.00	43.93	268.0	-0.78	ANN
130		102.58	108.74	-54.37	0.00	44.13	268.0	-1.15	ANN
140		108.74	102.58	-51.29	0.00	44.69	268.0	-1.17	ANN
150		111.60	93.30	-46.65	0.00	44.91	268.0	-0.65	ANN
160		111.07	81.19	-40.59	0.00	45.20	268.0	-0.56	ANN
170		107.16	66.61	-33.30	0.00	43.40	268.0	0.57	ANN
180		100.00	50.00	-25.00	0.00	39.69	268.0	2.22	ANN
190		107.16	66.61	-33.30	0.00	43.45	268.0	3.31	ANN
200		111.07	81.19	-40.59	0.00	45.66	268.0	4.88	ANN
210		111.60	93.30	-46.65	0.00	45.20	268.0	7.15	ANN
220		108.74	102.58	-51.29	0.00	44.84	268.0	10.68	ANN
230		102.58	108.74	-54.37	0.00	43.89	268.0	13.24	ANN
240		93.30	111.60	-55.80	0.00	43.08	268.0	15.84	ANN
250		81.19	111.07	-55.54	0.00	42.36	268.0	17.49	ANN
260		66.61	107.16	-53.58	0.00	41.17	268.0	16.37	ANN
270		50.00	100.00	-50.00	0.00	38.32	268.0	12.18	ANN
280		66.61	107.16	-53.58	0.00	41.46	268.0	9.38	ANN
290		81.19	111.07	-55.54	0.00	43.22	268.0	8.95	ANN
300		93.30	111.60	-55.80	0.00	44.03	268.0	8.58	ANN
310		102.58	108.74	-54.37	0.00	44.56	268.0	8.17	ANN
320		108.74	102.58	-51.29	0.00	45.13	268.0	8.37	ANN
330		111.60	93.30	-46.65	0.00	45.13	268.0	8.16	ANN
340		111.07	81.19	-40.59	0.00	45.60	268.0	6.68	ANN
350		107.16	66.61	-33.30	0.00	43.51	268.0	4.63	ANN
360		100.00	50.00	-25.00	0.00	39.90	268.0	4.07	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.12

BOWEN RATIO: 0.80

ROUGHNESS LENGTH: 1.300 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 02 21 21 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	0.371	-9.000	0.020	-999.	519.	76.1	1.300	0.80	0.12	2.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 3.6 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 26.3 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 46.3 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 02 21 21 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	0.371	-9.000	0.020	-999.	519.	76.1	1.300	0.80	0.12	2.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 3.6 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 26.3 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 46.3 meters

***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
268.00	45.71	2.72	3900.00	3.401	0.20
275.00	44.90	2.77	3925.00	3.388	1.03
300.00	42.03	2.77	3950.00	3.367	2.29
325.00	39.18	2.38	3975.00	3.343	3.72
350.00	36.34	1.93	4000.00	3.322	5.06
375.00	33.54	1.47	4025.00	3.340	2.87
400.00	30.86	1.33	4050.00	3.328	3.32
425.00	28.33	1.25	4075.00	3.298	5.52
450.00	25.97	0.73	4100.00	3.281	-4.68
475.00	23.80	7.45	4125.00	3.280	-4.16
500.00	21.83	7.97	4150.00	3.287	4.67
525.00	20.00	4.53	4175.00	3.296	3.18
550.00	18.39	5.36	4200.00	3.289	-1.86
575.00	16.93	6.05	4225.00	3.293	-1.04
600.00	15.63	2.70	4250.00	3.284	-1.22
625.00	14.49	2.40	4275.00	3.273	-1.50
650.00	13.49	2.43	4300.00	3.257	-2.10
675.00	12.53	2.71	4325.00	3.257	2.95
700.00	11.67	2.76	4350.00	3.249	-1.68
725.00	11.04	1.28	4375.00	3.264	0.11
750.00	10.39	-0.22	4400.00	3.241	2.41
775.00	9.711	1.55	4425.00	3.237	-0.95
800.00	9.215	1.10	4450.00	3.233	-0.68
825.00	8.788	0.10	4475.00	3.231	1.11
850.00	8.329	1.37	4500.00	3.214	2.30
875.00	7.970	1.25	4525.00	3.193	-2.08
900.00	7.673	0.73	4550.00	3.176	5.31
925.00	7.391	0.06	4575.00	3.178	4.16

950.00	7.115	0.29	4600.00	3.178	3.39
975.00	6.840	1.57	4625.00	3.192	0.14
1000.00	6.610	2.89	4650.00	3.178	1.48
1025.00	6.425	2.97	4675.00	3.177	0.47
1050.00	6.257	-0.63	4700.00	3.158	-0.93
1075.00	6.152	0.22	4725.00	3.155	-0.58
1100.00	6.000	0.76	4750.00	3.156	0.27
1125.00	5.855	1.38	4775.00	3.145	1.16
1150.00	5.722	2.07	4800.00	3.129	-0.91
1175.00	5.602	2.32	4825.00	3.134	0.46
1200.00	5.507	27.76	4850.00	3.121	1.53
1225.00	5.479	30.83	4875.00	3.109	2.36
1250.00	5.446	33.92	4900.00	3.097	3.24
1275.00	5.384	36.09	4925.00	3.088	3.54
1300.00	5.302	37.37	4950.00	3.079	3.94
1325.00	5.205	37.52	4975.00	3.086	1.58
1350.00	5.097	36.52	5000.00	3.058	5.15
1375.00	5.041	36.54	5100.00	3.056	0.43
1400.00	5.038	37.39	5200.00	3.027	0.76
1425.00	5.033	38.24	5300.00	2.977	-1.91
1450.00	5.022	38.99	5400.00	2.973	0.51
1475.00	4.974	38.94	5500.00	2.939	2.59
1500.00	4.923	38.79	5600.00	2.915	-0.33
1525.00	4.891	39.10	5700.00	2.886	-0.53
1550.00	4.859	39.42	5800.00	2.866	-0.04
1575.00	4.839	40.06	5900.00	2.834	3.15
1600.00	4.807	40.40	6000.00	2.814	0.95
1625.00	4.762	40.38	6100.00	2.789	0.50
1650.00	4.726	40.61	6200.00	2.764	1.41
1675.00	4.686	40.67	6300.00	2.737	2.53
1700.00	4.683	41.98	6400.00	2.709	4.55
1725.00	4.680	43.29	6500.00	2.679	7.24
1750.00	4.654	43.93	6600.00	2.662	-0.48
1775.00	4.623	44.39	6700.00	2.644	2.14
1800.00	4.576	44.26	6800.00	2.621	0.82
1825.00	4.530	44.19	6900.00	2.590	7.39
1850.00	4.484	44.01	7000.00	2.576	0.03
1875.00	4.453	44.44	7100.00	2.554	2.03
1900.00	4.413	44.52	7200.00	2.532	3.01
1925.00	4.381	44.86	7300.00	2.507	6.40
1950.00	4.344	45.01	7400.00	2.489	4.43
1975.00	4.318	45.63	7500.00	2.469	2.35
2000.00	4.291	46.27	7600.00	2.449	2.37
2025.00	4.249	46.09	7700.00	2.426	6.09
2050.00	4.201	45.60	7800.00	2.407	0.70
2075.00	4.144	44.48	7900.00	2.389	2.64
2100.00	4.089	43.32	8000.00	2.367	0.60
2125.00	4.043	42.52	8100.00	2.350	1.97
2150.00	3.995	41.52	8200.00	2.332	3.47
2175.00	3.950	40.51	8300.00	2.313	3.79

2200.00	3.908	39.56	8400.00	2.294	6.23
2225.00	3.868	38.60	8500.00	2.277	3.91
2250.00	3.831	37.73	8600.00	2.259	4.43
2275.00	3.800	37.52	8700.00	2.242	5.16
2300.00	3.768	37.00	8800.00	2.224	3.57
2325.00	3.737	36.64	8900.00	2.207	3.96
2350.00	3.703	35.63	9000.00	2.191	5.12
2375.00	3.669	34.38	9100.00	2.174	5.74
2400.00	3.646	0.04	9200.00	2.158	4.90
2425.00	3.653	-0.01	9300.00	2.142	4.54
2450.00	3.659	0.43	9400.00	2.126	5.18
2475.00	3.664	0.46	9500.00	2.110	6.23
2500.00	3.669	0.46	9600.00	2.095	5.39
2525.00	3.670	0.58	9700.00	2.079	6.40
2550.00	3.669	0.72	9800.00	2.064	8.37
2575.00	3.677	0.55	9900.00	2.049	9.86
2600.00	3.679	-0.05	10000.00	2.034	10.26
2625.00	3.672	-0.54	10100.00	2.020	10.68
2650.00	3.682	0.15	10200.00	2.006	10.93
2675.00	3.663	1.19	10300.00	1.992	7.43
2700.00	3.656	-1.54	10400.00	1.978	6.68
2725.00	3.667	-0.81	10500.00	1.965	83.18
2750.00	3.679	0.36	10600.00	1.950	14.46
2775.00	3.669	0.83	10700.00	1.937	7.44
2800.00	3.659	-1.02	10800.00	1.925	74.04
2825.00	3.660	-0.76	10900.00	1.913	77.57
2850.00	3.661	-0.54	11000.00	1.901	76.34
2875.00	3.666	0.00	11100.00	1.890	79.22
2900.00	3.649	1.01	11200.00	1.878	80.76
2925.00	3.652	0.72	11300.00	1.867	83.39
2950.00	3.644	-0.53	11400.00	1.856	90.66
2975.00	3.620	-1.81	11500.00	1.845	92.37
3000.00	3.603	-2.56	11600.00	1.834	89.97
3025.00	3.594	-2.79	11700.00	1.823	92.43
3050.00	3.592	-2.45	11800.00	1.817	95.29
3075.00	3.596	-1.75	11900.00	1.799	85.63
3100.00	3.582	-2.22	12000.00	1.790	92.59
3125.00	3.589	-1.26	12100.00	1.779	90.07
3150.00	3.602	0.13	12200.00	1.764	79.48
3175.00	3.576	1.53	12300.00	1.754	81.99
3200.00	3.590	0.29	12400.00	1.747	88.14
3225.00	3.570	-0.89	12500.00	1.737	90.50
3250.00	3.553	-1.64	12600.00	1.733	95.85
3275.00	3.524	-3.24	12700.00	1.716	89.51
3300.00	3.496	4.44	12800.00	1.706	89.37
3325.00	3.538	1.69	12900.00	1.697	90.74
3350.00	3.534	-1.21	13000.00	1.687	91.38
3375.00	3.509	-2.52	13100.00	1.672	82.27
3400.00	3.491	-3.31	13200.00	1.666	87.72
3425.00	3.490	-2.92	13300.00	1.661	94.14

3450.00	3.496	-2.02	13400.00	1.649	92.69
3475.00	3.506	-0.86	13500.00	1.639	92.32
3500.00	3.505	-0.50	13600.00	1.632	93.78
3525.00	3.503	-0.15	13700.00	1.620	90.68
3550.00	3.496	-0.20	13800.00	1.613	93.61
3575.00	3.479	-0.88	13900.00	1.602	91.35
3600.00	3.475	-0.69	14000.00	1.598	95.38
3625.00	3.478	0.11	14100.00	1.586	93.31
3650.00	3.471	0.23	14200.00	1.581	95.94
3675.00	3.460	0.87	14300.00	1.567	92.49
3700.00	3.455	0.68	14400.00	1.560	93.70
3725.00	3.450	-0.03	14500.00	1.549	91.35
3750.00	3.430	-0.96	14600.00	1.541	91.35
3775.00	3.424	1.49	14700.00	1.533	92.55
3800.00	3.424	-0.38	14800.00	1.524	91.35
3825.00	3.385	-2.70	14900.00	1.517	92.72
3850.00	3.390	-1.79	15000.00	1.508	92.72
3875.00	3.406	-0.20			

 ***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	45.71	45.71	41.14	27.43	4.571

DISTANCE FROM SOURCE 268.00 meters directed toward 20 degrees
 RECEPTOR HEIGHT 2.72 meters

IMPACT AT THE AMBIENT BOUNDARY	45.71	45.71	41.14	27.43	4.571
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DISTANCE FROM SOURCE 268.00 meters directed toward 20 degrees
 RECEPTOR HEIGHT 2.72 meters

10/21/25
00:34:05

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***** STACK PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

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***** FLOW SECTOR ANALYSIS *****
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25 meter receptor spacing: 285. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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TEMPORAL PERIOD	FLOW SECTOR	BUILD WIDTH	BUILD LENGTH	XBADJ	YBADJ	MAXIMUM	IMPACT	RECEPTOR	
						1-HR CONC (ug/m3)	DIST (m)	HEIGHT (m)	
10		107.16	66.61	-33.30	0.00	157.8	285.0	1.32	ANN
20		111.07	81.19	-40.59	0.00	163.3	285.0	0.86	ANN
30		111.60	93.30	-46.65	0.00	165.1	285.0	-0.66	ANN
40		108.74	102.58	-51.29	0.00	161.7	285.0	-2.16	ANN
50		102.58	108.74	-54.37	0.00	155.2	285.0	-4.43	ANN
60		93.30	111.60	-55.80	0.00	147.6	285.0	-6.72	ANN
70		81.19	111.07	-55.54	0.00	141.5	285.0	-8.35	ANN
80		66.61	107.16	-53.58	0.00	132.6	285.0	-8.40	ANN
90		50.00	100.00	-50.00	0.00	122.8	285.0	-6.73	ANN
100		66.61	107.16	-53.58	0.00	140.2	285.0	-4.51	ANN
110		81.19	111.07	-55.54	0.00	151.6	285.0	-3.58	ANN
120		93.30	111.60	-55.80	0.00	154.8	285.0	-3.34	ANN
130		102.58	108.74	-54.37	0.00	155.7	285.0	-4.22	ANN
140		108.74	102.58	-51.29	0.00	159.2	285.0	-3.32	ANN
150		111.60	93.30	-46.65	0.00	159.8	285.0	-3.02	ANN
160		111.07	81.19	-40.59	0.00	156.7	285.0	-2.74	ANN
170		107.16	66.61	-33.30	0.00	153.7	285.0	-1.53	ANN
180		100.00	50.00	-25.00	0.00	149.4	285.0	-0.66	ANN
190		107.16	66.61	-33.30	0.00	157.8	285.0	0.29	ANN
200		111.07	81.19	-40.59	0.00	163.2	285.0	2.05	ANN
210*		111.60	93.30	-46.65	0.00	166.0	285.0	4.65	ANN
220		108.74	102.58	-51.29	0.00	164.5	285.0	8.06	ANN
230		102.58	108.74	-54.37	0.00	160.0	285.0	12.82	ANN
240		93.30	111.60	-55.80	0.00	155.2	285.0	15.85	ANN
250		81.19	111.07	-55.54	0.00	151.9	285.0	17.19	ANN
260		66.61	107.16	-53.58	0.00	144.6	285.0	15.04	ANN
270		50.00	100.00	-50.00	0.00	133.4	285.0	11.54	ANN
280		66.61	107.16	-53.58	0.00	147.7	285.0	8.49	ANN
290		81.19	111.07	-55.54	0.00	157.4	285.0	7.76	ANN
300		93.30	111.60	-55.80	0.00	160.0	285.0	7.80	ANN
310		102.58	108.74	-54.37	0.00	163.2	285.0	6.71	ANN
320		108.74	102.58	-51.29	0.00	165.1	285.0	6.40	ANN
330		111.60	93.30	-46.65	0.00	165.6	285.0	6.36	ANN
340		111.07	81.19	-40.59	0.00	162.7	285.0	5.63	ANN
350		107.16	66.61	-33.30	0.00	157.7	285.0	3.44	ANN
360		100.00	50.00	-25.00	0.00	151.4	285.0	2.36	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.12

BOWEN RATIO: 0.80

ROUGHNESS LENGTH: 1.300 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 01 04 4 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-17.77	0.187	-9.000	0.020	-999.	187.	35.4	1.300	0.80	0.12	0.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 2.0 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 15.0 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 5.7 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 20.7 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 01 04 4 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-17.77	0.187	-9.000	0.020	-999.	187.	35.4	1.300	0.80	0.12	0.50

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 2.0 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 15.0 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 5.7 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 20.7 meters

***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
285.00	166.0	4.65	3900.00	7.421	8.26
300.00	157.3	4.71	3925.00	7.394	9.46
325.00	143.7	4.51	3950.00	7.366	8.70
350.00	131.1	4.12	3975.00	7.339	9.50
375.00	119.2	3.18	4000.00	7.312	10.11
400.00	108.2	7.43	4025.00	7.285	10.16
425.00	98.26	8.15	4050.00	7.258	10.39
450.00	89.16	8.13	4075.00	7.232	10.78
475.00	80.82	8.44	4100.00	7.205	11.16
500.00	73.22	9.22	4125.00	7.179	11.19
525.00	66.35	10.13	4150.00	7.153	12.14
550.00	60.06	10.33	4175.00	7.125	13.64
575.00	54.35	10.52	4200.00	7.098	14.61
600.00	49.19	10.66	4225.00	7.075	9.42
625.00	44.41	10.29	4250.00	7.050	10.14
650.00	40.12	10.08	4275.00	7.026	10.82
675.00	36.44	10.45	4300.00	7.001	12.03
700.00	33.31	11.24	4325.00	6.976	13.28
725.00	30.73	12.15	4350.00	6.951	14.44
750.00	28.42	12.87	4375.00	6.924	15.94
775.00	26.40	13.65	4400.00	6.899	16.64
800.00	24.52	13.78	4425.00	6.875	17.05
825.00	22.92	15.69	4450.00	6.853	16.08
850.00	21.60	16.51	4475.00	6.830	15.80
875.00	20.18	15.64	4500.00	6.807	15.96
900.00	19.02	15.52	4525.00	6.786	13.15
925.00	18.32	17.09	4550.00	6.761	10.88
950.00	17.66	18.76	4575.00	6.735	18.12

975.00	17.02	19.95	4600.00	6.710	19.01
1000.00	16.42	20.94	4625.00	6.689	9.48
1025.00	15.80	21.24	4650.00	6.670	11.11
1050.00	15.24	21.41	4675.00	6.648	11.40
1075.00	14.70	21.32	4700.00	6.627	12.08
1100.00	14.27	21.78	4725.00	6.605	12.43
1125.00	13.83	21.84	4750.00	6.584	13.45
1150.00	13.46	22.25	4775.00	6.563	14.07
1175.00	13.29	24.85	4800.00	6.541	14.99
1200.00	13.18	28.25	4825.00	6.519	15.70
1225.00	12.97	31.10	4850.00	6.497	16.92
1250.00	12.75	33.89	4875.00	6.476	17.44
1275.00	12.48	35.94	4900.00	6.455	18.12
1300.00	12.20	37.07	4925.00	6.434	17.94
1325.00	12.04	0.44	4950.00	6.413	18.10
1350.00	12.00	0.60	4975.00	6.393	18.53
1375.00	11.92	-0.31	5000.00	6.373	18.39
1400.00	11.85	-0.37	5100.00	6.293	18.36
1425.00	11.79	0.70	5200.00	6.215	18.31
1450.00	11.75	0.21	5300.00	6.140	16.68
1475.00	11.68	0.35	5400.00	6.066	17.37
1500.00	11.62	0.36	5500.00	5.993	18.36
1525.00	11.56	0.40	5600.00	5.923	18.36
1550.00	11.50	0.06	5700.00	5.854	18.71
1575.00	11.43	0.58	5800.00	5.786	21.05
1600.00	11.37	0.43	5900.00	5.721	19.87
1625.00	11.31	0.26	6000.00	5.657	21.40
1650.00	11.25	0.22	6100.00	5.594	22.36
1675.00	11.19	0.38	6200.00	5.532	19.66
1700.00	11.13	0.44	6300.00	5.473	20.44
1725.00	11.07	0.28	6400.00	5.414	23.61
1750.00	11.01	0.57	6500.00	5.357	23.93
1775.00	10.95	0.53	6600.00	5.301	24.07
1800.00	10.89	0.41	6700.00	5.246	26.53
1825.00	10.83	0.35	6800.00	5.193	25.58
1850.00	10.77	0.33	6900.00	5.140	27.39
1875.00	10.71	0.75	7000.00	5.088	28.37
1900.00	10.65	0.63	7100.00	5.038	27.58
1925.00	10.59	1.48	7200.00	4.989	27.83
1950.00	10.54	0.36	7300.00	4.940	27.75
1975.00	10.48	0.97	7400.00	4.893	27.28
2000.00	10.43	1.37	7500.00	4.846	28.02
2025.00	10.37	1.57	7600.00	4.801	27.88
2050.00	10.31	2.28	7700.00	4.756	29.81
2075.00	10.26	1.27	7800.00	4.712	29.77
2100.00	10.21	1.95	7900.00	4.668	27.42
2125.00	10.15	2.00	8000.00	4.626	32.13
2150.00	10.10	2.35	8100.00	4.584	30.60
2175.00	10.04	2.76	8200.00	4.542	36.26
2200.00	9.990	3.17	8300.00	4.503	34.93

2225.00	9.937	3.58	8400.00	4.464	30.54
2250.00	9.884	4.13	8500.00	4.425	34.15
2275.00	9.840	2.50	8600.00	4.387	33.92
2300.00	9.792	2.76	8700.00	4.349	30.49
2325.00	9.738	2.00	8800.00	4.312	29.98
2350.00	9.681	5.36	8900.00	4.277	35.23
2375.00	9.636	5.36	9000.00	4.241	34.39
2400.00	9.590	5.35	9100.00	4.206	32.66
2425.00	9.549	4.79	9200.00	4.172	35.21
2450.00	9.506	3.16	9300.00	4.138	36.38
2475.00	9.460	4.45	9400.00	4.104	39.65
2500.00	9.413	5.04	9500.00	4.070	43.30
2525.00	9.364	5.67	9600.00	4.037	44.39
2550.00	9.325	5.07	9700.00	4.008	35.65
2575.00	9.283	4.50	9800.00	3.976	37.18
2600.00	9.239	4.36	9900.00	3.946	37.95
2625.00	9.196	4.72	10000.00	3.915	38.24
2650.00	9.150	3.71	10100.00	3.885	38.59
2675.00	9.110	4.73	10200.00	3.856	38.96
2700.00	9.068	4.79	10300.00	3.827	41.27
2725.00	9.026	5.14	10400.00	3.798	43.84
2750.00	8.985	5.25	10500.00	3.770	40.55
2775.00	8.943	4.37	10600.00	3.742	39.45
2800.00	8.903	4.80	10700.00	3.715	42.98
2825.00	8.863	5.38	10800.00	3.688	38.85
2850.00	8.823	5.35	10900.00	3.661	40.64
2875.00	8.782	6.35	11000.00	3.635	42.34
2900.00	8.737	7.67	11100.00	3.609	43.06
2925.00	8.695	8.18	11200.00	3.584	43.13
2950.00	8.660	7.79	11300.00	3.558	41.49
2975.00	8.626	7.25	11400.00	3.534	45.07
3000.00	8.591	6.52	11500.00	3.509	45.71
3025.00	8.554	6.19	11600.00	3.485	48.20
3050.00	8.517	6.38	11700.00	3.461	47.36
3075.00	8.480	6.40	11800.00	3.438	49.05
3100.00	8.443	6.68	11900.00	3.415	48.33
3125.00	8.407	7.11	12000.00	3.392	48.75
3150.00	8.370	7.51	12100.00	3.369	49.94
3175.00	8.336	6.74	12200.00	3.347	49.36
3200.00	8.298	5.63	12300.00	3.325	50.36
3225.00	8.259	5.11	12400.00	3.303	50.98
3250.00	8.220	4.61	12500.00	3.282	50.64
3275.00	8.183	4.43	12600.00	3.260	48.46
3300.00	8.162	6.72	12700.00	3.239	49.91
3325.00	8.127	6.17	12800.00	3.218	52.70
3350.00	8.095	6.99	12900.00	3.198	50.28
3375.00	8.061	8.18	13000.00	3.177	48.09
3400.00	8.027	6.36	13100.00	3.158	51.48
3425.00	7.994	6.36	13200.00	3.138	52.62
3450.00	7.962	6.55	13300.00	3.119	51.59

3475.00	7.931	7.81	13400.00	3.099	51.35
3500.00	7.899	7.23	13500.00	3.080	51.36
3525.00	7.867	7.19	13600.00	3.061	52.30
3550.00	7.835	7.27	13700.00	3.043	53.36
3575.00	7.805	7.62	13800.00	3.024	51.45
3600.00	7.774	8.09	13900.00	3.006	49.69
3625.00	7.743	7.77	14000.00	2.988	52.67
3650.00	7.712	7.62	14100.00	2.970	53.27
3675.00	7.681	7.37	14200.00	2.952	54.05
3700.00	7.650	10.57	14300.00	2.935	53.90
3725.00	7.623	9.36	14400.00	2.918	51.41
3750.00	7.594	8.96	14500.00	2.900	59.56
3775.00	7.564	9.31	14600.00	2.884	58.38
3800.00	7.535	10.38	14700.00	2.867	57.74
3825.00	7.506	10.21	14800.00	2.850	63.08
3850.00	7.477	8.15	14900.00	2.833	50.10
3875.00	7.447	7.59	15000.00	2.817	50.36

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	166.0	166.0	149.4	99.62	16.60

DISTANCE FROM SOURCE 285.00 meters directed toward 210 degrees
 RECEPTOR HEIGHT 4.65 meters

IMPACT AT THE AMBIENT BOUNDARY	166.0	166.0	149.4	99.62	16.60
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DISTANCE FROM SOURCE 285.00 meters directed toward 210 degrees
 RECEPTOR HEIGHT 4.65 meters

10/21/25
00:44:15

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***** STACK PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

***** FLOW SECTOR ANALYSIS *****

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25 meter receptor spacing: 320. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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FLOW	MAXIMUM 1-HR CONC	IMPACT DIST	RECEPTOR HEIGHT	TEMPORAL
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SECTOR	(ug/m3)	(m)	(m)	PERIOD
10	35.80	320.0	1.55	ANN
20	35.32	320.0	0.67	ANN
30	35.27	320.0	0.59	ANN
40	35.03	320.0	-0.27	ANN
50	34.78	320.0	-0.65	ANN
60	33.93	320.0	-1.93	ANN
70	33.30	320.0	-2.89	ANN
80	32.98	320.0	-3.38	ANN
90	32.96	320.0	-3.41	ANN
100	32.87	320.0	-3.56	ANN
110	32.64	320.0	-3.92	ANN
120	32.64	320.0	-3.92	ANN
130	31.54	320.0	-5.73	ANN
140	30.60	320.0	-7.42	ANN
150	30.82	320.0	-7.01	ANN
160	31.84	320.0	-5.21	ANN
170	32.58	320.0	-4.01	ANN
180	32.22	320.0	-4.59	ANN
190	32.47	320.0	-4.19	ANN
200	34.65	320.0	-0.85	ANN
210	36.12	320.0	2.29	ANN
220	36.59	320.0	3.88	ANN
230	37.69	320.0	5.44	ANN
240	38.33	320.0	6.57	ANN
250	38.81	320.0	7.56	ANN
260	38.83	320.0	7.59	ANN
270	39.10	320.0	8.23	ANN
280*	39.42	320.0	9.01	ANN
290	39.40	320.0	8.97	ANN
300	39.28	320.0	8.66	ANN
310	39.11	320.0	8.25	ANN
320	38.99	320.0	7.96	ANN
330	38.50	320.0	6.89	ANN
340	36.81	320.0	4.16	ANN
350	36.54	320.0	3.82	ANN
360	36.47	320.0	3.50	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.12
BOWEN RATIO: 0.80
ROUGHNESS LENGTH: 1.300 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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10 01 04 4 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS
-17.77	0.187	-9.000	0.020	-999.	187.	35.4	1.300	0.80	0.12	0.50		
HT	REF	TA	HT									
10.0	311.2	2.0										

WIND SPEED AT STACK HEIGHT (non-downwash): 2.4 m/s
STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
ESTIMATED FINAL PLUME RISE (non-downwash): 6.5 meters
ESTIMATED FINAL PLUME HEIGHT (non-downwash): 26.5 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 01 04 4 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS
-17.77	0.187	-9.000	0.020	-999.	187.	35.4	1.300	0.80	0.12	0.50		
HT	REF	TA	HT									
10.0	311.2	2.0										

WIND SPEED AT STACK HEIGHT (non-downwash): 2.4 m/s
STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 20.0 meters
ESTIMATED FINAL PLUME RISE (non-downwash): 6.5 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 26.5 meters

***** AERSCREEN AUTOMATED DISTANCES *****
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
320.00	39.42	9.01	3925.00	5.908	7.64
325.00	39.16	9.34	3950.00	5.890	7.58
350.00	37.69	10.55	3975.00	5.872	2.43
375.00	35.81	10.54	4000.00	5.861	4.10
400.00	33.95	10.36	4025.00	5.843	5.35
425.00	32.32	10.55	4050.00	5.824	5.49
450.00	30.73	10.59	4075.00	5.805	5.60
475.00	29.44	11.16	4100.00	5.785	6.00
500.00	28.34	12.04	4125.00	5.764	6.96
525.00	27.43	13.34	4150.00	5.741	8.09
550.00	26.42	14.15	4175.00	5.717	9.23
575.00	25.30	14.28	4200.00	5.692	10.43
600.00	24.47	15.32	4225.00	5.665	12.09
625.00	23.48	15.41	4250.00	5.650	11.79
650.00	22.37	14.76	4275.00	5.629	12.43
675.00	21.61	15.30	4300.00	5.603	13.94
700.00	20.62	14.66	4325.00	5.582	14.84
725.00	20.17	16.19	4350.00	5.575	13.09
750.00	19.48	16.46	4375.00	5.569	11.20
775.00	19.07	18.05	4400.00	5.553	10.99
800.00	18.72	19.98	4425.00	5.529	12.48
825.00	18.20	20.80	4450.00	5.503	14.42
850.00	17.62	21.20	4475.00	5.478	15.99
875.00	17.40	24.26	4500.00	5.461	16.39
900.00	17.13	27.33	4525.00	5.449	15.59
925.00	16.78	30.10	4550.00	5.432	15.75
950.00	16.34	31.71	4575.00	5.415	16.11
975.00	15.90	32.55	4600.00	5.400	16.07
1000.00	15.47	32.79	4625.00	5.393	14.27
1025.00	15.06	33.34	4650.00	5.390	11.33
1050.00	14.68	34.11	4675.00	5.383	8.63
1075.00	14.31	34.99	4700.00	5.368	8.27
1100.00	13.96	35.78	4725.00	5.346	10.19
1125.00	13.61	36.16	4750.00	5.325	3.69
1150.00	13.29	36.64	4775.00	5.319	5.49
1175.00	12.97	36.72	4800.00	5.305	6.74

1200.00	12.67	37.33	4825.00	5.289	7.64
1225.00	12.39	38.03	4850.00	5.273	7.94
1250.00	12.11	38.25	4875.00	5.258	7.55
1275.00	11.84	38.41	4900.00	5.242	6.15
1300.00	11.59	38.46	4925.00	5.227	7.48
1325.00	11.34	38.59	4950.00	5.211	8.88
1350.00	11.10	38.57	4975.00	5.192	10.49
1375.00	10.87	38.80	5000.00	5.182	7.79
1400.00	10.65	38.64	5100.00	5.120	9.52
1425.00	10.44	38.78	5200.00	5.063	7.38
1450.00	10.24	39.61	5300.00	5.002	11.81
1475.00	10.05	40.96	5400.00	4.950	9.16
1500.00	9.856	41.05	5500.00	4.895	9.05
1525.00	9.672	41.62	5600.00	4.841	9.35
1550.00	9.495	41.59	5700.00	4.788	8.59
1575.00	9.322	41.50	5800.00	4.737	11.18
1600.00	9.155	41.31	5900.00	4.687	11.95
1625.00	8.993	41.50	6000.00	4.638	12.30
1650.00	8.837	41.54	6100.00	4.590	11.52
1675.00	8.685	41.62	6200.00	4.542	12.23
1700.00	8.537	41.71	6300.00	4.496	12.98
1725.00	8.396	42.27	6400.00	4.451	13.58
1750.00	8.258	42.55	6500.00	4.406	11.65
1775.00	8.122	42.20	6600.00	4.363	14.81
1800.00	7.983	41.29	6700.00	4.320	13.37
1825.00	7.872	-0.01	6800.00	4.278	13.24
1850.00	7.856	0.39	6900.00	4.237	13.72
1875.00	7.838	0.50	7000.00	4.197	16.78
1900.00	7.814	0.63	7100.00	4.157	14.27
1925.00	7.796	0.60	7200.00	4.118	19.12
1950.00	7.778	0.57	7300.00	4.080	16.39
1975.00	7.761	0.22	7400.00	4.043	17.65
2000.00	7.734	0.63	7500.00	4.006	19.26
2025.00	7.718	0.50	7600.00	3.970	19.21
2050.00	7.696	0.13	7700.00	3.935	19.17
2075.00	7.673	0.01	7800.00	3.900	20.57
2100.00	7.650	0.37	7900.00	3.865	21.27
2125.00	7.626	0.03	8000.00	3.832	20.83
2150.00	7.602	0.50	8100.00	3.799	20.16
2175.00	7.577	0.54	8200.00	3.766	20.22
2200.00	7.554	0.04	8300.00	3.734	21.91
2225.00	7.520	-0.23	8400.00	3.703	22.35
2250.00	7.504	0.48	8500.00	3.672	22.88
2275.00	7.471	0.84	8600.00	3.642	21.89
2300.00	7.442	0.97	8700.00	3.611	21.40
2325.00	7.416	1.04	8800.00	3.582	22.88
2350.00	7.392	0.99	8900.00	3.553	24.59
2375.00	7.375	0.57	9000.00	3.525	24.85
2400.00	7.342	-0.20	9100.00	3.497	26.28
2425.00	7.320	0.71	9200.00	3.469	24.84

2450.00	7.297	0.16	9300.00	3.442	25.89
2475.00	7.271	0.28	9400.00	3.415	25.29
2500.00	7.243	0.57	9500.00	3.388	23.66
2525.00	7.207	1.20	9600.00	3.363	25.44
2550.00	7.174	1.59	9700.00	3.337	26.45
2575.00	7.162	0.64	9800.00	3.312	26.55
2600.00	7.136	0.50	9900.00	3.287	28.02
2625.00	7.095	1.65	10000.00	3.262	27.93
2650.00	7.045	2.94	10100.00	3.238	32.18
2675.00	6.990	4.45	10200.00	3.214	26.58
2700.00	6.990	3.27	10300.00	3.190	32.90
2725.00	6.986	1.91	10400.00	3.168	30.09
2750.00	6.969	0.85	10500.00	3.145	29.59
2775.00	6.943	0.98	10600.00	3.122	29.59
2800.00	6.918	0.13	10700.00	3.100	30.54
2825.00	6.893	0.95	10800.00	3.078	30.90
2850.00	6.865	1.85	10900.00	3.056	31.51
2875.00	6.844	0.97	11000.00	3.035	32.65
2900.00	6.816	1.93	11100.00	3.014	32.14
2925.00	6.793	0.08	11200.00	2.993	32.97
2950.00	6.747	4.15	11300.00	2.973	34.27
2975.00	6.714	4.91	11400.00	2.952	34.16
3000.00	6.699	-0.59	11500.00	2.932	35.62
3025.00	6.696	0.71	11600.00	2.913	33.59
3050.00	6.673	1.15	11700.00	2.893	35.69
3075.00	6.648	0.75	11800.00	2.874	36.08
3100.00	6.626	1.38	11900.00	2.855	37.34
3125.00	6.602	1.23	12000.00	2.836	37.20
3150.00	6.579	2.29	12100.00	2.818	36.24
3175.00	6.552	3.27	12200.00	2.799	36.59
3200.00	6.530	3.24	12300.00	2.781	37.32
3225.00	6.510	1.81	12400.00	2.763	39.53
3250.00	6.487	1.76	12500.00	2.746	40.60
3275.00	6.465	2.44	12600.00	2.728	42.00
3300.00	6.442	2.73	12700.00	2.711	41.81
3325.00	6.415	3.96	12800.00	2.694	35.84
3350.00	6.396	3.43	12900.00	2.677	40.13
3375.00	6.375	2.55	13000.00	2.661	41.84
3400.00	6.352	3.73	13100.00	2.644	43.33
3425.00	6.323	5.00	13200.00	2.627	47.82
3450.00	6.294	6.06	13300.00	2.611	50.03
3475.00	6.279	5.29	13400.00	2.594	32.82
3500.00	6.265	2.25	13500.00	2.578	32.37
3525.00	6.245	3.71	13600.00	2.562	53.59
3550.00	6.219	5.02	13700.00	2.549	48.01
3575.00	6.197	5.16	13800.00	2.534	49.86
3600.00	6.178	4.98	13900.00	2.519	50.51
3625.00	6.156	5.32	14000.00	2.504	42.59
3650.00	6.130	6.18	14100.00	2.489	51.56
3675.00	6.112	5.85	14200.00	2.475	48.92

3700.00	6.092	5.94	14300.00	2.461	48.59
3725.00	6.075	5.29	14400.00	2.447	48.59
3750.00	6.058	4.09	14500.00	2.432	48.59
3775.00	6.038	3.59	14600.00	2.419	48.59
3800.00	6.016	3.10	14700.00	2.405	48.07
3825.00	5.997	3.43	14800.00	2.391	47.27
3850.00	5.978	3.70	14900.00	2.377	54.05
3875.00	5.956	5.65	15000.00	2.363	57.25
3900.00	5.931	7.03			

 ***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	39.42	39.42	35.48	23.65	3.942

DISTANCE FROM SOURCE 320.00 meters directed toward 280 degrees
 RECEPTOR HEIGHT 9.01 meters

IMPACT AT THE AMBIENT BOUNDARY	39.42	39.42	35.48	23.65	3.942
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DISTANCE FROM SOURCE 320.00 meters directed toward 280 degrees
 RECEPTOR HEIGHT 9.01 meters

** FLARE DATA Rate Height Heat HeatLoss

** 0.1000E+01 20.0000 0.1575E+09 0.550

** BUILDING DATA BPIP Height Max dim. Min dim. Orient. Direct. Offset

** N 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

** MAKEMET DATA MinT MaxT Speed AnemHt Surf Clim Albedo Bowen Length
SC FILE

** 244.70 311.20 0.5 10.000 0 0 0.1000 0.1000 0.0010
"NA"

** ADJUST U* Y

** TERRAIN DATA Terrain UTM East UTM North Zone Nada Probe
PROFBASE Use AERMAP elev

** Y 608112.7 5002668.0 20 4 15000.0
35.49 Y

** DISCRETE RECEPTORS Discflag Receptor file

** N "NA"

** UNITS/POPULATION	Units	R/U	Population	Amb. dist.	Flagpole	
Flagpole height						
**	M	R	0.	300.000	N	0.00

** FUMIGATION	Inversion	Break-up	Shoreline	Distance	Direct	Run
AERSCREEN						
**	N		Y	1310.00	-9.0	Y

** DEBUG OPTION	Debug
**	N

** OUTPUT FILE "AERSCREEN.OUT"

** Temporal sector: Annual, flow vector: 20 degrees, spatial sector: 1

CO STARTING

TITLEONE FLARE

** REFINE STAGE 3

MODELOPT CONC SCREEN

AVERTIME 1

POLLUTID OTHER

RUNORNOT RUN

CO FINISHED

SO STARTING

LOCATION SOURCE POINT	0.0	0.0	35.49
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SRCPARAM SOURCE	0.1000E+01	57.780	1273.000	20.000	8.318
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SRCGROUP ALL

SO FINISHED

RE STARTING

** Fence line receptor

DISCCART	300.00	0.00	35.98	35.98
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** Refined receptors

DISCCART	2725.00	0.00	80.20	80.20
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DISCCART	2730.00	0.00	80.57	80.57
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DISCCART	2735.00	0.00	80.94	80.94
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DISCCART	2740.00	0.00	81.30	81.30
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DISCCART	2745.00	0.00	81.67	81.67
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DISCCART	2750.00	0.00	82.04	82.04
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DISCCART	2755.00	0.00	82.40	82.40
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DISCCART	2760.00	0.00	82.67	82.67
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DISCCART	2765.00	0.00	82.94	82.94
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DISCCART	2770.00	0.00	83.22	83.22
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DISCCART	2775.00	0.00	83.52	83.52
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DISCCART	2780.00	0.00	83.83	83.83
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DISCCART	2785.00	0.00	84.15	84.15
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DISCCART	2790.00	0.00	84.44	84.44
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DISCCART	2795.00	0.00	84.69	84.69
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DISCCART	2800.00	0.00	84.94	84.94
DISCCART	2805.00	0.00	85.19	85.19
DISCCART	2810.00	0.00	85.44	85.44
DISCCART	2815.00	0.00	85.69	85.69
DISCCART	2820.00	0.00	85.94	85.94
DISCCART	2825.00	0.00	86.06	86.06
DISCCART	2830.00	0.00	86.12	86.12
DISCCART	2835.00	0.00	86.16	86.16
DISCCART	2840.00	0.00	86.19	86.19
DISCCART	2845.00	0.00	86.21	86.21
DISCCART	2850.00	0.00	86.24	86.24
DISCCART	2855.00	0.00	86.30	86.30
DISCCART	2860.00	0.00	86.52	86.52
DISCCART	2865.00	0.00	86.72	86.72
DISCCART	2870.00	0.00	86.92	86.92
DISCCART	2875.00	0.00	87.12	87.12

DISCCART	2880.00	0.00	87.30	87.30
DISCCART	2885.00	0.00	87.48	87.48
DISCCART	2890.00	0.00	87.60	87.60
DISCCART	2895.00	0.00	87.65	87.65
DISCCART	2900.00	0.00	87.71	87.71
DISCCART	2905.00	0.00	87.78	87.78
DISCCART	2910.00	0.00	87.83	87.83
DISCCART	2915.00	0.00	87.85	87.85
DISCCART	2920.00	0.00	87.88	87.88
DISCCART	2925.00	0.00	87.86	87.86
DISCCART	2930.00	0.00	87.86	87.86
DISCCART	2935.00	0.00	87.87	87.87
DISCCART	2940.00	0.00	87.90	87.90
DISCCART	2945.00	0.00	87.95	87.95
DISCCART	2950.00	0.00	88.01	88.01
DISCCART	2955.00	0.00	88.07	88.07
DISCCART	2960.00	0.00	88.08	88.08

DISCCART	2965.00	0.00	88.08	88.08
DISCCART	2970.00	0.00	88.07	88.07
DISCCART	2975.00	0.00	88.11	88.11
DISCCART	2980.00	0.00	88.16	88.16
DISCCART	2985.00	0.00	88.23	88.23
DISCCART	2990.00	0.00	88.36	88.36
DISCCART	2995.00	0.00	88.51	88.51
DISCCART	3000.00	0.00	88.64	88.64
DISCCART	3005.00	0.00	88.75	88.75
DISCCART	3010.00	0.00	88.85	88.85
DISCCART	3015.00	0.00	88.93	88.93
DISCCART	3020.00	0.00	89.00	89.00
DISCCART	3025.00	0.00	89.00	89.00
DISCCART	3030.00	0.00	89.00	89.00
DISCCART	3035.00	0.00	89.02	89.02
DISCCART	3040.00	0.00	89.04	89.04
DISCCART	3045.00	0.00	89.06	89.06

DISCCART	3050.00	0.00	89.07	89.07
DISCCART	3055.00	0.00	89.08	89.08
DISCCART	3060.00	0.00	89.09	89.09
DISCCART	3065.00	0.00	89.10	89.10
DISCCART	3070.00	0.00	89.10	89.10
DISCCART	3075.00	0.00	89.09	89.09
DISCCART	3080.00	0.00	89.09	89.09
DISCCART	3085.00	0.00	89.08	89.08
DISCCART	3090.00	0.00	88.94	88.94
DISCCART	3095.00	0.00	88.76	88.76
DISCCART	3100.00	0.00	88.59	88.59
DISCCART	3105.00	0.00	88.41	88.41
DISCCART	3110.00	0.00	88.25	88.25
DISCCART	3115.00	0.00	88.08	88.08
DISCCART	3120.00	0.00	87.91	87.91
DISCCART	3125.00	0.00	87.72	87.72

DISCCART	3130.00	0.00	87.53	87.53
DISCCART	3135.00	0.00	87.34	87.34
DISCCART	3140.00	0.00	87.14	87.14
DISCCART	3145.00	0.00	86.94	86.94
DISCCART	3150.00	0.00	86.73	86.73
DISCCART	3155.00	0.00	86.52	86.52
DISCCART	3160.00	0.00	86.31	86.31
DISCCART	3165.00	0.00	86.10	86.10
DISCCART	3170.00	0.00	85.90	85.90
DISCCART	3175.00	0.00	85.71	85.71
DISCCART	3180.00	0.00	85.52	85.52
DISCCART	3185.00	0.00	85.34	85.34
DISCCART	3190.00	0.00	85.00	85.00
DISCCART	3195.00	0.00	84.66	84.66
DISCCART	3200.00	0.00	84.31	84.31
DISCCART	3205.00	0.00	83.96	83.96
DISCCART	3210.00	0.00	83.60	83.60

DISCCART	3215.00	0.00	83.21	83.21
DISCCART	3220.00	0.00	82.81	82.81
DISCCART	3225.00	0.00	82.37	82.37
DISCCART	3230.00	0.00	81.92	81.92
DISCCART	3235.00	0.00	81.47	81.47
DISCCART	3240.00	0.00	81.02	81.02
DISCCART	3245.00	0.00	80.55	80.55
DISCCART	3250.00	0.00	80.08	80.08
DISCCART	3255.00	0.00	79.55	79.55
DISCCART	3260.00	0.00	79.01	79.01
DISCCART	3265.00	0.00	78.46	78.46
DISCCART	3270.00	0.00	77.92	79.78
DISCCART	3275.00	0.00	77.36	82.73
DISCCART	3280.00	0.00	76.80	82.73
DISCCART	3285.00	0.00	76.27	82.73
DISCCART	3290.00	0.00	75.79	82.73
DISCCART	3295.00	0.00	75.31	82.73

DISCCART	3300.00	0.00	74.83	82.73
DISCCART	3305.00	0.00	74.35	82.73
DISCCART	3310.00	0.00	73.87	82.73
DISCCART	3315.00	0.00	73.39	82.73
DISCCART	3320.00	0.00	72.95	82.73
DISCCART	3325.00	0.00	72.56	82.73
DISCCART	3330.00	0.00	72.16	72.16
DISCCART	3335.00	0.00	71.78	71.78
DISCCART	3340.00	0.00	71.44	71.44
DISCCART	3345.00	0.00	71.08	71.08
DISCCART	3350.00	0.00	70.72	70.72
DISCCART	3355.00	0.00	70.58	70.58
DISCCART	3360.00	0.00	70.45	70.45
DISCCART	3365.00	0.00	70.33	70.33
DISCCART	3370.00	0.00	70.21	70.21
DISCCART	3375.00	0.00	70.09	70.09

DISCCART	3380.00	0.00	69.98	69.98
DISCCART	3385.00	0.00	69.95	69.95
DISCCART	3390.00	0.00	70.10	70.10
DISCCART	3395.00	0.00	70.28	70.28
DISCCART	3400.00	0.00	70.47	70.47
DISCCART	3405.00	0.00	70.64	70.64
DISCCART	3410.00	0.00	70.80	70.80
DISCCART	3415.00	0.00	70.95	70.95
DISCCART	3420.00	0.00	71.07	71.07
DISCCART	3425.00	0.00	71.21	71.21
DISCCART	3430.00	0.00	71.38	71.38
DISCCART	3435.00	0.00	71.58	71.58
DISCCART	3440.00	0.00	71.81	71.81
DISCCART	3445.00	0.00	72.07	72.07
DISCCART	3450.00	0.00	72.36	72.36
DISCCART	3455.00	0.00	72.66	72.66
DISCCART	3460.00	0.00	72.88	72.88

DISCCART	3465.00	0.00	73.05	73.05
DISCCART	3470.00	0.00	73.22	73.22
DISCCART	3475.00	0.00	73.37	73.37
DISCCART	3480.00	0.00	73.51	73.51
DISCCART	3485.00	0.00	73.57	73.57
DISCCART	3490.00	0.00	73.54	73.54
DISCCART	3495.00	0.00	73.52	73.52
DISCCART	3500.00	0.00	73.49	73.49
DISCCART	3505.00	0.00	73.46	73.46
DISCCART	3510.00	0.00	73.44	73.44
DISCCART	3515.00	0.00	73.41	73.41
DISCCART	3520.00	0.00	73.33	73.33
DISCCART	3525.00	0.00	73.21	73.21
DISCCART	3530.00	0.00	73.10	73.10
DISCCART	3535.00	0.00	72.99	72.99
DISCCART	3540.00	0.00	72.88	72.88
DISCCART	3545.00	0.00	72.77	72.77

DISCCART	3550.00	0.00	72.64	72.64
DISCCART	3555.00	0.00	72.43	72.43
DISCCART	3560.00	0.00	72.21	72.21
DISCCART	3565.00	0.00	71.99	71.99
DISCCART	3570.00	0.00	71.76	71.76
DISCCART	3575.00	0.00	71.53	71.53
DISCCART	3580.00	0.00	71.30	71.30
DISCCART	3585.00	0.00	71.14	71.14
DISCCART	3590.00	0.00	71.00	71.00
DISCCART	3595.00	0.00	70.86	70.86
DISCCART	3600.00	0.00	70.73	70.73
DISCCART	3605.00	0.00	70.60	70.60
DISCCART	3610.00	0.00	70.47	70.47
DISCCART	3615.00	0.00	70.34	70.34
DISCCART	3620.00	0.00	70.28	70.28
DISCCART	3625.00	0.00	70.22	70.22

DISCCART	3630.00	0.00	70.16	70.16
DISCCART	3635.00	0.00	70.12	70.12
DISCCART	3640.00	0.00	70.09	70.09
DISCCART	3645.00	0.00	70.10	70.10
DISCCART	3650.00	0.00	70.14	70.14
DISCCART	3655.00	0.00	70.23	70.23
DISCCART	3660.00	0.00	70.32	70.32
DISCCART	3665.00	0.00	70.40	70.40
DISCCART	3670.00	0.00	70.50	70.50
DISCCART	3675.00	0.00	70.59	70.59
DISCCART	3680.00	0.00	70.68	70.68
DISCCART	3685.00	0.00	70.78	70.78
DISCCART	3690.00	0.00	70.88	70.88
DISCCART	3695.00	0.00	70.95	70.95
DISCCART	3700.00	0.00	71.02	71.02
DISCCART	3705.00	0.00	71.11	71.11
DISCCART	3710.00	0.00	71.19	71.19

DISCCART	3715.00	0.00	71.27	71.27
DISCCART	3720.00	0.00	71.41	71.41
DISCCART	3725.00	0.00	71.57	71.57

RE FINISHED

ME STARTING

SURFFILE aerscreen_01_01.sfc FREE

PROFFILE aerscreen_01_01.pfl FREE

SURFDATA 11111 2010 SCREEN

UAIRDATA 22222 2010 SCREEN

PROFBASE 35.5 METERS

ME FINISHED

OU STARTING

RECTABLE 1 FIRST

MAXTABLE ALLAVE 50

FILEFORM EXP

RANKFILE 1 10 AERSCREEN.FIL

PLOTFILE 1 ALL FIRST AERSCREEN.PLT

OU FINISHED

10/21/25
15:35:05

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***** FLARE PARAMETERS *****
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[illegible]

***** BUILDING DOWNWASH PARAMETERS *****

***** FLOW SECTOR ANALYSIS *****

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25 meter receptor spacing: 300. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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FLOW SECTOR	MAXIMUM 1-HR CONC (ug/m3)	IMPACT DIST (m)	RECEPTOR HEIGHT (m)	TEMPORAL PERIOD
10	0.6263	3300.0	39.44	ANN
20*	0.6266	3225.0	46.88	ANN
30	0.6255	3250.0	31.43	ANN
40	0.6249	3325.0	9.02	ANN
50	0.6248	3325.0	4.22	ANN
60	0.6247	3275.0	0.36	ANN
70	0.6248	3325.0	1.51	ANN
80	0.6245	3250.0	2.02	ANN
90	0.6188	3125.0	-4.33	ANN
100	0.6041	3250.0	-20.02	ANN
110	0.6013	3000.0	-18.63	ANN
120	0.6027	3150.0	-20.41	ANN
130	0.6000	3125.0	-22.82	ANN
140	0.5953	3275.0	-29.66	ANN
150	0.5912	3500.0	-35.49	ANN
160	0.5931	3850.0	-28.25	ANN
170	0.5912	3500.0	-35.49	ANN
180	0.5912	3500.0	-35.49	ANN
190	0.5912	3500.0	-35.49	ANN
200	0.5912	3500.0	-35.49	ANN
210	0.5912	3500.0	-35.49	ANN
220	0.5912	3500.0	-35.49	ANN
230	0.5912	3500.0	-35.49	ANN
240	0.5912	3500.0	-35.49	ANN
250	0.6039	3250.0	-20.17	ANN
260	0.6249	3350.0	8.96	ANN
270	0.6254	3350.0	25.15	ANN
280	0.6251	3325.0	17.81	ANN
290	0.6243	3450.0	1.12	ANN
300	0.5912	3500.0	-35.49	ANN
310	0.6034	3125.0	-19.33	ANN
320	0.6255	3375.0	28.46	ANN
330	0.6254	3325.0	24.45	ANN
340	0.6249	3325.0	10.28	ANN
350	0.6255	3325.0	27.38	ANN
360	0.6260	3350.0	36.35	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.10

BOWEN RATIO: 0.10

ROUGHNESS LENGTH: 0.001 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

-- -- -- -- --

10 01 25 25 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
6.38	0.033	0.300	0.020	297.	14.	-1.0	0.001	0.10	0.10	0.50

HT	REF TA	HT
10.0	244.7	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 0.6 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 57.8 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 7520.5 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 7578.3 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

-- -- -- -- --

10 10 09 25 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
41.65	0.108	1.200	0.020	1586.	82.	-2.9	0.001	0.10	0.10	2.00

HT	REF TA	HT
10.0	311.2	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 2.1 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 57.8 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 1943.5 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 2001.3 meters

 ***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
300.00	0.1858E-01	8.27	3925.00	0.6153	48.66
325.00	0.1903E-01	8.83	3950.00	0.6144	48.68
350.00	0.1940E-01	9.37	3975.00	0.6136	48.46
375.00	0.2036E-01	9.42	4000.00	0.6127	48.48
400.00	0.2121E-01	9.53	4025.00	0.6118	48.51
425.00	0.2261E-01	9.47	4050.00	0.6108	48.54
450.00	0.2459E-01	10.34	4075.00	0.6099	48.31
475.00	0.2681E-01	11.63	4100.00	0.6089	47.51
500.00	0.2925E-01	12.82	4125.00	0.6079	47.40
525.00	0.3192E-01	13.83	4150.00	0.6069	46.61
550.00	0.3490E-01	15.39	4175.00	0.6059	46.13
575.00	0.3796E-01	15.27	4200.00	0.6048	45.46
600.00	0.4116E-01	14.25	4225.00	0.6037	44.47
625.00	0.4485E-01	15.11	4250.00	0.6027	43.50
650.00	0.5001E-01	15.39	4275.00	0.6016	43.55
675.00	0.5623E-01	13.90	4300.00	0.6005	44.06
700.00	0.6369E-01	14.75	4325.00	0.5995	45.48
725.00	0.7170E-01	15.93	4350.00	0.5985	47.24
750.00	0.8038E-01	18.14	4375.00	0.5974	49.06
775.00	0.8930E-01	19.19	4400.00	0.5963	50.53
800.00	0.9846E-01	19.50	4425.00	0.5952	51.75
825.00	0.1081	20.69	4450.00	0.5941	52.54
850.00	0.1186	23.63	4475.00	0.5929	53.07
875.00	0.1292	25.96	4500.00	0.5918	52.69
900.00	0.1398	27.75	4525.00	0.5905	51.66
925.00	0.1505	29.00	4550.00	0.5893	50.25
950.00	0.1610	29.67	4575.00	0.5881	49.23
975.00	0.1716	30.36	4600.00	0.5869	50.17
1000.00	0.1822	31.25	4625.00	0.5857	50.45
1025.00	0.1929	32.44	4650.00	0.5845	50.72
1050.00	0.2034	33.47	4675.00	0.5832	50.72
1075.00	0.2137	34.01	4700.00	0.5820	51.18
1100.00	0.2237	34.41	4725.00	0.5807	51.42
1125.00	0.2333	34.22	4750.00	0.5795	51.35

1150.00	0.2429	34.88	4775.00	0.5782	50.66
1175.00	0.2522	35.04	4800.00	0.5769	50.39
1200.00	0.2613	35.70	4825.00	0.5757	50.04
1225.00	0.2702	36.28	4850.00	0.5744	49.76
1250.00	0.2785	36.13	4875.00	0.5731	50.32
1275.00	0.2867	36.26	4900.00	0.5718	51.19
1300.00	0.2945	36.55	4925.00	0.5706	51.94
1325.00	0.3022	37.20	4950.00	0.5693	52.90
1350.00	0.3094	37.19	4975.00	0.5680	53.89
1375.00	0.3162	37.02	5000.00	0.5667	55.15
1400.00	0.3227	36.84	5100.00	0.5615	59.33
1425.00	0.3290	36.97	5200.00	0.5562	61.87
1450.00	0.3353	38.61	5300.00	0.5509	61.25
1475.00	0.3422	39.42	5400.00	0.5454	60.63
1500.00	0.3525	40.31	5500.00	0.5400	58.11
1525.00	0.3623	40.41	5600.00	0.5345	54.80
1550.00	0.3716	39.90	5700.00	0.5291	52.18
1575.00	0.3808	39.19	5800.00	0.5237	56.94
1600.00	0.3900	38.96	5900.00	0.5184	64.42
1625.00	0.3991	38.76	6000.00	0.5129	68.88
1650.00	0.4083	39.46	6100.00	0.5076	52.79
1675.00	0.4173	40.02	6200.00	0.5022	51.94
1700.00	0.4259	40.09	6300.00	0.4969	49.36
1725.00	0.4344	40.20	6400.00	0.4917	44.88
1750.00	0.4423	39.51	6500.00	0.4865	42.79
1775.00	0.4500	38.48	6600.00	0.4813	41.30
1800.00	0.4573	37.17	6700.00	0.4762	38.48
1825.00	0.4647	36.35	6800.00	0.4712	28.73
1850.00	0.4719	35.74	6900.00	0.4662	28.92
1875.00	0.4790	35.47	7000.00	0.4612	26.36
1900.00	0.4858	34.62	7100.00	0.4563	17.46
1925.00	0.4922	33.49	7200.00	0.4531	53.49
1950.00	0.4987	32.81	7300.00	0.4505	51.18
1975.00	0.5050	32.51	7400.00	0.4479	50.31
2000.00	0.5111	32.51	7500.00	0.4454	52.82
2025.00	0.5171	32.45	7600.00	0.4427	48.77
2050.00	0.5227	31.72	7700.00	0.4400	44.44
2075.00	0.5280	30.51	7800.00	0.4374	44.87
2100.00	0.5331	29.56	7900.00	0.4347	41.90
2125.00	0.5381	28.44	8000.00	0.4320	39.61
2150.00	0.5431	28.66	8100.00	0.4293	37.03
2175.00	0.5479	28.78	8200.00	0.4266	33.50
2200.00	0.5525	28.60	8300.00	0.4238	30.48
2225.00	0.5569	29.19	8400.00	0.4211	25.04
2250.00	0.5612	29.30	8500.00	0.4184	24.75
2275.00	0.5653	29.62	8600.00	0.4157	23.64
2300.00	0.5692	30.28	8700.00	0.4130	18.71
2325.00	0.5729	30.24	8800.00	0.4102	18.06
2350.00	0.5762	28.65	8900.00	0.4075	15.26
2375.00	0.5793	26.28	9000.00	0.4047	13.11

2400.00	0.5825	26.55	9100.00	0.4019	9.92
2425.00	0.5857	27.17	9200.00	0.3992	7.66
2450.00	0.5888	28.88	9300.00	0.3964	1.86
2475.00	0.5919	31.46	9400.00	0.3936	3.20
2500.00	0.5948	33.70	9500.00	0.3908	3.50
2525.00	0.5975	35.54	9600.00	0.3880	2.70
2550.00	0.6000	36.61	9700.00	0.3853	3.33
2575.00	0.6023	37.46	9800.00	0.3826	2.76
2600.00	0.6044	38.37	9900.00	0.3799	7.10
2625.00	0.6066	39.70	10000.00	0.3773	2.76
2650.00	0.6086	41.31	10100.00	0.3747	1.47
2675.00	0.6105	42.60	10200.00	0.3721	4.79
2700.00	0.6122	43.60	10300.00	0.3695	4.47
2725.00	0.6138	44.71	10400.00	0.3670	6.23
2750.00	0.6155	46.55	10500.00	0.3644	7.58
2775.00	0.6169	48.03	10600.00	0.3620	6.41
2800.00	0.6183	49.45	10700.00	0.3595	3.44
2825.00	0.6195	50.57	10800.00	0.3571	1.28
2850.00	0.6205	50.75	10900.00	0.3547	5.57
2875.00	0.6215	51.63	11000.00	0.3523	5.61
2900.00	0.6224	52.22	11100.00	0.3498	12.11
2925.00	0.6231	52.37	11200.00	0.3489	3.38
2950.00	0.6238	52.52	11300.00	0.3466	8.10
2975.00	0.6244	52.62	11400.00	0.3454	0.24
3000.00	0.6249	53.15	11500.00	0.3431	5.42
3025.00	0.6254	53.51	11600.00	0.3412	5.78
3050.00	0.6258	53.58	11700.00	0.3393	5.33
3075.00	0.6261	53.60	11800.00	0.3376	4.20
3100.00	0.6263	53.10	11900.00	0.3359	0.44
3125.00	0.6263	52.23	12000.00	0.3337	-1.02
3150.00	0.6264	51.24	12100.00	0.3318	6.85
3175.00	0.6265	50.22	12200.00	0.3296	9.58
3200.00	0.6266	48.82	12300.00	0.3256	23.23
3225.00	0.6266	46.88	12400.00	0.3253	14.49
3250.00	0.6265	44.59	12500.00	0.3236	14.46
3275.00	0.6264	41.87	12600.00	0.3218	14.51
3300.00	0.6263	39.44	12700.00	0.3201	14.51
3325.00	0.6263	39.30	12800.00	0.3196	2.35
3350.00	0.6262	39.51	12900.00	0.3173	9.10
3375.00	0.6262	39.51	13000.00	0.3156	8.92
3400.00	0.6260	39.51	13100.00	0.3143	3.84
3425.00	0.6258	39.51	13200.00	0.3124	-0.94
3450.00	0.6256	39.51	13300.00	0.3109	4.48
3475.00	0.6253	39.50	13400.00	0.3083	-3.63
3500.00	0.6250	39.43	13500.00	0.3075	4.25
3525.00	0.6247	40.26	13600.00	0.3058	4.95
3550.00	0.6244	40.68	13700.00	0.3044	1.29
3575.00	0.6240	41.04	13800.00	0.3027	2.93
3600.00	0.6236	41.61	13900.00	0.3009	5.03
3625.00	0.6231	42.46	14000.00	0.2995	2.67

3650.00	0.6226	42.51	14100.00	0.2978	4.53
3675.00	0.6221	42.51	14200.00	0.2960	7.68
3700.00	0.6214	42.14	14300.00	0.2947	3.33
3725.00	0.6208	42.00	14400.00	0.2930	5.69
3750.00	0.6203	44.07	14500.00	0.2916	2.22
3775.00	0.6198	46.59	14600.00	0.2901	1.97
3800.00	0.6192	48.52	14700.00	0.2886	1.84
3825.00	0.6185	49.44	14800.00	0.2869	5.65
3850.00	0.6178	50.36	14900.00	0.2855	4.35
3875.00	0.6170	50.04	15000.00	0.2841	0.51
3900.00	0.6161	49.28			

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	0.6266	0.6266	0.5640	0.3760	0.6266E-01

DISTANCE FROM SOURCE 3215.00 meters directed toward 20 degrees
 RECEPTOR HEIGHT 47.72 meters

IMPACT AT THE
 AMBIENT BOUNDARY 0.1858E-01 0.1858E-01 0.1673E-01 0.1115E-01 0.1858E-02

DISTANCE FROM SOURCE 300.00 meters directed toward 290 degrees
 RECEPTOR HEIGHT 8.27 meters

***** AERSCREEN FUMIGATION SUMMARY *****

FUMIGATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
SHORELINE	0.6608	0.6608	0.5947	0.3965	0.6608E-01

DISTANCE FROM SOURCE 6912.64 meters

** FLARE DATA Rate Height Heat HeatLoss

** 0.1000E+01 20.0000 0.8005E+09 0.550

** BUILDING DATA BPIP Height Max dim. Min dim. Orient. Direct. Offset

** N 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

** MAKEMET DATA MinT MaxT Speed AnemHt Surf Clim Albedo Bowen Length
SC FILE

** 244.70 311.20 0.5 10.000 0 0 0.1000 0.1000 0.0010
"NA"

** ADJUST U* Y

** TERRAIN DATA Terrain UTM East UTM North Zone Nada Probe
PROFBASE Use AERMAP elev

** Y 608112.7 5002668.0 20 4 15000.0
35.49 Y

** DISCRETE RECEPTORS Discflag Receptor file

** N "NA"

** UNITS/POPULATION	Units	R/U	Population	Amb. dist.	Flagpole	
Flagpole height						
**	M	R	0.	300.000	N	0.00

** FUMIGATION	Inversion	Break-up	Shoreline	Distance	Direct	Run
AERSCREEN						
**	N		Y	1310.00	-9.0	Y

** DEBUG OPTION	Debug
**	N

** OUTPUT FILE "AERSCREEN.OUT"

** Temporal sector: Annual, flow vector: 330 degrees, spatial sector: 1

CO STARTING

TITLEONE FLARE

** REFINE STAGE 3

MODELOPT CONC SCREEN

AVERTIME 1

POLLUTID OTHER

RUNORNOT RUN

CO FINISHED

SO STARTING

LOCATION SOURCE POINT	0.0	0.0	35.49
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SRCPARAM SOURCE	0.1000E+01	102.181	1273.000	20.000	18.752
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SRCGROUP ALL

SO FINISHED

RE STARTING

** Fence line receptor

DISCCART	300.00	0.00	42.00	42.00
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** Refined receptors

DISCCART	4500.00	0.00	83.06	83.06
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DISCCART	4505.00	0.00	83.11	83.11
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DISCCART	4510.00	0.00	83.13	83.13
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DISCCART	4515.00	0.00	83.28	83.28
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DISCCART	4520.00	0.00	83.44	83.44
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DISCCART	4525.00	0.00	83.60	83.60
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DISCCART	4530.00	0.00	83.77	83.77
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DISCCART	4535.00	0.00	83.92	83.92
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DISCCART	4540.00	0.00	84.05	84.05
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DISCCART	4545.00	0.00	84.16	84.16
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DISCCART	4550.00	0.00	84.23	84.23
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DISCCART	4555.00	0.00	84.29	84.29
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DISCCART	4560.00	0.00	84.34	84.34
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DISCCART	4565.00	0.00	84.39	84.39
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DISCCART	4570.00	0.00	84.54	84.54
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DISCCART	4575.00	0.00	84.72	84.72
DISCCART	4580.00	0.00	84.90	84.90
DISCCART	4585.00	0.00	85.08	85.08
DISCCART	4590.00	0.00	85.27	85.27
DISCCART	4595.00	0.00	85.46	85.46
DISCCART	4600.00	0.00	85.66	85.66
DISCCART	4605.00	0.00	85.75	85.75
DISCCART	4610.00	0.00	85.82	85.82
DISCCART	4615.00	0.00	85.87	85.87
DISCCART	4620.00	0.00	85.91	85.91
DISCCART	4625.00	0.00	85.94	85.94
DISCCART	4630.00	0.00	85.96	85.96
DISCCART	4635.00	0.00	85.97	85.97
DISCCART	4640.00	0.00	86.04	86.04
DISCCART	4645.00	0.00	86.14	86.14
DISCCART	4650.00	0.00	86.21	86.21

DISCCART	4655.00	0.00	86.25	86.25
DISCCART	4660.00	0.00	86.27	86.27
DISCCART	4665.00	0.00	86.26	86.26
DISCCART	4670.00	0.00	86.21	86.21
DISCCART	4675.00	0.00	86.21	86.21
DISCCART	4680.00	0.00	86.26	86.26
DISCCART	4685.00	0.00	86.34	86.34
DISCCART	4690.00	0.00	86.45	86.45
DISCCART	4695.00	0.00	86.57	86.57
DISCCART	4700.00	0.00	86.67	86.67
DISCCART	4705.00	0.00	86.73	86.73
DISCCART	4710.00	0.00	86.77	86.77
DISCCART	4715.00	0.00	86.82	86.82
DISCCART	4720.00	0.00	86.86	86.86
DISCCART	4725.00	0.00	86.91	86.91
DISCCART	4730.00	0.00	86.96	86.96
DISCCART	4735.00	0.00	87.02	87.02

DISCCART	4740.00	0.00	87.03	87.03
DISCCART	4745.00	0.00	86.96	86.96
DISCCART	4750.00	0.00	86.84	86.84
DISCCART	4755.00	0.00	86.71	86.71
DISCCART	4760.00	0.00	86.58	86.58
DISCCART	4765.00	0.00	86.44	86.44
DISCCART	4770.00	0.00	86.30	86.30
DISCCART	4775.00	0.00	86.15	86.15
DISCCART	4780.00	0.00	86.00	86.00
DISCCART	4785.00	0.00	85.97	85.97
DISCCART	4790.00	0.00	85.94	85.94
DISCCART	4795.00	0.00	85.91	85.91
DISCCART	4800.00	0.00	85.88	85.88
DISCCART	4805.00	0.00	85.84	85.84
DISCCART	4810.00	0.00	85.80	85.80
DISCCART	4815.00	0.00	85.74	85.74
DISCCART	4820.00	0.00	85.64	85.64

DISCCART	4825.00	0.00	85.53	85.53
DISCCART	4830.00	0.00	85.41	85.41
DISCCART	4835.00	0.00	85.32	85.32
DISCCART	4840.00	0.00	85.26	85.26
DISCCART	4845.00	0.00	85.23	85.23
DISCCART	4850.00	0.00	85.25	85.25
DISCCART	4855.00	0.00	85.35	85.35
DISCCART	4860.00	0.00	85.44	85.44
DISCCART	4865.00	0.00	85.54	85.54
DISCCART	4870.00	0.00	85.64	85.64
DISCCART	4875.00	0.00	85.81	85.81
DISCCART	4880.00	0.00	85.99	85.99
DISCCART	4885.00	0.00	86.18	86.18
DISCCART	4890.00	0.00	86.37	86.37
DISCCART	4895.00	0.00	86.54	86.54
DISCCART	4900.00	0.00	86.68	86.68

DISCCART	4905.00	0.00	86.80	86.80
DISCCART	4910.00	0.00	86.90	86.90
DISCCART	4915.00	0.00	86.97	86.97
DISCCART	4920.00	0.00	87.15	87.15
DISCCART	4925.00	0.00	87.43	87.43
DISCCART	4930.00	0.00	87.68	87.68
DISCCART	4935.00	0.00	87.90	87.90
DISCCART	4940.00	0.00	88.09	88.09
DISCCART	4945.00	0.00	88.25	88.25
DISCCART	4950.00	0.00	88.39	88.39
DISCCART	4955.00	0.00	88.50	88.50
DISCCART	4960.00	0.00	88.67	88.67
DISCCART	4965.00	0.00	88.91	88.91
DISCCART	4970.00	0.00	89.14	89.14
DISCCART	4975.00	0.00	89.38	89.38
DISCCART	4980.00	0.00	89.62	89.62
DISCCART	4985.00	0.00	89.86	89.86

DISCCART	4990.00	0.00	90.10	90.10
DISCCART	4995.00	0.00	90.37	90.37
DISCCART	5000.00	0.00	90.64	90.64
DISCCART	5005.00	0.00	90.92	90.92
DISCCART	5010.00	0.00	91.14	91.14
DISCCART	5015.00	0.00	91.37	91.37
DISCCART	5020.00	0.00	91.60	91.60
DISCCART	5025.00	0.00	91.83	91.83
DISCCART	5030.00	0.00	92.00	92.00
DISCCART	5035.00	0.00	92.20	92.20
DISCCART	5040.00	0.00	92.43	92.43
DISCCART	5045.00	0.00	92.68	92.68
DISCCART	5050.00	0.00	92.96	92.96
DISCCART	5055.00	0.00	93.15	93.15
DISCCART	5060.00	0.00	93.34	93.34
DISCCART	5065.00	0.00	93.53	93.53
DISCCART	5070.00	0.00	93.72	93.72

DISCCART	5075.00	0.00	93.90	93.90
DISCCART	5080.00	0.00	94.08	94.08
DISCCART	5085.00	0.00	94.26	94.26
DISCCART	5090.00	0.00	94.44	94.44
DISCCART	5095.00	0.00	94.61	94.61
DISCCART	5100.00	0.00	94.82	94.82
DISCCART	5105.00	0.00	95.03	95.03
DISCCART	5110.00	0.00	95.24	95.24
DISCCART	5115.00	0.00	95.45	95.45
DISCCART	5120.00	0.00	95.65	95.65
DISCCART	5125.00	0.00	95.85	95.85
DISCCART	5130.00	0.00	96.05	96.05
DISCCART	5135.00	0.00	96.20	96.20
DISCCART	5140.00	0.00	96.34	96.34
DISCCART	5145.00	0.00	96.38	96.38
DISCCART	5150.00	0.00	96.43	96.43

DISCCART	5155.00	0.00	96.49	96.49
DISCCART	5160.00	0.00	96.56	96.56
DISCCART	5165.00	0.00	96.64	96.64
DISCCART	5170.00	0.00	96.72	96.72
DISCCART	5175.00	0.00	96.81	96.81
DISCCART	5180.00	0.00	96.93	96.93
DISCCART	5185.00	0.00	97.08	97.08
DISCCART	5190.00	0.00	97.20	97.20
DISCCART	5195.00	0.00	97.29	97.29
DISCCART	5200.00	0.00	97.36	97.36
DISCCART	5205.00	0.00	97.36	97.36
DISCCART	5210.00	0.00	97.35	97.35
DISCCART	5215.00	0.00	97.36	97.36
DISCCART	5220.00	0.00	97.39	97.39
DISCCART	5225.00	0.00	97.44	97.44
DISCCART	5230.00	0.00	97.51	97.51
DISCCART	5235.00	0.00	97.57	97.57

DISCCART	5240.00	0.00	97.54	97.54
DISCCART	5245.00	0.00	97.47	97.47
DISCCART	5250.00	0.00	97.40	97.40
DISCCART	5255.00	0.00	97.33	97.33
DISCCART	5260.00	0.00	97.26	97.26
DISCCART	5265.00	0.00	97.19	97.19
DISCCART	5270.00	0.00	97.12	97.12
DISCCART	5275.00	0.00	97.04	97.04
DISCCART	5280.00	0.00	96.93	96.93
DISCCART	5285.00	0.00	96.84	96.84
DISCCART	5290.00	0.00	96.79	96.79
DISCCART	5295.00	0.00	96.75	96.75
DISCCART	5300.00	0.00	96.74	96.74
DISCCART	5305.00	0.00	96.76	96.76
DISCCART	5310.00	0.00	96.77	96.77
DISCCART	5315.00	0.00	96.78	96.78
DISCCART	5320.00	0.00	96.79	96.79

DISCCART	5325.00	0.00	96.73	96.73
DISCCART	5330.00	0.00	96.65	96.65
DISCCART	5335.00	0.00	96.57	96.57
DISCCART	5340.00	0.00	96.49	96.49
DISCCART	5345.00	0.00	96.41	96.41
DISCCART	5350.00	0.00	96.38	96.38
DISCCART	5355.00	0.00	96.37	96.37
DISCCART	5360.00	0.00	96.39	96.39
DISCCART	5365.00	0.00	96.44	96.44
DISCCART	5370.00	0.00	96.49	96.49
DISCCART	5375.00	0.00	96.51	96.51
DISCCART	5380.00	0.00	96.48	96.48
DISCCART	5385.00	0.00	96.39	96.39
DISCCART	5390.00	0.00	96.29	96.29
DISCCART	5395.00	0.00	96.21	96.21
DISCCART	5400.00	0.00	96.12	96.12

DISCCART	5405.00	0.00	96.03	96.03
DISCCART	5410.00	0.00	95.96	95.96
DISCCART	5415.00	0.00	95.97	95.97
DISCCART	5420.00	0.00	95.96	95.96
DISCCART	5425.00	0.00	95.90	95.90
DISCCART	5430.00	0.00	95.81	95.81
DISCCART	5435.00	0.00	95.68	95.68
DISCCART	5440.00	0.00	95.51	95.51
DISCCART	5445.00	0.00	95.30	95.30
DISCCART	5450.00	0.00	95.10	95.10
DISCCART	5455.00	0.00	94.99	94.99
DISCCART	5460.00	0.00	94.91	94.91
DISCCART	5465.00	0.00	94.80	94.80
DISCCART	5470.00	0.00	94.65	94.65
DISCCART	5475.00	0.00	94.46	94.46
DISCCART	5480.00	0.00	94.24	94.24
DISCCART	5485.00	0.00	94.01	94.01

DISCCART	5490.00	0.00	93.87	93.87
DISCCART	5495.00	0.00	93.73	93.73
DISCCART	5500.00	0.00	93.60	93.60

RE FINISHED

ME STARTING

SURFFILE aerscreen_01_01.sfc FREE

PROFFILE aerscreen_01_01.pfl FREE

SURFDATA 11111 2010 SCREEN

UAIRDATA 22222 2010 SCREEN

PROFBASE 35.5 METERS

ME FINISHED

OU STARTING

RECTABLE 1 FIRST

MAXTABLE ALLAVE 50

FILEFORM EXP

RANKFILE 1 10 AERSCREEN.FIL

PLOTFILE 1 ALL FIRST AERSCREEN.PLT

OU FINISHED

10/21/25
15:32:41

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***** FLARE PARAMETERS *****
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[illegible]

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INITIAL PROBE DISTANCE =      15000. meters      49213. feet
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***** BUILDING DOWNWASH PARAMETERS *****

NO BUILDING DOWNWASH HAS BEEN REQUESTED FOR THIS ANALYSIS

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***** FLOW SECTOR ANALYSIS *****
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25 meter receptor spacing: 300. meters - 5000. meters
100 meter receptor spacing: 5100. meters - 15000. meters
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FLOW SECTOR	MAXIMUM 1-HR CONC (ug/m3)	IMPACT DIST (m)	RECEPTOR HEIGHT (m)	TEMPORAL PERIOD
10	0.1600	5000.0	43.79	ANN
20	0.1599	5000.0	33.38	ANN
30	0.1598	4925.0	31.52	ANN
40	0.1598	5000.0	17.46	ANN
50	0.1598	4950.0	22.99	ANN
60	0.1598	4975.0	23.41	ANN
70	0.1597	5000.0	10.30	ANN
80	0.1597	5000.0	8.86	ANN
90	0.1574	4850.0	-15.21	ANN
100	0.1576	5200.0	-14.14	ANN
110	0.1559	5200.0	-28.29	ANN
120	0.1551	5100.0	-35.49	ANN
130	0.1551	5100.0	-35.49	ANN
140	0.1551	5100.0	-35.49	ANN
150	0.1551	5100.0	-35.49	ANN
160	0.1551	5100.0	-35.49	ANN
170	0.1551	5100.0	-35.49	ANN
180	0.1551	5100.0	-35.49	ANN
190	0.1551	5100.0	-35.49	ANN
200	0.1587	5400.0	-1.56	ANN
210	0.1594	5200.0	2.24	ANN
220	0.1592	5200.0	-1.29	ANN
230	0.1589	4800.0	-3.79	ANN
240	0.1587	5300.0	-3.52	ANN
250	0.1575	5500.0	-8.38	ANN
260	0.1552	4600.0	-24.78	ANN
270	0.1597	5000.0	11.22	ANN
280	0.1599	5000.0	30.29	ANN
290	0.1599	5000.0	34.58	ANN
300	0.1597	5000.0	12.38	ANN
310	0.1579	5400.0	-7.72	ANN
320	0.1598	4975.0	17.86	ANN
330*	0.1601	5000.0	55.15	ANN
340	0.1599	5000.0	37.81	ANN
350	0.1598	5000.0	16.51	ANN
360	0.1599	5000.0	40.48	ANN

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 244.7 / 311.2 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.10

BOWEN RATIO: 0.10

ROUGHNESS LENGTH: 0.001 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

-- -- -- -- --
10 02 06 6 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
1.03	0.028	0.300	0.020	792.	11.	-1.7	0.001	0.10	0.10	0.50

HT	REF TA	HT
10.0	244.7	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 0.5 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 102.2 meters

ESTIMATED FINAL PLUME RISE (non-downwash): 22194.6 meters

ESTIMATED FINAL PLUME HEIGHT (non-downwash): 22296.8 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 01 16 6 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
57.01	0.041	0.300	0.020	153.	19.	-1.0	0.001	0.10	0.10	0.50

HT	REF TA	HT
10.0	244.7	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 0.7 m/s

STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 102.2 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 15060.1 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 15162.2 meters

 ***** AERSCREEN AUTOMATED DISTANCES *****
 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
300.00	0.3065E-02	8.27	3925.00	0.1521	48.66
325.00	0.3011E-02	8.83	3950.00	0.1525	48.68
350.00	0.2964E-02	9.37	3975.00	0.1529	48.46
375.00	0.2923E-02	9.42	4000.00	0.1533	48.48
400.00	0.2885E-02	9.53	4025.00	0.1537	48.51
425.00	0.2849E-02	9.47	4050.00	0.1541	48.54
450.00	0.2818E-02	10.34	4075.00	0.1544	48.31
475.00	0.2790E-02	11.63	4100.00	0.1548	47.51
500.00	0.2764E-02	12.82	4125.00	0.1551	47.40
525.00	0.2739E-02	13.83	4150.00	0.1554	46.61
550.00	0.2718E-02	15.39	4175.00	0.1557	46.13
575.00	0.2774E-02	15.27	4200.00	0.1560	45.46
600.00	0.3037E-02	14.25	4225.00	0.1562	44.47
625.00	0.3341E-02	15.11	4250.00	0.1565	43.50
650.00	0.3670E-02	15.39	4275.00	0.1567	43.55
675.00	0.4017E-02	13.90	4300.00	0.1570	44.06
700.00	0.4416E-02	14.75	4325.00	0.1572	45.48
725.00	0.4854E-02	15.93	4350.00	0.1575	47.24
750.00	0.5343E-02	18.14	4375.00	0.1577	49.06
775.00	0.5862E-02	19.19	4400.00	0.1579	50.53
800.00	0.6413E-02	19.50	4425.00	0.1581	51.75
825.00	0.7022E-02	20.69	4450.00	0.1583	52.54
850.00	0.7709E-02	23.63	4475.00	0.1585	53.07
875.00	0.8441E-02	25.96	4500.00	0.1587	52.69
900.00	0.9216E-02	27.75	4525.00	0.1588	51.66
925.00	0.1003E-01	29.00	4550.00	0.1589	50.25
950.00	0.1089E-01	29.67	4575.00	0.1590	49.23
975.00	0.1179E-01	30.36	4600.00	0.1592	50.17
1000.00	0.1276E-01	31.25	4625.00	0.1593	50.45
1025.00	0.1379E-01	32.44	4650.00	0.1594	50.72
1050.00	0.1488E-01	33.47	4675.00	0.1595	50.72
1075.00	0.1600E-01	34.01	4700.00	0.1596	51.18
1100.00	0.1716E-01	34.41	4725.00	0.1597	51.42
1125.00	0.1836E-01	34.22	4750.00	0.1597	51.35

1150.00	0.1965E-01	34.88	4775.00	0.1598	50.66
1175.00	0.2096E-01	35.04	4800.00	0.1598	50.39
1200.00	0.2235E-01	35.70	4825.00	0.1599	50.04
1225.00	0.2379E-01	36.28	4850.00	0.1599	49.76
1250.00	0.2524E-01	36.13	4875.00	0.1600	50.32
1275.00	0.2675E-01	36.26	4900.00	0.1600	51.19
1300.00	0.2831E-01	36.55	4925.00	0.1600	51.94
1325.00	0.2994E-01	37.20	4950.00	0.1601	52.90
1350.00	0.3157E-01	37.19	4975.00	0.1601	53.89
1375.00	0.3323E-01	37.02	5000.00	0.1601	55.15
1400.00	0.3493E-01	36.84	5100.00	0.1601	59.33
1425.00	0.3668E-01	36.97	5200.00	0.1599	61.87
1450.00	0.3855E-01	38.61	5300.00	0.1597	61.25
1475.00	0.4041E-01	39.42	5400.00	0.1593	60.63
1500.00	0.4230E-01	40.31	5500.00	0.1589	58.11
1525.00	0.4417E-01	40.41	5600.00	0.1584	54.80
1550.00	0.4602E-01	39.90	5700.00	0.1579	52.18
1575.00	0.4789E-01	39.19	5800.00	0.1572	56.94
1600.00	0.4980E-01	38.96	5900.00	0.1565	64.42
1625.00	0.5173E-01	38.76	6000.00	0.1556	68.88
1650.00	0.5372E-01	39.46	6100.00	0.1548	73.28
1675.00	0.5572E-01	40.02	6200.00	0.1539	51.94
1700.00	0.5769E-01	40.09	6300.00	0.1529	75.82
1725.00	0.5967E-01	40.20	6400.00	0.1520	71.89
1750.00	0.6161E-01	39.51	6500.00	0.1511	68.76
1775.00	0.6353E-01	38.48	6600.00	0.1501	68.64
1800.00	0.6543E-01	37.17	6700.00	0.1491	66.69
1825.00	0.6736E-01	36.35	6800.00	0.1481	63.42
1850.00	0.6930E-01	35.74	6900.00	0.1471	58.63
1875.00	0.7125E-01	35.47	7000.00	0.1461	56.51
1900.00	0.7316E-01	34.62	7100.00	0.1451	56.31
1925.00	0.7504E-01	33.49	7200.00	0.1441	53.49
1950.00	0.7694E-01	32.81	7300.00	0.1430	51.18
1975.00	0.7884E-01	32.51	7400.00	0.1420	50.31
2000.00	0.8073E-01	32.51	7500.00	0.1410	52.82
2025.00	0.8261E-01	32.45	7600.00	0.1399	54.34
2050.00	0.8443E-01	31.72	7700.00	0.1389	58.18
2075.00	0.8622E-01	30.51	7800.00	0.1379	61.07
2100.00	0.8799E-01	29.56	7900.00	0.1368	62.74
2125.00	0.8974E-01	28.44	8000.00	0.1358	65.10
2150.00	0.9152E-01	28.66	8100.00	0.1347	67.15
2175.00	0.9326E-01	28.78	8200.00	0.1337	67.90
2200.00	0.9497E-01	28.60	8300.00	0.1327	67.53
2225.00	0.9668E-01	29.19	8400.00	0.1317	68.70
2250.00	0.9834E-01	29.30	8500.00	0.1314	70.63
2275.00	0.1000	29.62	8600.00	0.1324	69.99
2300.00	0.1016	30.28	8700.00	0.1332	69.13
2325.00	0.1032	30.24	8800.00	0.1340	69.74
2350.00	0.1047	28.65	8900.00	0.1347	70.74
2375.00	0.1061	26.28	9000.00	0.1352	68.58

2400.00	0.1076	26.55	9100.00	0.1357	67.51
2425.00	0.1090	27.17	9200.00	0.1362	65.65
2450.00	0.1105	28.88	9300.00	0.1366	63.51
2475.00	0.1120	31.46	9400.00	0.1369	64.16
2500.00	0.1134	33.70	9500.00	0.1372	63.84
2525.00	0.1148	35.54	9600.00	0.1374	62.10
2550.00	0.1161	36.61	9700.00	0.1376	61.61
2575.00	0.1174	37.46	9800.00	0.1378	73.70
2600.00	0.1186	38.37	9900.00	0.1379	82.42
2625.00	0.1199	39.70	10000.00	0.1379	74.85
2650.00	0.1211	41.31	10100.00	0.1379	72.83
2675.00	0.1222	42.60	10200.00	0.1379	84.00
2700.00	0.1234	43.60	10300.00	0.1379	84.70
2725.00	0.1245	44.71	10400.00	0.1377	74.23
2750.00	0.1255	46.55	10500.00	0.1376	85.71
2775.00	0.1266	48.03	10600.00	0.1375	94.39
2800.00	0.1276	49.45	10700.00	0.1372	83.58
2825.00	0.1286	50.57	10800.00	0.1370	91.94
2850.00	0.1295	50.75	10900.00	0.1367	82.98
2875.00	0.1304	51.63	11000.00	0.1363	58.96
2900.00	0.1313	52.22	11100.00	0.1360	52.42
2925.00	0.1321	52.37	11200.00	0.1357	61.10
2950.00	0.1329	52.52	11300.00	0.1353	69.40
2975.00	0.1337	52.62	11400.00	0.1349	62.34
3000.00	0.1345	53.15	11500.00	0.1345	53.88
3025.00	0.1352	53.51	11600.00	0.1341	55.70
3050.00	0.1359	53.58	11700.00	0.1337	41.81
3075.00	0.1366	53.60	11800.00	0.1332	41.48
3100.00	0.1372	53.10	11900.00	0.1328	44.94
3125.00	0.1378	52.23	12000.00	0.1323	43.42
3150.00	0.1384	51.24	12100.00	0.1318	36.50
3175.00	0.1389	50.22	12200.00	0.1313	33.42
3200.00	0.1394	48.82	12300.00	0.1308	26.83
3225.00	0.1399	46.88	12400.00	0.1303	27.06
3250.00	0.1404	44.59	12500.00	0.1297	14.46
3275.00	0.1408	41.87	12600.00	0.1291	14.51
3300.00	0.1413	39.44	12700.00	0.1285	14.51
3325.00	0.1417	39.30	12800.00	0.1279	2.35
3350.00	0.1422	39.51	12900.00	0.1272	9.10
3375.00	0.1426	39.51	13000.00	0.1265	8.92
3400.00	0.1430	39.51	13100.00	0.1258	3.84
3425.00	0.1434	39.51	13200.00	0.1250	-0.94
3450.00	0.1438	39.51	13300.00	0.1244	4.48
3475.00	0.1441	39.50	13400.00	0.1234	-3.63
3500.00	0.1445	39.43	13500.00	0.1230	4.25
3525.00	0.1448	40.26	13600.00	0.1223	5.04
3550.00	0.1451	40.68	13700.00	0.1216	5.03
3575.00	0.1454	41.04	13800.00	0.1209	4.27
3600.00	0.1457	41.61	13900.00	0.1203	5.03
3625.00	0.1460	42.46	14000.00	0.1196	2.67

3650.00	0.1463	42.51	14100.00	0.1189	4.53
3675.00	0.1469	42.51	14200.00	0.1182	7.68
3700.00	0.1475	42.14	14300.00	0.1176	3.33
3725.00	0.1480	42.00	14400.00	0.1169	5.69
3750.00	0.1486	44.07	14500.00	0.1163	2.73
3775.00	0.1492	46.59	14600.00	0.1156	1.97
3800.00	0.1497	48.52	14700.00	0.1150	8.54
3825.00	0.1503	49.44	14800.00	0.1143	5.65
3850.00	0.1508	50.36	14900.00	0.1137	4.35
3875.00	0.1512	50.04	15000.00	0.1131	2.23
3900.00	0.1517	49.28			

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	0.1601	0.1601	0.1441	0.9605E-01	0.1601E-01

DISTANCE FROM SOURCE 5025.00 meters directed toward 330 degrees
 RECEPTOR HEIGHT 56.34 meters

IMPACT AT THE
 AMBIENT BOUNDARY 0.3065E-02 0.3065E-02 0.2759E-02 0.1839E-02 0.3065E-03

DISTANCE FROM SOURCE 300.00 meters directed toward 290 degrees
 RECEPTOR HEIGHT 8.27 meters

***** AERSCREEN FUMIGATION SUMMARY *****

FUMIGATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
SHORELINE	0.1309	0.1309	0.1178	0.7853E-01	0.1309E-01

DISTANCE FROM SOURCE 24446.71 meters

APPENDIX C

GREENHOUSE GAS ASSESSMENT



NSF NOVA SCOTIA SAF

GHG Savings estimation based on the
EU RED III methodology

Project number: A271842
Date: 2025-10-08
Created by: EWHA
Checked by: AFJA
Approved by: MHO
Version: 4.0

GHG Savings Estimation Based on EU RED III Methodology

Performed by COWI (October 2025)

ABF Fuel			Base Case 2030
e _p	Electricity	g CO2e/MJ	6.0
	Collection of forestry residues	g CO2e/MJ	2.7
	Seasoning of forestry residue	g CO2e/MJ	-
	Chipping of forestry residue	g CO2e/MJ	0.7
	Natural gas	g CO2e/MJ	3.2
e _{td}	Transport of forestry residue	g CO2e/MJ	7.6
	Final fuel distribution	g CO2e/MJ	1.2
e _u	Use	g CO2e/MJ	-
	<i>Total</i>	<i>g CO2e/MJ</i>	21.5
	ABF - energy content	TJ	2,744
	Final GHGi	g CO2e/MJ	21.5
	GHG Savings (min. 65%)	%	77%

RFNBO Fuel			
e _p	Electricity	g CO2e/MJ	2.2
	Natural gas	g CO2e/MJ	3.2
e _{td}	Final fuel distribution	g CO2e/MJ	1.2
e _u	Use	g CO2e/MJ	-
	<i>Total</i>	<i>g CO2e/MJ</i>	6.6
	RFNBO - energy content	TJ	4,351
	Final GHGi	g CO2e/MJ	6.6
	GHG Savings (min. 70%)	%	93%

Table 1: Mobile Construction Equipment GHG Quantification - Nova Sustainable Fuels Renewable Energy Park

Project # 24-10412

Major Equipment Type/ Model	Estimated Number of Operating Equipment Required	Number of Years	Operating Days Per Year	Operating Days	Runtime/ Day (hrs)	Average Fuel Consumption (L/hr)	Total Fuel consumption (L)	Fuel Type	Emission coefficient (kgCO ₂ e/L)	Total CO ₂ e Emissions (kg)	Total CO ₂ e (tonnes)
Dozers	5	3.5	256	896	12	33	1,795,584	Diesel	2.68	4,812,165	4,812
Excavators	5	3.5	256	896	12	31	1,680,000	Diesel	2.68	4,502,400	4,502
Mechanical Shovels and Loaders	5	3.5	256	896	12	20	1,075,200	Diesel	2.68	2,881,536	2,882
Trucks (Heavy Diesel)	5	3.5	256	896	12	30	1,630,720	Diesel	2.68	4,370,330	4,370
Trucks (Light Gasoline)	10	3.5	256	896	12	15	1,612,800	Gasoline	2.31	3,725,568	3,726
Cranes and Manlifts	5	3.5	256	896	12	49	2,620,800	Diesel	2.68	7,023,744	7,024
Loaders	5	3.5	256	896	12	31	1,666,560	Diesel	2.68	4,466,381	4,466
Tree Clearing and Harvesting Equipment	5	3.5	256	896	12	30	1,612,800	Diesel	2.68	4,322,304	4,322
Pile Boring/Driving Machines	5	3.5	256	896	12	18	967,680	Diesel	2.68	2,593,382	2,593
Vacuum Trucks	5	3.5	256	896	12	30	1,612,800	Diesel	2.68	4,322,304	4,322
Welding Machines	5	3.5	256	896	12	10	537,600	Diesel	2.68	1,440,768	1,441
Generators	5	3.5	256	896	12	18	967,680	Diesel	2.68	2,593,382	2,593
Rollers	5	3.5	256	896	12	10	537,600	Diesel	2.68	1,440,768	1,441
Graders	5	3.5	256	896	12	25	1,344,000	Diesel	2.68	3,601,920	3,602
Total Emissions											52,096.95

Source: Canada's Greenhouse Gas Quantification Requirements Version 7.0

Table 2: Construction Phase GHG Quantification - NSF

Project # 24-10412

Steel Fabrication			
Parameter/Variable	Value	Unit	Comments
Steel Fabrications	2,350	m ³	Assumed based upon Proponent provided Site Plan
Steel Density	8,000	kg/m ³	The Engineering Toolbox, n.d.
Steel Mass in kg	18,801,600	kg	
Steel Mass in tonne	18,801.60	tonne	1 kg = 0.001 Tonnes
Emission Factors			
Parameter/Variable	Value	Unit	Comments
General Steel	1.5	kg CO ₂ e/kg	Estimated from the UK's mixture of steel types, excluding stainless steel (Inventory of Carbon & Energy (ICE), Version 2.0).
Conversion Factor	0.001	t CO ₂ e/kg	1 kg = 0.001 Tonnes
Emissions	28,202.40	t CO ₂ e	B7*B11*B12
Material Transportation			
Parameter/Variable	Value	Unit	Comments
Transportation Vehicle			
Distance Travelled	117.00	km	From supplier to Project site (1-way trip).
Heavy Duty Truck (Diesel)	38	tonne/truck	No more than 49,500 Gross Vehicle Weight (Assumed unladen weight of 11.5 tonnes)
	495	ea	(B8/B19) Required number of trucks
Steel Transportation Distances			
Distance Travelled (freight)	57,915.00	km	Based on one-way trip from Steel Supplier to Project Site for all trucks
Distance Travelled (no freight)	57,915.00	km	Based on one-way trip from Steel Supplier to Project Site for all trucks
Emission Factors			
Parameter/Variable	Value	Unit	Comments
Heavy Duty Truck (freight)	132	g CO ₂ e/tonne-km	Converted from imperial to metric units. Source (US EPA, 2025).
Heavy Duty Truck (no freight)	837	g CO ₂ e/km	Converted from imperial to metric units. Source (US EPA, 2025).
Conversion Factor	0.000001	t CO ₂ e/tonne-km	1 g = 0.000001 Tonnes
Emissions (freight)	290.93	t CO ₂ e/year	B17*B20*B24*B26
Emissions (no freight)	48.48	t CO ₂ e/year	B23*B27*B28
Steel Transportation Emissions	339.41	t CO ₂ e/year	B29+B30
Concrete Foundation			
Parameter/Variable	Value	Unit	Comments
Concrete Production Quantity	130,318	m ³	Assumed based upon Proponent provided Site Plan
Concrete Density	2,400	kg/m ³	The Engineering Toolbox, n.d.
Concrete Mass in kg	312,762,408	kg	
Concrete Mass in tonne	312,762	tonne	1 kg = 0.001 Tonnes
Emission Factors			
Parameter/Variable	Value	Unit	Comments
Concrete Production	300	g CO ₂ e/kg	0.3 kg CO ₂ e/kg [Source: GHGenius v5.0d].
Conversion Factor	0.000001	t CO ₂ e/g	1 g = 0.000001 Tonnes
Concrete Production Emissions	93,828.72	t CO ₂ e/year	B37*B41*B42
Total Emissions (Construction Phase)	122,370.53	t CO ₂ e	B13+B31+B44

User input data

Compiled data

APPENDIX D

SOUND MONITORING

Start Time	End Time	Duration	Leq (LAeq)(dBA)	Leq (LAeq) (SPL)	Precipitation (mm)	Wind Speed (km/h)	Wind Direction (10s deg)
2025-05-12 13:45	2025-05-12 14:00	0:14:54	43.6	22908.67653	0	12	30
2025-05-12 14:00	2025-05-12 15:00	1:00:00	41.2	13182.56739	0	12	32
2025-05-12 15:00	2025-05-12 16:00	1:00:00	41.4	13803.84265	0	16	31
2025-05-12 16:00	2025-05-12 17:00	1:00:00	46.6	45708.81896	0	13	32
2025-05-12 17:00	2025-05-12 18:00	1:00:00	39.2	8317.637711	0	15	32
2025-05-12 18:00	2025-05-12 19:00	1:00:00	38.2	6606.93448	0	5	31
2025-05-12 19:00	2025-05-12 20:00	1:00:00	42	15848.93192	0	10	22
2025-05-12 20:00	2025-05-12 21:00	1:00:00	31.8	1513.561248	0	0	
2025-05-12 21:00	2025-05-12 22:00	1:00:00	37.9	6165.950019	0	0	
2025-05-12 22:00	2025-05-12 23:00	1:00:00	36.2	4168.693835	0	0	
2025-05-12 23:00	2025-05-13 0:00	1:00:00	36.8	4786.300923	0	4	21
2025-05-13 0:00	2025-05-13 1:00	1:00:00	33.4	2187.761624	0	9	25
2025-05-13 1:00	2025-05-13 2:00	1:00:00	32.3	1698.243652	0	7	13
2025-05-13 2:00	2025-05-13 3:00	1:00:00	26.7	467.7351413	0	3	18
2025-05-13 3:00	2025-05-13 4:00	1:00:00	29.8	954.992586	0	5	28
2025-05-13 4:00	2025-05-13 5:00	1:00:00	33.9	2454.708916	0	12	31
2025-05-13 5:00	2025-05-13 6:00	1:00:00	31.5	1412.537545	0	14	30
2025-05-13 6:00	2025-05-13 7:00	1:00:00	38.2	6606.93448	0	13	32
2025-05-13 7:00	2025-05-13 8:00	1:00:00	41.3	13489.62883	0	16	34
2025-05-13 8:00	2025-05-13 9:00	1:00:00	45.3	33884.41561	0	13	33
2025-05-13 9:00	2025-05-13 10:00	1:00:00	49.6	91201.08394	0	22	35
2025-05-13 10:00	2025-05-13 11:00	1:00:00	51.9	154881.6619	0	22	34
2025-05-13 11:00	2025-05-13 12:00	1:00:00	52.2	165958.6907	0	25	35
2025-05-13 12:00	2025-05-13 13:00	1:00:00	51.5	141253.7545	0	21	34
2025-05-13 13:00	2025-05-13 14:00	1:00:00	50.5	112201.8454	0	27	34
2025-05-13 14:00	2025-05-13 15:00	1:00:00	50.3	107151.9305	0	21	35
2025-05-13 15:00	2025-05-13 16:00	1:00:00	51.4	138038.4265	0	22	36
2025-05-13 16:00	2025-05-13 17:00	1:00:00	49.8	95499.2586	0	17	35
2025-05-13 17:00	2025-05-13 18:00	1:00:00	47.6	57543.99373	0	8	35
2025-05-13 18:00	2025-05-13 19:00	1:00:00	44	25118.86432	0	10	2
2025-05-13 19:00	2025-05-13 20:00	1:00:00	38.8	7585.77575	0	0	
2025-05-13 20:00	2025-05-13 21:00	1:00:00	39.5	8912.509381	0	0	
2025-05-13 21:00	2025-05-13 22:00	1:00:00	34.9	3090.295433	0	0	
2025-05-13 22:00	2025-05-13 23:00	1:00:00	33.2	2089.296131	0	0	
2025-05-13 23:00	2025-05-14 0:00	1:00:00	28	630.9573445	0	0	
2025-05-14 0:00	2025-05-14 1:00	1:00:00	24.4	275.4228703	0	0	
2025-05-14 1:00	2025-05-14 2:00	1:00:00	22.8	190.5460718	0	0	
2025-05-14 2:00	2025-05-14 3:00	1:00:00	20.8	120.2264435	0	0	
2025-05-14 3:00	2025-05-14 4:00	1:00:00	22.3	169.8243652	0	0	
2025-05-14 4:00	2025-05-14 5:00	1:00:00	26.5	446.6835922	0	0	
2025-05-14 5:00	2025-05-14 6:00	1:00:00	27.7	588.8436554	0	0	
2025-05-14 6:00	2025-05-14 7:00	1:00:00	28.3	676.0829754	0	7	19
2025-05-14 7:00	2025-05-14 8:00	1:00:00	33.2	2089.296131	0	6	19
2025-05-14 8:00	2025-05-14 9:00	1:00:00	29.6	912.0108394	0	11	20
2025-05-14 9:00	2025-05-14 10:00	1:00:00	31.9	1548.816619	0	17	20
2025-05-14 10:00	2025-05-14 11:00	1:00:00	36.8	4786.300923	0	3	19
2025-05-14 11:00	2025-05-14 12:00	1:00:00	34.6	2884.031503	0	3	20
2025-05-14 12:00	2025-05-14 13:00	1:00:00	33.5	2238.721139	0	6	20
2025-05-14 13:00	2025-05-14 14:00	1:00:00	36.6	4570.881896	0	6	23
2025-05-14 14:00	2025-05-14 15:00	1:00:00	35.5	3548.133892	0	6	24
2025-05-14 15:00	2025-05-14 16:00	1:00:00	39.9	9772.37221	0	7	24
2025-05-14 16:00	2025-05-14 17:00	1:00:00	43.6	22908.67653	0	15	19
2025-05-14 17:00	2025-05-14 18:00	1:00:00	40.1	10232.92992	0	17	21
2025-05-14 18:00	2025-05-14 19:00	1:00:00	37.2	5248.074602	0	6	24
2025-05-14 19:00	2025-05-14 20:00	1:00:00	29.7	933.2543008	0	3	25
2025-05-14 20:00	2025-05-14 21:00	1:00:00	30.6	1148.153621	0	3	22
2025-05-14 21:00	2025-05-14 22:00	1:00:00	33.9	2454.708916	0	0	
2025-05-14 22:00	2025-05-14 23:00	1:00:00	33.8	2398.832919	0	8	26
2025-05-14 23:00	2025-05-15 0:00	1:00:00	34	2511.886432	0	5	26
2025-05-15 0:00	2025-05-15 1:00	1:00:00	33	1995.262315	0	0	
2025-05-15 1:00	2025-05-15 2:00	1:00:00	28.8	758.577575	0	0	
2025-05-15 2:00	2025-05-15 3:00	1:00:00	32.7	1862.087137	0	0	
2025-05-15 3:00	2025-05-15 4:00	1:00:00	33.5	2238.721139	0	0	
2025-05-15 4:00	2025-05-15 5:00	1:00:00	34.7	2951.209227	0	0	
2025-05-15 5:00	2025-05-15 6:00	1:00:00	34.6	2884.031503	0	0	
2025-05-15 6:00	2025-05-15 7:00	1:00:00	32.8	1905.460718	0	5	20
2025-05-15 7:00	2025-05-15 8:00	1:00:00	40	10000	0	10	19
2025-05-15 8:00	2025-05-15 9:00	1:00:00	38.2	6606.93448	0	0	
2025-05-15 9:00	2025-05-15 10:00	1:00:00	39.6	9120.108394	0	19	22
2025-05-15 10:00	2025-05-15 11:00	1:00:00	39.8	9549.92586	0	29	24
2025-05-15 11:00	2025-05-15 11:53	0:53:38	42.4	17378.00829	0	29	27

- Excluded data during deployment/retrieval
- Daytime (7:00-19:00)
- Evening (19:00-23:00)
- Nighttime (23:00-7:00)

Start Time	End Time	Duration	Leq (LAeq)(dBA)	Leq (LAeq) (SPL)	Precipitation (mm)	Wind Speed (km/h)	Wind Direction (10s deg)
2025-05-15 12:48	2025-05-15 13:00	0:11:52	40.5	11220.18454	0	32	25
2025-05-15 13:00	2025-05-15 14:00	1:00:00	40	10000	0	15	27
2025-05-15 14:00	2025-05-15 15:00	1:00:00	34.3	2691.534804	0	13	27
2025-05-15 15:00	2025-05-15 16:00	1:00:00	38.4	6918.309709	0	34	24
2025-05-15 16:00	2025-05-15 17:00	1:00:00	36.7	4677.351413	0	36	26
2025-05-15 17:00	2025-05-15 18:00	1:00:00	37.8	6025.595861	0	34	26
2025-05-15 18:00	2025-05-15 19:00	1:00:00	34.6	2884.031503	0	33	25
2025-05-15 19:00	2025-05-15 20:00	1:00:00	29.5	891.2509381	0	33	26
2025-05-15 20:00	2025-05-15 21:00	1:00:00	41.9	15488.16619	0	38	22
2025-05-15 21:00	2025-05-15 22:00	1:00:00	48	63095.73445	0	37	21
2025-05-15 22:00	2025-05-15 23:00	1:00:00	36.9	4897.788194	0	33	15
2025-05-15 23:00	2025-05-16 0:00	1:00:00	37.2	5248.074602	0	26	21
2025-05-16 0:00	2025-05-16 1:00	1:00:00	39.5	8912.509381	0	26	20
2025-05-16 1:00	2025-05-16 2:00	1:00:00	36.9	4897.788194	0	24	21
2025-05-16 2:00	2025-05-16 3:00	1:00:00	38.7	7413.102413	0	27	19
2025-05-16 3:00	2025-05-16 4:00	1:00:00	38.1	6456.54229	0	27	19
2025-05-16 4:00	2025-05-16 5:00	1:00:00	41.2	13182.56739	0	25	14
2025-05-16 5:00	2025-05-16 6:00	1:00:00	35.6	3630.780548	0	28	19
2025-05-16 6:00	2025-05-16 7:00	1:00:00	37.7	5888.436554	0	37	19
2025-05-16 7:00	2025-05-16 8:00	1:00:00	33.4	2187.761624	0	32	25
2025-05-16 8:00	2025-05-16 9:00	1:00:00	31.7	1479.108388	0	31	30
2025-05-16 9:00	2025-05-16 10:00	1:00:00	28.6	724.4359601	0	31	30
2025-05-16 10:00	2025-05-16 11:00	1:00:00	28.3	676.0829754	0	34	34
2025-05-16 11:00	2025-05-16 12:00	1:00:00	28.4	691.8309709	0	29	33
2025-05-16 12:00	2025-05-16 13:00	1:00:00	26.7	467.7351413	0	33	5
2025-05-16 13:00	2025-05-16 14:00	1:00:00	26.2	416.8693835	0	30	3
2025-05-16 14:00	2025-05-16 15:00	1:00:00	28.5	707.9457844	0	27	4
2025-05-16 15:00	2025-05-16 16:00	1:00:00	28.4	691.8309709	0	31	2
2025-05-16 16:00	2025-05-16 17:00	1:00:00	28.4	691.8309709	0	33	3
2025-05-16 17:00	2025-05-16 18:00	1:00:00	23.4	218.7761624	0	36	5
2025-05-16 18:00	2025-05-16 19:00	1:00:00	25.2	331.1311215	0	38	2
2025-05-16 19:00	2025-05-16 20:00	1:00:00	25.8	380.1893963	0	38	3
2025-05-16 20:00	2025-05-16 21:00	1:00:00	29.3	851.1380382	0	38	4
2025-05-16 21:00	2025-05-16 22:00	1:00:00	30.7	1174.897555	0	43	35
2025-05-16 22:00	2025-05-16 23:00	1:00:00	27.6	575.4399373	0	37	1
2025-05-16 23:00	2025-05-17 0:00	1:00:00	27.4	549.5408739	1.2	32	35
2025-05-17 0:00	2025-05-17 1:00	1:00:00	25	316.227766	3.5	32	3
2025-05-17 1:00	2025-05-17 2:00	1:00:00	24.8	301.995172	0	34	5
2025-05-17 2:00	2025-05-17 3:00	1:00:00	22	158.4893192	0	29	32
2025-05-17 3:00	2025-05-17 4:00	1:00:00	25.1	323.5936569	0	25	9
2025-05-17 4:00	2025-05-17 5:00	1:00:00	31.1	1288.249552	0	26	27
2025-05-17 5:00	2025-05-17 6:00	1:00:00	31	1258.925412	0	26	19
2025-05-17 6:00	2025-05-17 7:00	1:00:00	27.6	575.4399373	0	38	33
2025-05-17 7:00	2025-05-17 8:00	1:00:00	28.8	758.577575	0	37	9
2025-05-17 8:00	2025-05-17 9:00	1:00:00	28	630.9573445	0	33	9
2025-05-17 9:00	2025-05-17 10:00	1:00:00	31	1258.925412	0	23	13
2025-05-17 10:00	2025-05-17 11:00	1:00:00	34.5	2818.382931	0	27	15
2025-05-17 11:00	2025-05-17 12:00	1:00:00	35.2	3311.311215	0	26	13
2025-05-17 12:00	2025-05-17 13:00	1:00:00	33.6	2290.867653	0	29	13
2025-05-17 13:00	2025-05-17 14:00	1:00:00	33.6	2290.867653	0	34	11
2025-05-17 14:00	2025-05-17 15:00	1:00:00	35.4	3467.368505	0	29	12
2025-05-17 15:00	2025-05-17 16:00	1:00:00	35.3	3388.441561	0	31	12
2025-05-17 16:00	2025-05-17 17:00	1:00:00	37.5	5623.413252	0	31	13
2025-05-17 17:00	2025-05-17 18:00	1:00:00	37.3	5370.317964	0	30	15
2025-05-17 18:00	2025-05-17 19:00	1:00:00	34.8	3019.95172	0	26	13
2025-05-17 19:00	2025-05-17 20:00	1:00:00	34.1	2570.395783	0	29	14
2025-05-17 20:00	2025-05-17 21:00	1:00:00	33.1	2041.737945	0	28	15
2025-05-17 21:00	2025-05-17 22:00	1:00:00	33.4	2187.761624	0	24	13
2025-05-17 22:00	2025-05-17 23:00	1:00:00	29.2	831.7637711	0	27	12
2025-05-17 23:00	2025-05-18 0:00	1:00:00	29.9	977.237221	0	28	14
2025-05-18 0:00	2025-05-18 1:00	1:00:00	31.7	1479.108388	0	24	12
2025-05-18 1:00	2025-05-18 2:00	1:00:00	31.5	1412.537545	0	27	12
2025-05-18 2:00	2025-05-18 3:00	1:00:00	31.2	1318.256739	0	22	13
2025-05-18 3:00	2025-05-18 4:00	1:00:00	33.2	2089.296131	0	22	14
2025-05-18 4:00	2025-05-18 5:00	1:00:00	33.1	2041.737945	0	24	14
2025-05-18 5:00	2025-05-18 6:00	1:00:00	36.1	4073.802778	0	22	14
2025-05-18 6:00	2025-05-18 7:00	1:00:00	34.5	2818.382931	0	22	14
2025-05-18 7:00	2025-05-18 8:00	1:00:00	35.8	3801.893963	0	22	10
2025-05-18 8:00	2025-05-18 9:00	1:00:00	37.1	5128.61384	0	29	12
2025-05-18 9:00	2025-05-18 10:00	1:00:00	37.4	5495.408739	0	22	14
2025-05-18 10:00	2025-05-18 11:00	1:00:00	39.1	8128.305162	0	24	11
2025-05-18 11:00	2025-05-18 12:00	1:00:00	41.7	14791.08388	0.2	28	12
2025-05-18 12:00	2025-05-18 13:00	1:00:00	46.6	45708.81896	0.7	22	7
2025-05-18 13:00	2025-05-18 14:00	1:00:00	46.2	41686.93835	2.7	24	10
2025-05-18 14:00	2025-05-18 15:00	1:00:00	42.6	18197.00859	1.3	29	11
2025-05-18 15:00	2025-05-18 16:00	1:00:00	34.7	2951.209227	0	22	12

Excluded data during deployment/retrieval

Daytime (7:00-19:00)

Evening (19:00-23:00)

Nighttime (23:00-7:00)

Start Time	End Time	Duration	Leq (LAeq)(dBA)	Leq (LAeq) (SPL)	Precipitation (mm)	Wind Speed (km/h)	Wind Direction (10s deg)
2025-05-18 16:00	2025-05-18 17:00	1:00:00	32.5	1778.27941	0	23	12
2025-05-18 17:00	2025-05-18 18:00	1:00:00	32.2	1659.586907	0	31	11
2025-05-18 18:00	2025-05-18 19:00	1:00:00	29.7	933.2543008	0	23	13
2025-05-18 19:00	2025-05-18 20:00	1:00:00	29.1	812.8305162	0	22	11
2025-05-18 20:00	2025-05-18 21:00	1:00:00	30.9	1230.268771	0.1	22	9
2025-05-18 21:00	2025-05-18 22:00	1:00:00	37.3	5370.317964	0	22	10
2025-05-18 22:00	2025-05-18 23:00	1:00:00	33.3	2137.96209	0	22	10
2025-05-18 23:00	2025-05-19 0:00	1:00:00	33.1	2041.737945	0	22	15
2025-05-19 0:00	2025-05-19 1:00	1:00:00	32.1	1621.810097	0	22	19
2025-05-19 1:00	2025-05-19 2:00	1:00:00	32.3	1698.243652	0	22	17
2025-05-19 2:00	2025-05-19 3:00	1:00:00	32.7	1862.087137	0	22	16
2025-05-19 3:00	2025-05-19 4:00	1:00:00	37.4	5495.408739	0	22	16
2025-05-19 4:00	2025-05-19 5:00	1:00:00	38.6	7244.359601	0	21	16
2025-05-19 5:00	2025-05-19 5:21	0:21:42	36.3	4265.795188	0	21	15

Start Time	End Time	Duration	Leq (LAeq)(dBA)	Leq (LAeq) (SPL)	Precipitation (mm)	Wind Speed (km/h)	Wind Direction (10s deg)
2025-05-15 15:25	2025-05-15 16:00	0:34:47	43.4	21877.61624	0	34	24
2025-05-15 16:00	2025-05-15 17:00	1:00:00	38.7	7413.102413	0	36	26
2025-05-15 17:00	2025-05-15 18:00	1:00:00	38.6	7244.359601	0	34	26
2025-05-15 18:00	2025-05-15 19:00	1:00:00	36.7	4677.351413	0	33	25
2025-05-15 19:00	2025-05-15 20:00	1:00:00	35.7	3715.352291	0	33	26
2025-05-15 20:00	2025-05-15 21:00	1:00:00	51	125892.5412	0	38	22
2025-05-15 21:00	2025-05-15 22:00	1:00:00	56.2	416869.3835	0	37	21
2025-05-15 22:00	2025-05-15 23:00	1:00:00	46.8	47863.00923	0	33	15
2025-05-15 23:00	2025-05-16 0:00	1:00:00	43.2	20892.96131	0	26	21
2025-05-16 0:00	2025-05-16 1:00	1:00:00	43.1	20417.37945	0	26	20
2025-05-16 1:00	2025-05-16 2:00	1:00:00	46.1	40738.02778	0	24	21
2025-05-16 2:00	2025-05-16 3:00	1:00:00	46.4	43651.58322	0	27	19
2025-05-16 3:00	2025-05-16 4:00	1:00:00	47.1	51286.1384	0	27	19
2025-05-16 4:00	2025-05-16 5:00	1:00:00	44.4	27542.28703	0	25	14
2025-05-16 5:00	2025-05-16 6:00	1:00:00	48.2	66069.3448	0	28	19
2025-05-16 6:00	2025-05-16 7:00	1:00:00	34.9	3090.295433	0	37	19
2025-05-16 7:00	2025-05-16 8:00	1:00:00	35.5	3548.133892	0	32	25
2025-05-16 8:00	2025-05-16 9:00	1:00:00	32.1	1621.810097	0	31	30
2025-05-16 9:00	2025-05-16 10:00	1:00:00	31.6	1445.439771	0	31	30
2025-05-16 10:00	2025-05-16 11:00	1:00:00	32.5	1778.27941	0	34	34
2025-05-16 11:00	2025-05-16 12:00	1:00:00	33.5	2238.721139	0	29	33
2025-05-16 12:00	2025-05-16 13:00	1:00:00	28.5	707.9457844	0	33	5
2025-05-16 13:00	2025-05-16 14:00	1:00:00	30.5	1122.018454	0	30	3
2025-05-16 14:00	2025-05-16 15:00	1:00:00	29.7	933.2543008	0	27	4
2025-05-16 15:00	2025-05-16 16:00	1:00:00	31.8	1513.561248	0	31	2
2025-05-16 16:00	2025-05-16 17:00	1:00:00	31.9	1548.816619	0	33	3
2025-05-16 17:00	2025-05-16 18:00	1:00:00	28.1	645.654229	0	36	5
2025-05-16 18:00	2025-05-16 19:00	1:00:00	30	1000	0	38	2
2025-05-16 19:00	2025-05-16 20:00	1:00:00	37.2	5248.074602	0	38	3
2025-05-16 20:00	2025-05-16 21:00	1:00:00	49.2	83176.37711	0	38	4
2025-05-16 21:00	2025-05-16 22:00	1:00:00	52.4	173780.0829	0	43	35
2025-05-16 22:00	2025-05-16 23:00	1:00:00	48.3	67608.29754	0	37	1
2025-05-16 23:00	2025-05-17 0:00	1:00:00	46	39810.71706	1.2	32	35
2025-05-17 0:00	2025-05-17 1:00	1:00:00	42.7	18620.87137	3.5	32	3
2025-05-17 1:00	2025-05-17 2:00	1:00:00	40.6	11481.53621	0	34	5
2025-05-17 2:00	2025-05-17 3:00	1:00:00	39	7943.282347	0	29	32
2025-05-17 3:00	2025-05-17 4:00	1:00:00	39	7943.282347	0	25	9
2025-05-17 4:00	2025-05-17 5:00	1:00:00	38.9	7762.471166	0	26	27
2025-05-17 5:00	2025-05-17 6:00	1:00:00	35.1	3235.936569	0	26	19
2025-05-17 6:00	2025-05-17 7:00	1:00:00	33.9	2454.708916	0	38	33
2025-05-17 7:00	2025-05-17 8:00	1:00:00	31.5	1412.537545	0	37	9
2025-05-17 8:00	2025-05-17 9:00	1:00:00	27.9	616.5950019	0	33	9
2025-05-17 9:00	2025-05-17 10:00	1:00:00	33	1995.262315	0	23	13
2025-05-17 10:00	2025-05-17 11:00	1:00:00	38.3	6760.829754	0	27	15
2025-05-17 11:00	2025-05-17 12:00	1:00:00	39.5	8912.509381	0	26	13
2025-05-17 12:00	2025-05-17 13:00	1:00:00	38.8	7585.77575	0	29	13
2025-05-17 13:00	2025-05-17 14:00	1:00:00	37.5	5623.413252	0	34	11
2025-05-17 14:00	2025-05-17 15:00	1:00:00	40.9	12302.68771	0	29	12
2025-05-17 15:00	2025-05-17 16:00	1:00:00	40.1	10232.92992	0	31	12
2025-05-17 16:00	2025-05-17 17:00	1:00:00	41.6	14454.39771	0	31	13
2025-05-17 17:00	2025-05-17 18:00	1:00:00	39.9	9772.37221	0	30	15
2025-05-17 18:00	2025-05-17 19:00	1:00:00	38.4	6918.309709	0	26	13
2025-05-17 19:00	2025-05-17 20:00	1:00:00	35.6	3630.780548	0	29	14
2025-05-17 20:00	2025-05-17 21:00	1:00:00	46.6	45708.81896	0	28	15
2025-05-17 21:00	2025-05-17 22:00	1:00:00	49.2	83176.37711	0	24	13
2025-05-17 22:00	2025-05-17 23:00	1:00:00	44.7	29512.09227	0	27	12
2025-05-17 23:00	2025-05-18 0:00	1:00:00	41.3	13489.62883	0	28	14
2025-05-18 0:00	2025-05-18 1:00	1:00:00	39.4	8709.6359	0	24	12
2025-05-18 1:00	2025-05-18 2:00	1:00:00	40	10000	0	27	12
2025-05-18 2:00	2025-05-18 3:00	1:00:00	40.3	10715.19305	0	22	13
2025-05-18 3:00	2025-05-18 4:00	1:00:00	41.1	12882.49552	0	22	14
2025-05-18 4:00	2025-05-18 5:00	1:00:00	42.7	18620.87137	0	24	14
2025-05-18 5:00	2025-05-18 6:00	1:00:00	41.8	15135.61248	0	22	14
2025-05-18 6:00	2025-05-18 7:00	1:00:00	38.6	7244.359601	0	22	14
2025-05-18 7:00	2025-05-18 8:00	1:00:00	38.8	7585.77575	0	22	10
2025-05-18 8:00	2025-05-18 9:00	1:00:00	39.3	8511.380382	0	29	12
2025-05-18 9:00	2025-05-18 10:00	1:00:00	39.4	8709.6359	0	22	14
2025-05-18 10:00	2025-05-18 11:00	1:00:00	41.4	13803.84265	0	24	11
2025-05-18 11:00	2025-05-18 12:00	1:00:00	42.7	18620.87137	0.2	28	12
2025-05-18 12:00	2025-05-18 13:00	1:00:00	46.5	44668.35922	0.7	22	7
2025-05-18 13:00	2025-05-18 14:00	1:00:00	46.4	43651.58322	2.7	24	10
2025-05-18 14:00	2025-05-18 15:00	1:00:00	44.2	26302.67992	1.3	29	11
2025-05-18 15:00	2025-05-18 16:00	1:00:00	37	5011.872336	0	22	12

Excluded data during deployment/retrieval

Daytime (7:00-19:00)

Evening (19:00-23:00)

Nighttime (23:00-7:00)

Start Time	End Time	Duration	Leq (LAeq)(dBA)	Leq (LAeq) (SPL)	Precipitation (mm)	Wind Speed (km/h)	Wind Direction (10s deg)
2025-05-18 16:00	2025-05-18 17:00	1:00:00	35.2	3311.311215	0	23	12
2025-05-18 17:00	2025-05-18 18:00	1:00:00	36.4	4365.158322	0	31	11
2025-05-18 18:00	2025-05-18 19:00	1:00:00	35.2	3311.311215	0	23	13
2025-05-18 19:00	2025-05-18 20:00	1:00:00	35.6	3630.780548	0	22	11
2025-05-18 20:00	2025-05-18 21:00	1:00:00	40	10000	0.1	22	9
2025-05-18 21:00	2025-05-18 22:00	1:00:00	47.8	60255.95861	0	22	10
2025-05-18 22:00	2025-05-18 23:00	1:00:00	44.7	29512.09227	0	22	10
2025-05-18 23:00	2025-05-19 0:00	1:00:00	44	25118.86432	0	22	15
2025-05-19 0:00	2025-05-19 1:00	1:00:00	44.8	30199.5172	0	22	19
2025-05-19 1:00	2025-05-19 2:00	1:00:00	45	31622.7766	0	22	17
2025-05-19 2:00	2025-05-19 3:00	1:00:00	45.7	37153.52291	0	22	16
2025-05-19 3:00	2025-05-19 4:00	1:00:00	45.6	36307.80548	0	22	16
2025-05-19 4:00	2025-05-19 5:00	1:00:00	45.1	32359.36569	0	21	16
2025-05-19 5:00	2025-05-19 5:27	0:27:21	41.2	13182.56739	0	21	15

Start Time	End Time	Duration	Leq (LAeq)(dBA)	Leq (LAeq) (SPL)	Precipitation (mm)	Wind Speed (km/h)	Wind Direction (10s deg)
2025-05-12 15:37	2025-05-12 16:00	0:22:11	51.1	128824.9552	0	16	31
2025-05-12 16:00	2025-05-12 17:00	1:00:00	39.8	9549.92586	0	13	32
2025-05-12 17:00	2025-05-12 18:00	1:00:00	33.9	2454.708916	0	15	32
2025-05-12 18:00	2025-05-12 19:00	1:00:00	35.9	3890.45145	0	5	31
2025-05-12 19:00	2025-05-12 20:00	1:00:00	35.9	3890.45145	0	10	22
2025-05-12 20:00	2025-05-12 21:00	1:00:00	36.1	4073.802778	0	0	
2025-05-12 21:00	2025-05-12 22:00	1:00:00	35.3	3388.441561	0	0	
2025-05-12 22:00	2025-05-12 23:00	1:00:00	34.5	2818.382931	0	0	
2025-05-12 23:00	2025-05-13 0:00	1:00:00	36.8	4786.300923	0	4	21
2025-05-13 0:00	2025-05-13 1:00	1:00:00	34.1	2570.395783	0	9	25
2025-05-13 1:00	2025-05-13 2:00	1:00:00	33.3	2137.96209	0	7	13
2025-05-13 2:00	2025-05-13 3:00	1:00:00	24.6	288.4031503	0	3	18
2025-05-13 3:00	2025-05-13 4:00	1:00:00	27.4	549.5408739	0	5	28
2025-05-13 4:00	2025-05-13 5:00	1:00:00	43.4	21877.61624	0	12	31
2025-05-13 5:00	2025-05-13 6:00	1:00:00	37.1	5128.61384	0	14	30
2025-05-13 6:00	2025-05-13 7:00	1:00:00	30.6	1148.153621	0	13	32
2025-05-13 7:00	2025-05-13 8:00	1:00:00	37.1	5128.61384	0	16	34
2025-05-13 8:00	2025-05-13 9:00	1:00:00	40.6	11481.53621	0	13	33
2025-05-13 9:00	2025-05-13 10:00	1:00:00	44.3	26915.34804	0	22	35
2025-05-13 10:00	2025-05-13 11:00	1:00:00	45.7	37153.52291	0	22	34
2025-05-13 11:00	2025-05-13 12:00	1:00:00	46.5	44668.35922	0	25	35
2025-05-13 12:00	2025-05-13 13:00	1:00:00	47.9	61659.50019	0	21	34
2025-05-13 13:00	2025-05-13 14:00	1:00:00	44.6	28840.31503	0	27	34
2025-05-13 14:00	2025-05-13 15:00	1:00:00	45.9	38904.5145	0	21	35
2025-05-13 15:00	2025-05-13 16:00	1:00:00	46.2	41686.93835	0	22	36
2025-05-13 16:00	2025-05-13 17:00	1:00:00	42.9	19498.446	0	17	35
2025-05-13 17:00	2025-05-13 18:00	1:00:00	39.9	9772.37221	0	8	35
2025-05-13 18:00	2025-05-13 19:00	1:00:00	34.9	3090.295433	0	10	2
2025-05-13 19:00	2025-05-13 20:00	1:00:00	29.1	812.8305162	0	0	
2025-05-13 20:00	2025-05-13 21:00	1:00:00	34.4	2754.228703	0	0	
2025-05-13 21:00	2025-05-13 22:00	1:00:00	28.3	676.0829754	0	0	
2025-05-13 22:00	2025-05-13 23:00	1:00:00	45.4	34673.68505	0	0	
2025-05-13 23:00	2025-05-14 0:00	1:00:00	25	316.227766	0	0	
2025-05-14 0:00	2025-05-14 1:00	1:00:00	23.5	223.8721139	0	0	
2025-05-14 1:00	2025-05-14 2:00	1:00:00	22.5	177.827941	0	0	
2025-05-14 2:00	2025-05-14 3:00	1:00:00	20.1	102.3292992	0	0	
2025-05-14 3:00	2025-05-14 4:00	1:00:00	20.8	120.2264435	0	0	
2025-05-14 4:00	2025-05-14 5:00	1:00:00	38.8	7585.77575	0	0	
2025-05-14 5:00	2025-05-14 6:00	1:00:00	34.2	2630.267992	0	0	
2025-05-14 6:00	2025-05-14 7:00	1:00:00	30.8	1202.264435	0	7	19
2025-05-14 7:00	2025-05-14 8:00	1:00:00	33	1995.262315	0	6	19
2025-05-14 8:00	2025-05-14 9:00	1:00:00	27.4	549.5408739	0	11	20
2025-05-14 9:00	2025-05-14 10:00	1:00:00	24.8	301.995172	0	17	20
2025-05-14 10:00	2025-05-14 11:00	1:00:00	32.1	1621.810097	0	3	19
2025-05-14 11:00	2025-05-14 12:00	1:00:00	29.4	870.96359	0	3	20
2025-05-14 12:00	2025-05-14 13:00	1:00:00	28.1	645.654229	0	6	20
2025-05-14 13:00	2025-05-14 14:00	1:00:00	34.5	2818.382931	0	6	23
2025-05-14 14:00	2025-05-14 15:00	1:00:00	33.1	2041.737945	0	6	24
2025-05-14 15:00	2025-05-14 16:00	1:00:00	41.6	14454.39771	0	7	24
2025-05-14 16:00	2025-05-14 17:00	1:00:00	45.5	35481.33892	0	15	19
2025-05-14 17:00	2025-05-14 18:00	1:00:00	43.6	22908.67653	0	17	21
2025-05-14 18:00	2025-05-14 19:00	1:00:00	41	12589.25412	0	6	24
2025-05-14 19:00	2025-05-14 20:00	1:00:00	36.4	4365.158322	0	3	25
2025-05-14 20:00	2025-05-14 21:00	1:00:00	32.3	1698.243652	0	3	22
2025-05-14 21:00	2025-05-14 22:00	1:00:00	33.9	2454.708916	0	0	
2025-05-14 22:00	2025-05-14 23:00	1:00:00	32.5	1778.27941	0	8	26
2025-05-14 23:00	2025-05-15 0:00	1:00:00	31.7	1479.108388	0	5	26
2025-05-15 0:00	2025-05-15 1:00	1:00:00	30.9	1230.268771	0	0	
2025-05-15 1:00	2025-05-15 2:00	1:00:00	30	1000	0	0	
2025-05-15 2:00	2025-05-15 3:00	1:00:00	28.6	724.4359601	0	0	
2025-05-15 3:00	2025-05-15 4:00	1:00:00	30	1000	0	0	
2025-05-15 4:00	2025-05-15 5:00	1:00:00	37.1	5128.61384	0	0	
2025-05-15 5:00	2025-05-15 6:00	1:00:00	35.1	3235.936569	0	0	
2025-05-15 6:00	2025-05-15 7:00	1:00:00	43.3	21379.6209	0	5	20
2025-05-15 7:00	2025-05-15 8:00	1:00:00	35.9	3890.45145	0	10	19
2025-05-15 8:00	2025-05-15 9:00	1:00:00	35.3	3388.441561	0	0	
2025-05-15 9:00	2025-05-15 10:00	1:00:00	33	1995.262315	0	19	22
2025-05-15 10:00	2025-05-15 11:00	1:00:00	32.9	1949.8446	0	29	24
2025-05-15 11:00	2025-05-15 12:00	1:00:00	40.4	10964.78196	0	29	27
2025-05-15 12:00	2025-05-15 13:00	1:00:00	38.5	7079.457844	0	32	25
2025-05-15 13:00	2025-05-15 13:47	0:47:32	40.8	12022.64435	0	15	27

	Excluded data during deployment/retrieval
	Daytime (7:00-19:00)
	Evening (19:00-23:00)
	Nighttime (23:00-7:00)

Start Time	End Time	Duration	Leq (LAeq)(dBA)	Leq (LAeq) (SPL)	Precipitation (mm)	Wind Speed (km/h)	Wind Direction (10s deg)
2025-05-23 14:34	2025-05-23 15:00	0:25:10	47.7	58884.36554	3	3	6
2025-05-23 15:00	2025-05-23 16:00	1:00:00	45.6	36307.80548	0.4	5	11
2025-05-23 16:00	2025-05-23 17:00	1:00:00	45.3	33884.41561	0.1	10	10
2025-05-23 17:00	2025-05-23 18:00	1:00:00	45.1	32359.36569	0	6	9
2025-05-23 18:00	2025-05-23 19:00	1:00:00	45.9	38904.5145	0	8	8
2025-05-23 19:00	2025-05-23 20:00	1:00:00	43.5	22387.21139	0	4	12
2025-05-23 20:00	2025-05-23 21:00	1:00:00	42.3	16982.43652	0	4	13
2025-05-23 21:00	2025-05-23 22:00	1:00:00	45.9	38904.5145	0	0	
2025-05-23 22:00	2025-05-23 23:00	1:00:00	41.5	14125.37545	0	0	
2025-05-23 23:00	2025-05-24 0:00	1:00:00	40.8	12022.64435	0	0	
2025-05-24 0:00	2025-05-24 1:00	1:00:00	40.9	12302.68771	0	0	
2025-05-24 1:00	2025-05-24 2:00	1:00:00	41.8	15135.61248	0	6	17
2025-05-24 2:00	2025-05-24 3:00	1:00:00	42.2	16595.86907	0	5	18
2025-05-24 3:00	2025-05-24 4:00	1:00:00	42.9	19498.446	0	12	18
2025-05-24 4:00	2025-05-24 5:00	1:00:00	44.7	29512.09227	0	16	19
2025-05-24 5:00	2025-05-24 6:00	1:00:00	44.4	27542.28703	0	11	19
2025-05-24 6:00	2025-05-24 7:00	1:00:00	43.6	22908.67653	0	6	19
2025-05-24 7:00	2025-05-24 8:00	1:00:00	43.7	23442.28815	0	11	18
2025-05-24 8:00	2025-05-24 9:00	1:00:00	43.3	21379.6209	0	12	20
2025-05-24 9:00	2025-05-24 10:00	1:00:00	44	25118.86432	0	4	17
2025-05-24 10:00	2025-05-24 11:00	1:00:00	42.5	17782.7941	0	6	16
2025-05-24 11:00	2025-05-24 12:00	1:00:00	42.3	16982.43652	0	10	15
2025-05-24 12:00	2025-05-24 13:00	1:00:00	44.2	26302.67992	0	7	21
2025-05-24 13:00	2025-05-24 14:00	1:00:00	43.1	20417.37945	0	8	21
2025-05-24 14:00	2025-05-24 15:00	1:00:00	42.7	18620.87137	0	3	19
2025-05-24 15:00	2025-05-24 16:00	1:00:00	42.3	16982.43652	0	8	19
2025-05-24 16:00	2025-05-24 17:00	1:00:00	45	31622.7766	0	13	18
2025-05-24 17:00	2025-05-24 18:00	1:00:00	44.9	30902.95433	0	12	17
2025-05-24 18:00	2025-05-24 19:00	1:00:00	44.4	27542.28703	0	11	18
2025-05-24 19:00	2025-05-24 20:00	1:00:00	42.7	18620.87137	0	6	17
2025-05-24 20:00	2025-05-24 21:00	1:00:00	45.5	35481.33892	0	0	
2025-05-24 21:00	2025-05-24 22:00	1:00:00	53.3	213796.209	0	6	18
2025-05-24 22:00	2025-05-24 23:00	1:00:00	51.2	131825.6739	0	0	
2025-05-24 23:00	2025-05-25 0:00	1:00:00	47	50118.72336	0	4	19
2025-05-25 0:00	2025-05-25 1:00	1:00:00	44.8	30199.5172	0	0	
2025-05-25 1:00	2025-05-25 2:00	1:00:00	43.5	22387.21139	0	0	
2025-05-25 2:00	2025-05-25 3:00	1:00:00	44.3	26915.34804	0	0	
2025-05-25 3:00	2025-05-25 4:00	1:00:00	43	19952.62315	0	0	
2025-05-25 4:00	2025-05-25 5:00	1:00:00	44.1	25703.95783	0	0	
2025-05-25 5:00	2025-05-25 6:00	1:00:00	42.7	18620.87137	0	0	
2025-05-25 6:00	2025-05-25 7:00	1:00:00	48	63095.73445	0	0	
2025-05-25 7:00	2025-05-25 8:00	1:00:00	38.3	6760.829754	0	0	
2025-05-25 8:00	2025-05-25 9:00	1:00:00	37.2	5248.074602	0	0	
2025-05-25 9:00	2025-05-25 10:00	1:00:00	36.2	4168.693835	0	0	
2025-05-25 10:00	2025-05-25 11:00	1:00:00	35	3162.27766	0	0	
2025-05-25 11:00	2025-05-25 12:00	1:00:00	35	3162.27766	0	4	19
2025-05-25 12:00	2025-05-25 13:00	1:00:00	40.3	10715.19305	0.2	0	
2025-05-25 13:00	2025-05-25 14:00	1:00:00	36.1	4073.802778	0.3	0	
2025-05-25 14:00	2025-05-25 15:00	1:00:00	34.4	2754.228703	0	3	19
2025-05-25 15:00	2025-05-25 16:00	1:00:00	34.7	2951.209227	0.1	0	
2025-05-25 16:00	2025-05-25 17:00	1:00:00	34.1	2570.395783	0	0	
2025-05-25 17:00	2025-05-25 18:00	1:00:00	36.1	4073.802778	0.5	0	
2025-05-25 18:00	2025-05-25 19:00	1:00:00	37.3	5370.317964	2.9	0	
2025-05-25 19:00	2025-05-25 20:00	1:00:00	37.4	5495.408739	1.4	0	
2025-05-25 20:00	2025-05-25 21:00	1:00:00	44.6	28840.31503	0.7	0	
2025-05-25 21:00	2025-05-25 22:00	1:00:00	52.9	194984.46	1.3	0	
2025-05-25 22:00	2025-05-25 23:00	1:00:00	51.8	151356.1248	0.1	0	
2025-05-25 23:00	2025-05-26 0:00	1:00:00	48.5	70794.57844	0	0	
2025-05-26 0:00	2025-05-26 1:00	1:00:00	46	39810.71706	0	0	
2025-05-26 1:00	2025-05-26 2:00	1:00:00	44.6	28840.31503	0	0	
2025-05-26 2:00	2025-05-26 3:00	1:00:00	46.3	42657.95188	0	0	
2025-05-26 3:00	2025-05-26 4:00	1:00:00	45.7	37153.52291	0	0	
2025-05-26 4:00	2025-05-26 5:00	1:00:00	45.9	38904.5145	0	0	
2025-05-26 5:00	2025-05-26 6:00	1:00:00	39.7	9332.543008	0	0	
2025-05-26 6:00	2025-05-26 7:00	1:00:00	37.6	5754.399373	0	0	
2025-05-26 7:00	2025-05-26 8:00	1:00:00	37.8	6025.595861	0	0	
2025-05-26 8:00	2025-05-26 9:00	1:00:00	37.6	5754.399373	0	4	35
2025-05-26 9:00	2025-05-26 10:00	1:00:00	38.5	7079.457844			
2025-05-26 10:00	2025-05-26 11:00	1:00:00	33.1	2041.737945	0	9	1
2025-05-26 11:00	2025-05-26 12:00	1:00:00	33.8	2398.832919	0	8	2
2025-05-26 12:00	2025-05-26 13:00	1:00:00	32.8	1905.460718	0	6	36
2025-05-26 13:00	2025-05-26 13:15	0:12:42	31.9	1548.816619	0	7	33

Excluded data during deployment/retrieval
Daytime (7:00-19:00)
Evening (19:00-23:00)
Nighttime (23:00-7:00)

APPENDIX E

GROUNDWATER WELLS

Well Number	Address	Community	County	Year Installed	Well Depth (m)	Casing Depth (m)	Bedrock Depth (m)	Static (m)	Yield (Lpm)	Elevation (m)	Well Type	Water Use	Easting	Northing
030324		GOLDBORO	GUYSBOROUGH	2003-05-28	85.26	7	4.57	7.61	2.27	58	DRILLED	Domestic	606500	5003500
080314	HIGHWAY #316 (GOLDBORO GAS PLANT ROAD)	GOLDBORO	GUYSBOROUGH	2008-01-10	91.35	12.18	5.48	0.91	13.62	41	DRILLED	Commercial	608688	5003061
100051	12736 HIGHWAY #316	GOLDBORO	GUYSBOROUGH	2010-01-07	86.78	10.66	6.7	6.09	2.27	15	DRILLED	Domestic	606232	5003501
880366		GOLDBORO	GUYSBOROUGH	1988-07-14	91.35	6.39	3.65	4.26	3.18	58	DRILLED	Domestic	606500	5003500
981181		GOLDBORO	GUYSBOROUGH	1998-11-19	36.54	7.61	3.96	9.14	18.16	58	DRILLED	Domestic	606500	5003500

APPENDIX F

ABANDONED MINE OPENINGS

ID	Hazard	Notes	Easting	Northing	Latitude	Longitude
AMO 1	Low		607496	5002467	45.16750309	-61.63210877
AMO 2	Low		607502	5002459	45.16742553	-61.63203568
AMO 3	High	Well-hidden AMO, deep enough to cause harm.	607540	5002444	45.16728804	-61.63155740
AMO 4	High	Well-hidden AMO, containing water.	607510	5002438	45.16723613	-61.63194032
AMO 5	High	Well-hidden AMO, deep enough to cause harm.	607488	5002447	45.16732177	-61.63221694
AMO 6	High	Well-hidden AMO, deep enough to cause harm.	607488	5002442	45.16727956	-61.63221379
AMO 7	High	Well-hidden AMO, deep enough to cause harm.	607481	5002437	45.16723507	-61.63230230
AMO 8	High	Moderately well-hidden AMO with wooden debris within.	607465	5002443	45.16728666	-61.63250384
AMO 9	Low		607462	5002432	45.16718812	-61.63254676
AMO 10	Low		607428	5002473	45.16756257	-61.63297651
AMO 11	Low		607423	5002475	45.16758774	-61.63303090
AMO 12	Low		607406	5002476	45.16759350	-61.63324814
AMO 13	Low		607359	5002493	45.16775205	-61.63384108
AMO 14	Low		607699	5002443	45.16725164	-61.62952999
AMO 15	Low		607758	5002475	45.16752995	-61.62877419
AMO 16	High	Well-hidden AMO, deep enough to cause harm.	607756	5002441	45.16723038	-61.62880708
AMO 17	Low		607745	5002434	45.16716976	-61.62894296
AMO 18	Low		607570	5002482	45.16762649	-61.63116250
AMO 19	Low		607542	5002481	45.16762219	-61.63151893
AMO 20	Low		607471	5002499	45.16779705	-61.63241612
AMO 21	Low		607458	5002500	45.16780512	-61.63258269
AMO 22	Low		607452	5002506	45.16786295	-61.63266571
AMO 23	Low		607454	5002509	45.16788213	-61.63262944
AMO 24	Low		607445	5002519	45.16797281	-61.63274049
AMO 25	Low		607432	5002509	45.16789079	-61.63291108
AMO 26	Low		607421	5002516	45.16795311	-61.63305573
AMO 27	Low		607412	5002514	45.16793824	-61.63316772
AMO 28	Low		607403	5002522	45.16801344	-61.63328352
AMO 29	Low		607368	5002525	45.16804299	-61.63372302
AMO 30	High	Well-hidden AMO, deep enough to cause harm.	607418	5002562	45.16837012	-61.63308062
AMO 31	Low		607418	5002558	45.16832795	-61.63307655
AMO 32	High	Well-hidden AMO, deep enough to cause harm.	607413	5002546	45.16822655	-61.63315166
AMO 33	High	Lightly well-hidden AMO containing water.	607414	5002546	45.16822480	-61.63314047
AMO 34	High	Lightly well-hidden AMO containing water and woody debris.	607393	5002552	45.16827760	-61.63340321
AMO 35	Low		607744	5002683	45.16940360	-61.62890590
AMO 36	Low		607711	5002717	45.16972086	-61.62931627
AMO 37	Low		607698	5002725	45.16979034	-61.62947694

ID	Hazard	Notes	Easting	Northing	Latitude	Longitude
AMO 38	Low		607684	5002727	45.16980813	-61.62965572
AMO 39	Low	Apparent well-infilled AMO.	607671	5002736	45.16989491	-61.62982553
AMO 40	Low		607490	5002625	45.16892313	-61.63215296
AMO 41	High	Well-hidden AMO, deep enough to cause harm.	607494	5002619	45.16886802	-61.63209978
AMO 42	High	Well-hidden AMO, deep enough to cause harm.	607489	5002613	45.16881958	-61.63216171
AMO 43	High	Well-hidden AMO, deep enough to cause harm.	607469	5002632	45.16899439	-61.63241424
AMO 44	High	Well-hidden AMO, deep enough to cause harm.	607487	5002795	45.17045241	-61.63215090
AMO 45	Low	Well-hidden, moderately deep AMO.	607477	5002758	45.17012342	-61.63229271
AMO 46	Low		607313	5001856	45.16203029	-61.63456671
AMO 47	Low		607313	5001866	45.16212479	-61.63457155
AMO 48	Low		607138	5001962	45.16301305	-61.63677041
AMO 49	Low		607496	5001704	45.16063863	-61.63227022
AMO 50	Low		607487	5001720	45.16077982	-61.63238236
AMO 51	High	Well-hidden AMO, deep enough to cause harm.	607493	5001727	45.16084125	-61.63230899
AMO 52	Low		607459	5001727	45.16084812	-61.63273213
AMO 53	High	Well-hidden AMO, deep enough to cause harm.	607461	5001714	45.16072649	-61.63272000
AMO 54	High	Well-hidden AMO, deep enough to cause harm.	607466	5001708	45.16067219	-61.63265172
AMO 55	Low		607463	5001703	45.16063333	-61.63269011
AMO 56	Low		607462	5001702	45.16061809	-61.63270866
AMO 57	High	Moderately well-hidden AMO containing water.	607518	5001643	45.16008415	-61.63199970
AMO 58	Low		607400	5001645	45.16011997	-61.63350795
AMO 59	Low		607398	5001658	45.16023922	-61.63352753
AMO 60	Low		607372	5001666	45.16031436	-61.63386001
AMO 61	Low		607402	5001690	45.16052615	-61.63346539
AMO 62	Low		607404	5001711	45.16071641	-61.63344625
AMO 63	High	Well-hidden AMO, deep enough to cause harm.	607418	5001722	45.16080515	-61.63325561
AMO 64	Low		607418	5001728	45.16086630	-61.63326498
AMO 65	Low		607418	5001756	45.16111187	-61.63324985
AMO 66	Low		607399	5001753	45.16109500	-61.63350148
AMO 67	Low		607415	5001776	45.16129288	-61.63328728
AMO 68	Low		607731	5001867	45.16206512	-61.62925155
AMO 69	Low		607763	5001848	45.16189130	-61.62884557
AMO 70	High	Well-hidden AMO, deep enough to cause harm.	607709	5001811	45.16156690	-61.62953495
AMO 71	Low		607703	5001786	45.16134080	-61.62961993
AMO 72	Low		607688	5001767	45.16117361	-61.62981061
AMO 73	High	Well-hidden AMO, deep enough to cause harm.	607678	5001735	45.16088375	-61.62994741
AMO 74	Low		607552	5001736	45.16091312	-61.63155537

ID	Hazard	Notes	Easting	Northing	Latitude	Longitude
AMO 75	Low		607530	5001733	45.16089256	-61.63182939
AMO 76	Low		607538	5001742	45.16097449	-61.63172828
AMO 77	High	Well-hidden AMO, deep enough to cause harm.	607517	5001768	45.16120363	-61.63199716
AMO 78	High	Well-hidden AMO, deep enough to cause harm.	607520	5001764	45.16117470	-61.63194853
AMO 79	Low		607531	5001791	45.16141146	-61.63180947
AMO 80	Low		607535	5001804	45.16152889	-61.63175899
AMO 81	Low	Large conglomeration of abandoned mine openings. All moderately visible.	607266	5001953	45.16291211	-61.63514564
AMO 82	Low		607336	5001928	45.16267726	-61.63425457
AMO 83	Low		607350	5001933	45.16271418	-61.63408637
AMO 84	Low		607374	5001939	45.16276862	-61.63377230
AMO 85	High	Well-hidden AMO, deep enough to cause harm.	607368	5001906	45.16247552	-61.63386039
AMO 86	Low		607469	5001860	45.16204742	-61.63257861
AMO 87	Low		607478	5001877	45.16219529	-61.63246597
AMO 88	Low		607651	5001881	45.16220048	-61.63025713
AMO 89	Low		607629	5001875	45.16215772	-61.63054216
AMO 90	High	Well-hidden AMO, containing water.	607594	5001891	45.16230670	-61.63098241
AMO 91	Low		607578	5001894	45.16232968	-61.63118919
AMO 92	High	Well-hidden AMO, containing water.	607561	5001898	45.16237103	-61.63139869
AMO 93	Low		607560	5001902	45.16240274	-61.63141620
AMO 94	Low		607553	5001899	45.16237905	-61.63150648
AMO 95	Low		607543	5001901	45.16240002	-61.63163791
AMO 96	Low		607496	5001917	45.16254871	-61.63222976
AMO 97	Low		607489	5001920	45.16258154	-61.63231364
AMO 98	High	Moderately well-hidden AMO containing water and woody debris.	607475	5001919	45.16257677	-61.63249722
AMO 99	Low		607451	5001918	45.16256550	-61.63279554
AMO 100	Low		607443	5001924	45.16262087	-61.63289841
AMO 101	Low		607442	5001924	45.16262175	-61.63291345
AMO 102	High	Well-hidden AMO, deep enough to cause harm.	607374	5001973	45.16307410	-61.63376259
AMO 103	High	Well-hidden AMO, deep enough to cause harm.	607378	5001981	45.16314917	-61.63370949
AMO 104	Low		607345	5001976	45.16310749	-61.63413672
AMO 105	Low		607317	5001977	45.16311848	-61.63448859
AMO 106	Low		607247	5002119	45.16440673	-61.63534481
AMO 107	Low		607464	5002462	45.16746331	-61.63252110
AMO 108	Low		607460	5002463	45.16747124	-61.63257262

Low Risk: AMO is visible, shallow, and/or does not contain hazardous material within. The chance of causing serious personal harm is low.

High Risk: AMO not visible, deep, and/or contains hazardous material within. The chance of causing serious personal harm is moderate or high.

APPENDIX G

WATERCOURSES CHARACTERISTICS AND PHOTO LOG

WATERCOURSE ID	FLOW TYPE	WATER DEPTH (m)	VELOCITY (m/s)	BANKFULL WIDTH (m)	HABITAT CHARACTERISTICS	DIRECTION OF FLOW	SUBSTRATE COMPOSITION (%)	ENTRENCHMENT	BANK STABILITY
WC1	Intermittent	0.03-0.11	N/A	0.78-1.38	Flat	East	Rubble (30), Cobble (5), Gravel (15), Muck (50)	Moderately Entrenched	High
WC2	Perennial	0.02-0.13	0-0.87	1.2-2.1	Flat, Riffle	Northeast	Muck (100)	Slightly Entrenched	High
WC3	Intermittent	0.02-0.1	0-0.92	0.6-1.2	Flat, No Defined Channel	East	Rubble (5), Muck (95)	Slightly Entrenched	High
WC4	Intermittent	0-0.12	0.00	0.45-0.70	Run, Riffle	East	Muck (100)	Slightly Entrenched	Moderate
WC5	Intermittent	0-0.05	0.00	0.95-1.00	Flat, Pool	East	Cobble (20), Gravel (15), Silt (5), Muck (60)	Slightly Entrenched	Moderate
WC6	Intermittent	0-0.2	0.00	0-0.8	No Defined Channel	East	Muck (100)	Moderately Entrenched	Moderate
WC7	Perennial	0.08-0.29	0.05-0.1	1.2-1.8	No Defined Channel, Riffle, Run	Southeast	Bedrock (20), Muck (80)	Slightly Entrenched	High
WC8	Perennial	0.05-0.19	0.01-0.1	0.47-1.9	Flat	West	Cobble (50), Muck (50)	Moderately Entrenched	Low
WC9*	Ephemeral	NA	NA	~0.5-1.0	NA	NA	NA	NA	NA
WC10	Perennial	0.05-0.28	0.10	0.32-0.58	Run, Riffle	West	Cobble (50), Muck (50)	Moderately Entrenched	Moderate
WC11	Perennial	0.15-0.25	0.01	1.34-4.1	Flat, Pool, Run	Southwest	Cobble (50), Muck (50)	Not Entrenched	Moderate
WC12	Perennial	0.16-0.37	0.01	1.60-1.98	Flat	Southeast	Cobble (50), Muck (50)	Not Entrenched	Moderate
WC13	Perennial	0.03-0.17	0-0.01	0.51-1.55	Pool, Flat	Southwest	Muck (100)	Slightly Entrenched	High
WC14	Intermittent	0.01-0.24	0-0.05	0.4-0.7	Run	Southeast	Rubble (25), Cobble (5), Muck (75)	Moderately Entrenched	Low
WC15	Intermittent	0.03-0.18	0.00	1.2-2.5	Run	East	Boulder (10), Rubble (10), Cobble (5), Gravel (10), Muck (65)	Moderately Entrenched	Moderate
WC16	Perennial	0.55-0.32	0.01-0.05	57-60	Flat	Southeast	Boulder (3), Rubble (3), Cobble (7), Gravel (7), Sand (13), Silt (22), Muck (27), Clay (18)	Moderately Entrenched	Low
WC17	Intermittent	0.03-0.08	0.00	1.9-2.67	Riffle-run	South	Boulder (15), Rubble (10), Cobble (40), Silt (5), Muck (30)	Moderately Entrenched	Moderate
WC18	Intermittent	0-0.13	0.00	0.33-1.3	Riffle, Pool, No defined channel	East	Boulder (35), Rubble (20), Cobble (15), Muck (35)	Moderately Entrenched	Moderate
WC19	Perennial	0.01-0.23	0-0.05	1.3-2.2	Riffle-run, Pool	Southeast	Boulder (50), Rubble (10), Cobble (5), Gravel (10), Muck (25)	Moderately Entrenched	Moderate
WC20	Perennial	0.12-0.32	0.00	1.1-1.82	Flat	Southeast	Boulder (15), Rubble (20), Cobble (15), Muck (50)	Moderately Entrenched	Moderate
WC21	Intermittent	0.03-0.13	0.00	0.7-1.28	Flat	South	Boulder (10), Rubble (25), Cobble (15), Gravel (10), Muck (40)	Moderately Entrenched	Moderate

*Delineated from aerial imagery



Photo 1: Representative photo of WC1.



Photo 2: Representative photo of WC2.



Photo 3: Evidence of alteration along WC2.



Photo 4: Representative photo of WC3.



Photo 5: Representative photo of WC4.



Photo 6: Representative photo of WC5.



Photo 7: Representative photo of WC6.



Photo 8: Representative photo of WC7.



Photo 9: Representative photo of WC8.



Photo 10: Representative photo of WC9 (delineated from aerial imagery)



Photo 11: Representative photo of WC10.



Photo 12: Representative photo of WC11.



Photo 13: Evidence of alteration along WC11.



Photo 14: Representative photo of WC12.



Photo 15: Representative photo of WC13.



Photo 16: Evidence of alteration along WC13.



Photo 17: Representative photo of WC14.



Photo 18: Representative photo of WC15.



Photo 19: Representative photo of WC16.



Photo 20: Representative photo of WC17.



Photo 21: Representative photo of WC18.



Photo 22: Representative photo of WC19.



Photo 23: Representative photo of WC20.



Photo 24: Representative photo of WC21.

APPENDIX H

ACCDC REPORTS

DATA REPORT 8205: Goldboro, NS

Prepared 30 August 2024
by K.Tenwolde,
Conservation Data Analyst

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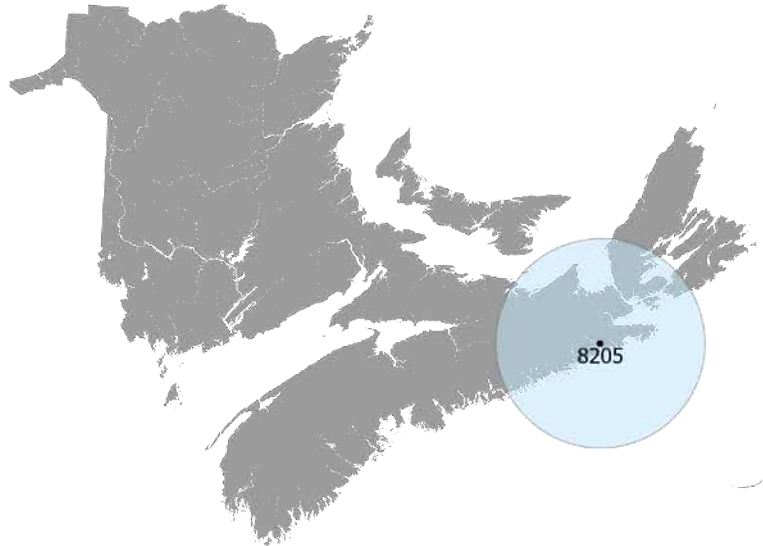
4.2 Flora

4.3 Location Sensitive Species

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5.0 Rare Species within 100 km

5.1 Source Bibliography



Map 1. A 100 km buffer around the study area

1.0 PREFACE

The Atlantic Canada Conservation Data Centre (AC CDC; www.accdc.com) is part of a network of NatureServe data centres and heritage programs serving 50 states in the U.S.A, 10 provinces and 1 territory in Canada, plus several Central and South American countries. The NatureServe network is more than 30 years old and shares a common conservation data methodology. The AC CDC was founded in 1997, and maintains data for the jurisdictions of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. Although a non-governmental agency, the AC CDC is supported by 6 federal agencies and 4 provincial governments, as well as through outside grants and data processing fees.

Upon request and for a fee, the AC CDC queries its database and produces customized reports of the rare and endangered flora and fauna known to occur in or near a specified study area. As a supplement to that data, the AC CDC includes locations of managed areas with some level of protection and known sites of ecological interest or sensitivity.

1.1 DATA LIST

Included datasets:

Filename

GoldboroNS_8205ob.xls

GoldboroNS_8205ob100km.xls

GoldboroNS_8205msa.xls

GoldboroNS_8205ff_py.xls

Contents

Rare or legally protected Flora and Fauna in your study area

A list of Rare and legally protected Flora and Fauna within 100 km of your study area

Managed and Biologically Significant Areas in your study area

Rare Freshwater Fish in your study area (DFO database)

1.2 RESTRICTIONS

The AC CDC makes a strong effort to verify the accuracy of all the data that it manages, but it shall not be held responsible for any inaccuracies in data that it provides. By accepting AC CDC data, recipients assent to the following limits of use:

- a) Data is restricted to use by trained personnel who are sensitive to landowner interests and to potential threats to rare and/or endangered flora and fauna posed by the information provided.
- b) Data is restricted to use by the specified Data User; any third-party requiring data must make its own data request.
- c) The AC CDC requires Data Users to cease using and delete data 12 months after receipt, and to make a new request for updated data, if necessary, at that time.
- d) AC CDC data responses are restricted to the data in our Data System at the time of the data request.
- e) Each record has an estimate of locational uncertainty, which must be referenced to understand the record's relevance to a particular location. Please see attached Data Dictionary for details.
- f) AC CDC data responses are not to be construed as exhaustive inventories of taxa in an area.
- g) The absence of a taxon cannot be inferred by its absence in an AC CDC data response.

1.3 ADDITIONAL INFORMATION

The accompanying Data Dictionary provides metadata for the data provided.

Please direct any additional questions about AC CDC data to the following individuals:

Plants, Lichens, Ranking Methods, All other Inquiries

Sean Blaney
Senior Scientist / Executive Director
(506) 364-2658
sean.blaney@accdc.ca

Animals (Fauna)

John Klymko
Zoologist
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Charity Robicheau
Senior Conservation Data Analyst
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Billing

Jean Breau
Financial Manager / Executive Assistant
(506) 364-2657
jean.breau@accdc.ca

Questions on the biology of Federal Species at Risk can be directed to AC CDC: (506) 364-2658, with questions on Species at Risk regulations to: Samara Eaton, Canadian Wildlife Service (NB and PE): (506) 364-5060 or Julie McKnight, Canadian Wildlife Service (NS): (902) 426-4196.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in New Brunswick, please contact Hubert Askanas, Energy and Resource Development: (506) 453-5873.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in Nova Scotia, please contact Donna Hurlburt, NS DLF: (902) 679-6886. To determine if location-sensitive species (section 4.3) occur near your study site please contact a NS DLF Regional Biologist:

Western: Emma Vost
(902) 670-8187
Emma.Vost@novascotia.ca

Western: Sarah Spencer
(902) 541-0081
Sarah.Spencer@novascotia.ca

Central: Shavonne Meyer
(902) 893-0816
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Central: Kimberly George
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Eastern: Harrison Moore
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Eastern: Maureen Cameron-MacMillan
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Maureen.Cameron-MacMillan@novascotia.ca

Eastern: Elizabeth Walsh
(902) 563-3370
Elizabeth.Walsh@novascotia.ca

For provincial information about rare taxa and protected areas, or information about game animals, fish habitat etc., in Prince Edward Island, please contact Garry Gregory, PEI Dept. of Communities, Land and Environment: (902) 569-7595.

2.0 RARE AND ENDANGERED SPECIES

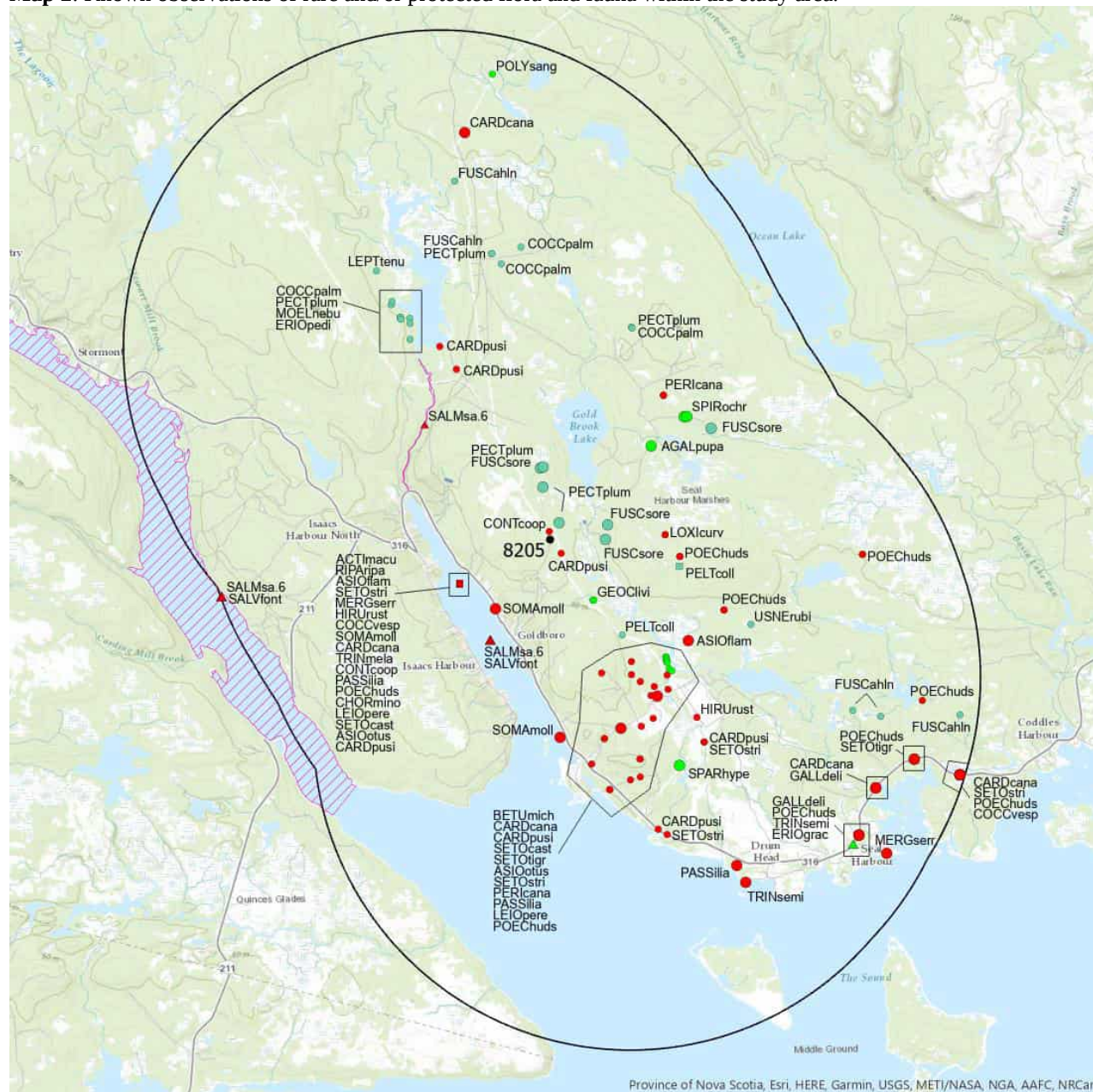
2.1 FLORA

The study area contains 16 records of 7 vascular and 31 records of 9 nonvascular flora (Map 2 and attached: *ob.xls), excluding 'location-sensitive' species.

2.2 FAUNA

The study area contains 96 records of 25 vertebrate and no records of invertebrate fauna (Map 2 and attached data files - see 1.1 Data List), excluding 'location-sensitive' species'. Please see section 4.3 to determine if 'location-sensitive' species occur near your study site.

Map 2: Known observations of rare and/or protected flora and fauna within the study area.



3.0 SPECIAL AREAS

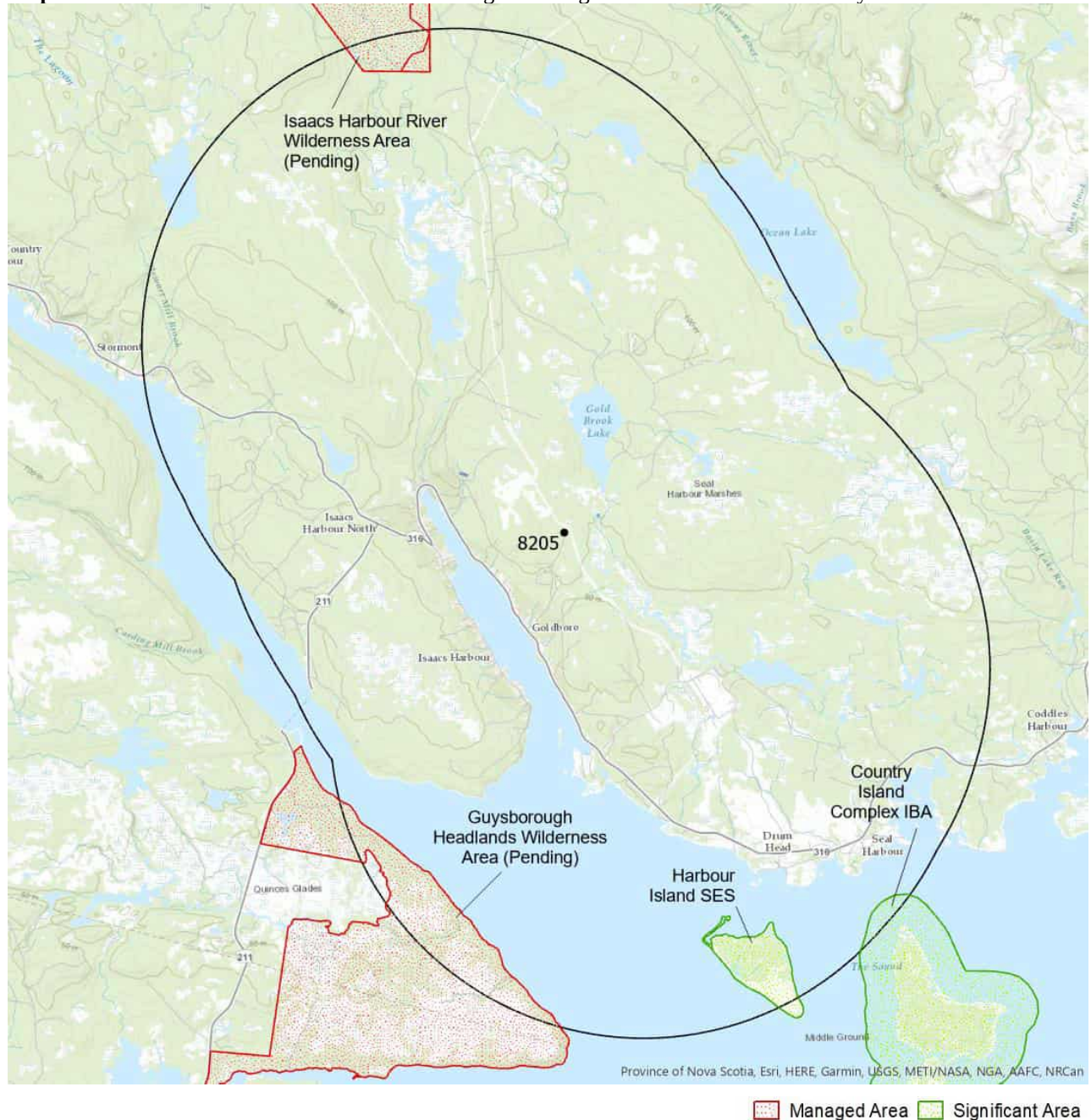
3.1 MANAGED AREAS

The GIS scan identified 2 managed areas in the vicinity of the study area (Map 3 and attached file: *msa.xls).

3.2 SIGNIFICANT AREAS

The GIS scan identified 2 biologically significant sites in the vicinity of the study area (Map 3 and attached file: *msa.xls).

Map 3: Boundaries and/or locations of known Managed and Significant Areas within the study area.



4.0 RARE SPECIES LISTS

Rare and/or endangered taxa (excluding “location-sensitive” species, section 4.3) within the study area listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation ($\pm$ the precision, in km, of the record). [P] = vascular plant, [N] = nonvascular plant, [A] = vertebrate animal, [I] = invertebrate animal, [C] = community. Note: records are from attached files *ob.xls/*ob.shp only.

4.1 FLORA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
N	<i>Erioderma pedicellatum</i> (Atlantic pop.)	Boreal Felt Lichen - Atlantic pop.	Endangered	Endangered	Endangered	S1	3	4.2 $\pm$ 0.01
N	<i>Pectenaria plumbea</i>	Blue Felt Lichen	Special Concern	Special Concern	Vulnerable	S3	6	0.3 $\pm$ 0.2
N	<i>Moelleropsis nebulosa</i>	Blue-gray Moss Shingle Lichen				S2S3	1	4.3 $\pm$ 0.01
N	<i>Usnea rubicunda</i>	Red Beard Lichen				S2S3	1	3.5 $\pm$ 0.01
N	<i>Scytinium tenuissimum</i>	Birdnest Jellyskin Lichen				S2S3	1	5.1 $\pm$ 0.01
N	<i>Fuscopannaria sorediata</i>	a Lichen				S2S3	4	0.9 $\pm$ 0.2
N	<i>Fuscopannaria ahlneri</i>	Roughened Shingle Lichen				S3	5	4.6 $\pm$ 0.01
N	<i>Peltigera collina</i>	Tree Pelt Lichen				S3	2	1.9 $\pm$ 0.01
N	<i>Coccocarpia palmicola</i>	Salted Shell Lichen				S3S4	8	3.6 $\pm$ 0.01
P	<i>Sparganium hyperboreum</i>	Northern Burreed				S2	1	4.1 $\pm$ 0.1
P	<i>Agalinis purpurea</i> var. <i>parviflora</i>	Small-flowered Purple False Foxglove				S2S3	1	2.2 $\pm$ 0.2
P	<i>Betula michauxii</i>	Michaux's Dwarf Birch				S3	8	2.6 $\pm$ 0.01
P	<i>Polygala sanguinea</i>	Blood Milkwort				S3	1	7.4 $\pm$ 0.01
P	<i>Eriophorum gracile</i>	Slender Cottongrass				S3	1	6.8 $\pm$ 1.0
P	<i>Spiranthes ochroleuca</i>	Yellow Ladies'-tresses				S3?	2	2.9 $\pm$ 0.2
P	<i>Geocaulon lividum</i>	Northern Comandra				S3S4	2	1.2 $\pm$ 0.01

4.2 FAUNA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
A	<i>Salmo salar</i> pop. 6	Atlantic Salmon - Nova Scotia Southern Upland population	Endangered			S1	3	1.9 $\pm$ 1.0
A	<i>Asio flammeus</i>	Short-eared Owl	Threatened	Special Concern		S1B	2	1.6 $\pm$ 7.07
A	<i>Riparia riparia</i>	Bank Swallow	Threatened	Threatened	Endangered	S2B	1	1.6 $\pm$ 7.07
A	<i>Hirundo rustica</i>	Barn Swallow	Special Concern	Threatened	Endangered	S3B	2	1.6 $\pm$ 7.07
A	<i>Cardellina canadensis</i>	Canada Warbler	Special Concern	Threatened	Endangered	S3B	11	1.6 $\pm$ 7.07
A	<i>Chordeiles minor</i>	Common Nighthawk	Special Concern	Special Concern	Threatened	S3B	1	1.6 $\pm$ 7.07
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Special Concern	Special Concern	Threatened	S3B	2	0.1 $\pm$ 0.01
A	<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Special Concern	Special Concern	Vulnerable	S3B,S3N,S3M	2	1.6 $\pm$ 7.07
A	<i>Somateria mollissima</i>	Common Eider				S2B,S2N,S4M	4	1.4 $\pm$ 0.2
A	<i>Asio otus</i>	Long-eared Owl				S2S3	2	1.6 $\pm$ 7.07
A	<i>Perisoreus canadensis</i>	Canada Jay				S3	4	2.9 $\pm$ 0.01
A	<i>Poecile hudsonicus</i>	Boreal Chickadee				S3	18	1.6 $\pm$ 7.07
A	<i>Salvelinus fontinalis</i>	Brook Trout				S3	2	1.9 $\pm$ 1.0
A	<i>Tringa semipalmata</i>	Willet				S3B	2	6.3 $\pm$ 0.2
A	<i>Tringa melanoleuca</i>	Greater Yellowlegs				S3B,S4M	1	1.6 $\pm$ 7.07
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S4S5N,S5M	2	1.6 $\pm$ 7.07
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3B,S5M	3	6.5 $\pm$ 0.25
A	<i>Setophaga striata</i>	Blackpoll Warbler				S3B,S5M	5	1.6 $\pm$ 7.07
A	<i>Cardellina pusilla</i>	Wilson's Warbler				S3B,S5M	12	0.3 $\pm$ 0.01
A	<i>Setophaga tigrina</i>	Cape May Warbler				S3B,SUM	2	3.6 $\pm$ 0.01
A	<i>Loxia curvirostra</i>	Red Crossbill				S3S4	2	1.8 $\pm$ 0.01
A	<i>Setophaga castanea</i>	Bay-breasted Warbler				S3S4B,S4S5M	6	1.6 $\pm$ 7.07
A	<i>Actitis macularius</i>	Spotted Sandpiper				S3S4B,S5M	2	1.6 $\pm$ 7.07
A	<i>Leiothlypis peregrina</i>	Tennessee Warbler				S3S4B,S5M	2	1.6 $\pm$ 7.07
A	<i>Passerella iliaca</i>	Fox Sparrow				S3S4B,S5M	3	1.6 $\pm$ 7.07

4.3 LOCATION SENSITIVE SPECIES

The Department of Natural Resources in each Maritimes province considers a number of species “location sensitive”. Concern about exploitation of location-sensitive species precludes inclusion of precise coordinates in this report. Those intersecting your study area are indicated below with “YES”.

Nova Scotia

Scientific Name	Common Name	SARA	Prov Legal Prot	Known within the Study Site?
<i>Alces alces americana</i>	Moose – Mainland population		Endangered	YES
<i>Fraxinus nigra</i>	Black Ash		Threatened	No
<i>Emydoidea blandingii</i>	Blanding's Turtle - Nova Scotia pop.	Endangered	Endangered	No
<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	No
<i>Falco peregrinus</i> pop. 1	Peregrine Falcon - anatum/tundrius pop.		Vulnerable	No
Bat <i>Hibernaculum</i> or bat species occurrence		[Endangered]¹	[Endangered]¹	YES
<i>Snake hibernaculum</i>		[Threatened] ²	[Threatened] ²	No

1 *Myotis lucifugus* (Little Brown Myotis), *Myotis septentrionalis* (Long-eared Myotis), and *Perimyotis subflavus* (Tri-colored Bat or Eastern Pipistrelle) are all Endangered under the Federal Species at Risk Act and the NS Endangered Species Act.

2 *Thamnophis sauritus* (Eastern Ribbonsnake) is Threatened under the Federal Species at Risk Act (SARA) and the Nova Scotia Endangered Species Act. Occurrences between October 15 – April 15 are considered location sensitive.

4.4 SOURCE BIBLIOGRAPHY

The recipient of these data shall acknowledge the AC CDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

# recs	CITATION
29	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
21	Pepper, C. 2021. Rare bird, plant and mammal observations in Nova Scotia, 2017-2021.
19	Pardieck, K.L., Ziolkowski Jr., D.J., Lutmerding, M., Aponte, V.I., and Hudson, M-A.R. 2020. North American Breeding Bird Survey Dataset 1966 - 2019: U.S. Geological Survey data release, https://doi.org/10.5066/P9J6QUF6
17	Cameron, R.P. 2011. Lichen observations, 2011. Nova Scotia Environment & Labour, 731 recs.
13	Bell, G. 2018. Moose, bat and bird records from Goldboro LNG Project, NS, Environmental Assessment. Amec Foster Wheeler.
11	LaPaix, R.W.; Crowell, M.J.; MacDonald, M.; Neily, T.D.; Quinn, G. 2017. Stantec Nova Scotia rare plant records, 2012-2016. Stantec Consulting.
7	Benjamin, L.K. (compiler). 2007. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 8439 recs.
7	iNaturalist. 2020. iNaturalist Data Export 2020. iNaturalist.org and iNaturalist.ca, Web site: 128728 recs.
6	iNaturalist.ca. 2023. iNaturalist Data Export December 2022. iNaturalist.org; iNaturalist.ca, Web site: 128634 recs.
5	Neily, T.H. & Pepper, C. 2020. Nova Scotia SMP lichen surveys 2020. Mersey Tobeatic Research Institute.
4	Nova Scotia Department of Lands and Forestry. 2020. NS Lands Proposed or Pending Protection. NSDLF, 231 features. Received via email.
2	Benjamin, L.K. (compiler). 2012. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 4965 recs.
2	Neily, T.H. & Pepper, C.; Toms, B. 2018. Nova Scotia lichen database [as of 2018-03]. Mersey Tobeatic Research Institute.
2	Newell, R.E. 2000. E.C. Smith Herbarium Database. Acadia University, Wolfville NS, 7139 recs.
1	Bird Studies Canada. 2020. Important Bird and Biodiversity Areas in Canada database (Retrieved: 28 July, 2020 from https://www.ibacanada.com/explore.jsp?lang=EN). IBA Program.
1	Cameron, R.P. 2009. Erioderma pedicellatum database, 1979-2008. Dept Environment & Labour, 103 recs.
1	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2014.
1	Munro, Marian K. Tracked lichen specimens, Nova Scotia Provincial Museum of Natural History Herbarium. Atlantic Canada Conservation Data Centre. 2019.
1	Neily, T.H. & Pepper, C.; Toms, B. 2013. Nova Scotia lichen location database. Mersey Tobeatic Research Institute, 1301 records.
1	Neily, T.H. & Pepper, C.; Toms, B. 2020. Nova Scotia lichen database [as of 2020-03-18]. Mersey Tobeatic Research Institute.
1	Neily, T.H. 2010. Erioderma Pedicellatum records 2005-09. Mersey Tobiatic Research Institute, 67 recs.

5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 26894 records of 147 vertebrate and 611 records of 51 invertebrate fauna; 3626 records of 218 vascular and 3430 records of 109 nonvascular flora (attached: *ob100km.xls).

Taxa within 100 km of the study site that are rare and/or endangered in the province in which the study site occurs (including “location-sensitive” species). All ranks correspond to the province in which the study site falls, even for out-of-province records. Taxa are listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation ($\pm$ the precision, in km, of the record).

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	<i>Myotis lucifugus</i>	Little Brown Myotis	Endangered	Endangered	Endangered	S1	44	27.0 $\pm$ 0.1	NS
A	<i>Salmo salar</i> pop. 1	Atlantic Salmon - Inner Bay of Fundy population	Endangered	Endangered		S1	1	95.4 $\pm$ 0.5	NS
A	<i>Salmo salar</i> pop. 4	Atlantic Salmon - Eastern Cape Breton population	Endangered			S1	8	56.4 $\pm$ 0.5	NS
A	<i>Salmo salar</i> pop. 6	Atlantic Salmon - Nova Scotia Southern Upland population	Endangered			S1	35	1.9 $\pm$ 1.0	NS
A	<i>Charadrius melodus melodus</i>	Piping Plover melodus subspecies	Endangered	Endangered	Endangered	S1B	778	18.6 $\pm$ 7.07	NS
A	<i>Sterna dougallii</i>	Roseate Tern	Endangered	Endangered	Endangered	S1B	79	10.0 $\pm$ 0.5	NS
A	<i>Dermochelys coriacea</i> pop. 2	Leatherback Sea Turtle - Atlantic population	Endangered	Endangered		S1S2N	2	52.5 $\pm$ 0.2	NS
A	<i>Pagophila eburnea</i>	Ivory Gull	Endangered	Endangered		SNA	1	53.4 $\pm$ 0.2	NS
A	<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	Endangered	Threatened		SNA	1	53.1 $\pm$ 0.2	NS
A	<i>Icteria virens</i>	Yellow-Breasted Chat	Endangered	Endangered		SNA	1	11.7 $\pm$ 0.2	NS
A	<i>Lasiurus cinereus</i>	Hoary Bat	Endangered			SUB,S1M	1	50.0 $\pm$ 0.2	NS
A	<i>Lamna nasus</i> pop. 1	Porbeagle - Northwest Atlantic population	Endangered				1	51.4 $\pm$ 1.52	NS
A	<i>Catharus minimus minimus</i>	Gray-cheeked Thrush minimus subspecies	Threatened			S1?B	10	38.6 $\pm$ 7.07	NS
A	<i>Catharus bicknelli</i>	Bicknell's Thrush	Threatened	Threatened	Endangered	S1B	1	76.6 $\pm$ 7.07	NS
A	<i>Asio flammeus</i>	Short-eared Owl	Threatened	Special Concern		S1B	7	1.6 $\pm$ 7.07	NS
A	<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	Threatened	S2	7891	21.4 $\pm$ 10.0	NS
A	<i>Riparia riparia</i>	Bank Swallow	Threatened	Threatened	Endangered	S2B	621	1.6 $\pm$ 7.07	NS
A	<i>Chaetura pelagica</i>	Chimney Swift	Threatened	Threatened	Endangered	S2S3B,S1M	610	21.1 $\pm$ 7.07	NS
A	<i>Limosa haemastica</i>	Hudsonian Godwit	Threatened			S2S3M	9	23.2 $\pm$ 0.2	NS
A	<i>Hydrobates leucorhous</i>	Leach's Storm-Petrel	Threatened			S3B	70	13.2 $\pm$ 0.2	NS
A	<i>Tringa flavipes</i>	Lesser Yellowlegs	Threatened			S3M	262	11.9 $\pm$ 1.07	NS
A	<i>Anguilla rostrata</i>	American Eel	Threatened			S3N	18	18.3 $\pm$ 0.2	NS
A	<i>Sturnella magna</i>	Eastern Meadowlark	Threatened	Threatened		SHB	2	25.0 $\pm$ 0.15	NS
A	<i>Hylocichla mustelina</i>	Wood Thrush	Threatened	Threatened		SUB	8	12.6 $\pm$ 7.07	NS
A	<i>Salmo salar</i> pop. 12	Atlantic Salmon - Gaspé - Southern Gulf of St. Lawrence population	Special Concern			S1	23	43.4 $\pm$ 50.0	NS
A	<i>Antrostomus vociferus</i>	Eastern Whip-Poor-Will	Special Concern	Threatened	Threatened	S1?B	2	58.5 $\pm$ 7.07	NS
A	<i>Passerculus sandwichensis princeps</i>	Ipswich Sparrow	Special Concern	Special Concern		S1B	14	11.8 $\pm$ 3.81	NS
A	<i>Bucephala islandica</i> pop. 1	Barrow's Goldeneye - Eastern Population	Special Concern	Special Concern		S1N,SUM	28	29.7 $\pm$ 0.2	NS
A	<i>Euphagus carolinus</i>	Rusty Blackbird	Special Concern	Special Concern	Endangered	S2B	211	100.0 $\pm$ 0.25	NS
A	<i>Histrionicus histrionicus</i> pop. 1	Harlequin Duck - Eastern population	Special Concern	Special Concern	Endangered	S2N	48	11.9 $\pm$ 0.2	NS
A	<i>Phalaropus lobatus</i>	Red-necked Phalarope	Special Concern	Special Concern		S2S3M	1	12.1 $\pm$ 0.2	NS
A	<i>Morone saxatilis</i> pop. 1	Striped Bass - Southern Gulf of St. Lawrence population	Special Concern			S2S3N	1	53.2 $\pm$ 1.0	NS
A	<i>Chelydra serpentina</i>	Snapping Turtle	Special Concern	Special Concern	Vulnerable	S3	73	26.6 $\pm$ 0.2	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	<i>Hirundo rustica</i>	Barn Swallow	Special Concern	Threatened	Endangered	S3B	686	1.6 ± 7.07	NS
A	<i>Cardellina canadensis</i>	Canada Warbler	Special Concern	Threatened	Endangered	S3B	708	1.6 ± 7.07	NS
A	<i>Chordeiles minor</i>	Common Nighthawk	Special Concern	Special Concern	Threatened	S3B	309	1.6 ± 7.07	NS
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Special Concern	Special Concern	Threatened	S3B	997	0.1 ± 0.01	NS
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Special Concern	Threatened	Vulnerable	S3B	339	15.7 ± 7.07	NS
A	<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Special Concern	Special Concern	Vulnerable	S3B,S3N,S3M	566	1.6 ± 7.07	NS
A	<i>Podiceps auritus</i>	Horned Grebe	Special Concern	Special Concern		S3N,SUM	28	13.2 ± 0.21	NS
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern	Special Concern	Vulnerable	S3S4B	465	11.5 ± 7.07	NS
A	<i>Phocoena phocoena</i> pop. 1	Harbour Porpoise - Northwest Atlantic Population	Special Concern			S4	17	52.3 ± 0.2	NS
A	<i>Chrysemys picta picta</i>	Eastern Painted Turtle	Special Concern	Special Concern		S4	11	45.1 ± 1.0	NS
A	<i>Calidris subruficollis</i>	Buff-breasted Sandpiper	Special Concern	Special Concern		SNA	2	85.7 ± 0.29	NS
A	<i>Accipiter cooperii</i>	Cooper's Hawk	Not At Risk			S1?B,SUN,SUM	13	19.6 ± 0.2	NS
A	<i>Fulica americana</i>	American Coot	Not At Risk			S1B	5	12.0 ± 0.2	NS
A	<i>Chlidonias niger</i>	Black Tern	Not At Risk			S1B	4	13.2 ± 0.34	NS
A	<i>Falco peregrinus</i> pop. 1	Peregrine Falcon - anatum/tundrius	Not At Risk		Vulnerable	S1B,SUM	9	11.9 ± 0.89	NS
A	<i>Aegolius funereus</i>	Boreal Owl	Not At Risk			S2?B,SUM	6	24.0 ± 0.2	NS
A	<i>Lynx canadensis</i>	Canada Lynx	Not At Risk		Endangered	S2S3	13	68.8 ± 1.0	NS
A	<i>Hemidactylium scutatum</i>	Four-toed Salamander	Not At Risk			S3	12	15.1 ± 0.5	NS
A	<i>Megaptera novaeangliae</i>	Humpback Whale	Not At Risk			S3	12	52.3 ± 0.2	NS
A	<i>Sterna hirundo</i>	Common Tern	Not At Risk			S3B	479	10.2 ± 0.2	NS
A	<i>Sialia sialis</i>	Eastern Bluebird	Not At Risk			S3B	22	11.5 ± 7.07	NS
A	<i>Buteo lagopus</i>	Rough-legged Hawk	Not At Risk			S3N	8	26.5 ± 6.1	NS
A	<i>Accipiter atricapillus</i>	American Goshawk	Not At Risk			S3S4	93	100.0 ± 0.6	NS
A	<i>Glaucomys volans</i>	Southern Flying Squirrel	Not At Risk			S3S4	1	96.2 ± 0.2	NS
A	<i>Lagenorhynchus acutus</i>	Atlantic White-sided Dolphin	Not At Risk			S3S4	2	53.2 ± 0.2	NS
A	<i>Ammodramus nelsoni</i>	Nelson's Sparrow	Not At Risk			S3S4B	105	12.4 ± 0.2	NS
A	<i>Calidris canutus rufa</i>	Red Knot rufa subspecies	E,SC	Endangered	Endangered	S2M	27	13.2 ± 0.34	NS
A	<i>Morone saxatilis</i>	Striped Bass	E,SC			S2S3B,S2S3N	7	50.6 ± 0.2	NS
A	<i>Salmo salar</i>	Atlantic Salmon	E,T,SC			S1B,S1N	8	33.5 ± 0.2	NS
A	<i>Alces alces americana</i>	Moose			Endangered	S1	127	100.0 ± 0.5	NS
A	<i>Alces alces</i>	Moose				S1	8	13.3 ± 0.2	NS
A	<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S1?	4	22.4 ± 7.07	NS
A	<i>Uria aalge</i>	Common Murre				S1?B	1	79.1 ± 0.2	NS
A	<i>Passerina cyanea</i>	Indigo Bunting				S1?B,SUM	20	18.1 ± 0.2	NS
A	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron				S1B	1	63.1 ± 7.07	NS
A	<i>Oxyura jamaicensis</i>	Ruddy Duck				S1B	11	50.3 ± 7.07	NS
A	<i>Bartramia longicauda</i>	Upland Sandpiper				S1B	1	12.3 ± 0.2	NS
A	<i>Myiarchus crinitus</i>	Great Crested Flycatcher				S1B	1	99.5 ± 7.07	NS
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S1B	21	13.3 ± 0.37	NS
A	<i>Toxostoma rufum</i>	Brown Thrasher				S1B	8	20.2 ± 0.2	NS
A	<i>Charadrius semipalmatus</i>	Semipalmated Plover				S1B,S4M	339	12.0 ± 0.2	NS
A	<i>Calidris minutilla</i>	Least Sandpiper				S1B,S4M	195	12.2 ± 0.2	NS
A	<i>Anas acuta</i>	Northern Pintail				S1B,SUM	12	37.6 ± 7.07	NS
A	<i>Vireo gilvus</i>	Warbling Vireo				S1B,SUM	7	20.5 ± 0.2	NS
A	<i>Vespertilionidae</i> sp.	bat species				S1S2	63	19.8 ± 0.1	NS
A	<i>Poocetes gramineus</i>	Vesper Sparrow				S1S2B,SUM	7	22.4 ± 7.07	NS
A	<i>Vireo philadelphicus</i>	Philadelphia Vireo				S2?B,SUM	19	13.2 ± 0.34	NS
A	<i>Alca torda</i>	Razorbill				S2B	13	12.2 ± 0.2	NS
A	<i>Fratercula arctica</i>	Atlantic Puffin				S2B	4	13.2 ± 0.34	NS
A	<i>Empidonax traillii</i>	Willow Flycatcher				S2B	4	37.6 ± 7.07	NS
A	<i>Molothrus ater</i>	Brown-headed Cowbird				S2B	63	11.6 ± 0.29	NS
A	<i>Somateria mollissima</i>	Common Eider				S2B,S2N,S4M	645	1.4 ± 0.2	NS
A	<i>Spatula clypeata</i>	Northern Shoveler				S2B,SUM	6	54.3 ± 0.2	NS
A	<i>Mareca strepera</i>	Gadwall				S2B,SUM	16	25.4 ± 0.2	NS
A	<i>Piranga olivacea</i>	Scarlet Tanager				S2B,SUM	9	19.7 ± 0.4	NS

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A	<i>Calidris alba</i>	Sanderling				S2N,S3M	147	100.0 ± 0.9	NS
A	<i>Melanitta perspicillata</i>	Surf Scoter				S2N,S4M	98	11.9 ± 3.24	NS
A	<i>Melanitta deglandi</i>	White-winged Scoter				S2N,S4M	26	11.8 ± 1.92	NS
A	<i>Asio otus</i>	Long-eared Owl				S2S3	23	1.6 ± 7.07	NS
A	<i>Rallus limicola</i>	Virginia Rail				S2S3B	7	39.3 ± 7.07	NS
A	<i>Rissa tridactyla</i>	Black-legged Kittiwake				S2S3B	20	13.5 ± 0.2	NS
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S2S3B	117	14.5 ± 0.25	NS
A	<i>Phalacrocorax carbo</i>	Great Cormorant				S2S3B,S2S3N	116	12.6 ± 1.4	NS
A	<i>Cathartes aura</i>	Turkey Vulture				S2S3B,S4S5M	14	19.6 ± 0.2	NS
A	<i>Setophaga pinus</i>	Pine Warbler				S2S3B,S4S5M	31	12.6 ± 0.2	NS
A	<i>Icterus galbula</i>	Baltimore Oriole				S2S3B,SUM	60	18.6 ± 0.2	NS
A	<i>Pluvialis dominica</i>	American Golden-Plover				S2S3M	27	54.6 ± 0.5	NS
A	<i>Numenius phaeopus hudsonicus</i>	Whimbrel				S2S3M	76	12.4 ± 0.2	NS
A	<i>Phalaropus fulicarius</i>	Red Phalarope				S2S3M	1	12.3 ± 0.36	NS
A	<i>Perisoreus canadensis</i>	Canada Jay				S3	507	10.7 ± 0.01	NS
A	<i>Poecile hudsonicus</i>	Boreal Chickadee				S3	1007	1.6 ± 7.07	NS
A	<i>Spinus pinus</i>	Pine Siskin				S3	400	11.5 ± 7.07	NS
A	<i>Salvelinus fontinalis</i>	Brook Trout				S3	59	1.9 ± 1.0	NS
A	<i>Salvelinus namaycush</i>	Lake Trout				S3	1	80.4 ± 0.5	NS
A	<i>Pekania pennanti</i>	Fisher				S3	6	39.4 ± 7.74	NS
A	<i>Calcarius lapponicus</i>	Lapland Longspur				S3?N,SUM	7	24.9 ± 4.16	NS
A	<i>Spatula discors</i>	Blue-winged Teal				S3B	78	19.4 ± 7.07	NS
A	<i>Charadrius vociferus</i>	Killdeer				S3B	220	15.7 ± 7.07	NS
A	<i>Tringa semipalmata</i>	Willet				S3B	687	10.8 ± 7.07	NS
A	<i>Sterna paradisaea</i>	Arctic Tern				S3B	110	11.2 ± 7.07	NS
A	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo				S3B	53	22.4 ± 7.07	NS
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3B	92	100.0 ± 0.25	NS
A	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak				S3B	338	18.8 ± 0.2	NS
A	<i>Alosa pseudoharengus</i>	Alewife				S3B	22	18.3 ± 1.0	NS
A	<i>Tringa melanoleuca</i>	Greater Yellowlegs				S3B,S4M	371	1.6 ± 7.07	NS
A	<i>Falco sparverius</i>	American Kestrel				S3B,S4S5M	264	11.5 ± 7.07	NS
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S4S5N,S5M	184	1.6 ± 7.07	NS
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3B,S5M	439	10.6 ± 0.25	NS
A	<i>Setophaga striata</i>	Blackpoll Warbler				S3B,S5M	149	1.6 ± 7.07	NS
A	<i>Cardellina pusilla</i>	Wilson's Warbler				S3B,S5M	130	0.3 ± 0.01	NS
A	<i>Pinicola enucleator</i>	Pine Grosbeak				S3B,S5N,S5M	106	12.6 ± 7.07	NS
A	<i>Setophaga tigrina</i>	Cape May Warbler				S3B,SUM	209	10.1 ± 0.25	NS
A	<i>Branta bernicla</i>	Brant				S3M	1	36.8 ± 16.6	NS
A	<i>Pluvialis squatarola</i>	Black-bellied Plover				S3M	222	12.2 ± 0.2	NS
A	<i>Arenaria interpres</i>	Ruddy Turnstone				S3M	126	11.6 ± 0.2	NS
A	<i>Calidris pusilla</i>	Semipalmated Sandpiper				S3M	254	100.0 ± 0.54	NS
A	<i>Calidris melanotos</i>	Pectoral Sandpiper				S3M	37	12.2 ± 0.2	NS
A	<i>Limnodromus griseus</i>	Short-billed Dowitcher				S3M	146	12.1 ± 1.09	NS
A	<i>Chroicocephalus ridibundus</i>	Black-headed Gull				S3N	71	16.1 ± 0.29	NS
A	<i>Picoides arcticus</i>	Black-backed Woodpecker				S3S4	110	12.6 ± 0.01	NS
A	<i>Loxia curvirostra</i>	Red Crossbill				S3S4	116	1.8 ± 0.01	NS
A	<i>Botaurus lentiginosus</i>	American Bittern				S3S4B,S4S5M	212	19.9 ± 0.15	NS
A	<i>Setophaga castanea</i>	Bay-breasted Warbler				S3S4B,S4S5M	480	1.6 ± 7.07	NS
A	<i>Actitis macularia</i>	Spotted Sandpiper				S3S4B,S5M	639	1.6 ± 7.07	NS
A	<i>Leiothlypis peregrina</i>	Tennessee Warbler				S3S4B,S5M	452	1.6 ± 7.07	NS
A	<i>Passerella iliaca</i>	Fox Sparrow				S3S4B,S5M	130	1.6 ± 7.07	NS
A	<i>Bucephala albeola</i>	Bufflehead				S3S4N	72	13.3 ± 4.64	NS
A	<i>Calidris maritima</i>	Purple Sandpiper				S3S4N	36	13.2 ± 0.34	NS
A	<i>Lanius borealis</i>	Northern Shrike				S3S4N	5	19.6 ± 1.04	NS
A	<i>Morus bassanus</i>	Northern Gannet				SHB	127	12.0 ± 0.2	NS
A	<i>Aythya americana</i>	Redhead				SHB	17	18.5 ± 0.82	NS
A	<i>Leucophaeus atricilla</i>	Laughing Gull				SHB	4	13.2 ± 0.34	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	<i>Progne subis</i>	Purple Martin				SHB	5	12.3 ± 0.2	NS
A	<i>Eremophila alpestris</i>	Horned Lark				SHB,S4S5N,S5M	9	77.0 ± 0.2	NS
I	<i>Bombus bohemicus</i>	Ashton Cuckoo Bumble Bee	Endangered	Endangered	Endangered	S1	5	50.4 ± 5.0	NS
I	<i>Danaus plexippus</i>	Monarch	Endangered	Special Concern	Endangered	S2?B,S3M	157	9.7 ± 0.39	NS
I	<i>Alasmidonta varicosa</i>	Brook Floater	Special Concern	Special Concern	Threatened	S3	9	21.6 ± 0.1	NS
I	<i>Bombus terricola</i>	Yellow-banded Bumble Bee	Special Concern	Special Concern	Vulnerable	S3	82	19.6 ± 0.2	NS
I	<i>Coccinella transversoguttata richardsoni</i>	Transverse Lady Beetle	Special Concern		Endangered	SH	1	99.9 ± 2.5	NS
I	<i>Euphyes bimacula</i>	Two-spotted Skipper				S1S2	2	20.9 ± 0.1	NS
I	<i>Haematopota rara</i>	Shy Cleg				S1S3	1	86.1 ± 0.05	NS
I	<i>Tharsalea dorcas</i>	Dorcas Copper				S2	20	83.3 ± 0.01	NS
I	<i>Tharsalea dopassosi</i>	Maritime Copper				S2	1	97.6 ± 0.05	NS
I	<i>Satyrrium acadica</i>	Acadian Hairstreak				S2	4	99.8 ± 2.5	NS
I	<i>Neurocordulia michaeli</i>	Broad-tailed Shadowdragon				S2	26	26.5 ± 0.05	NS
I	<i>Margaritifera margaritifera</i>	Eastern Pearlshell				S2	79	19.7 ± 0.1	NS
I	<i>Pantala hymenaea</i>	Spot-Winged Glider				S2?B	1	35.4 ± 1.0	NS
I	<i>Nymphalis l-album j-album</i>	Compton Tortoiseshell				S2S3	2	83.9 ± 0.2	NS
I	<i>Aglaia milberti</i>	Milbert's Tortoiseshell				S2S3	1	89.9 ± 2.5	NS
I	<i>Lanthus vernalis</i>	Southern Pygmy Clubtail				S2S3	8	41.8 ± 0.05	NS
I	<i>Alasmidonta undulata</i>	Triangle Floater				S2S3	7	33.7 ± 0.55	NS
I	<i>Sphaeroderus nitidicollis</i>	Polished Snail-eating Beetle				S3	1	43.3 ± 0.2	NS
I	<i>Psephenus herricki</i>	Herrick's Water Penny Beetle				S3	1	62.7 ± 0.2	NS
I	<i>Platydacus fossator</i>	Digging Rove Beetle				S3	2	19.6 ± 0.2	NS
I	<i>Chrysocoma auratus</i>	Dogbane Leaf Beetle				S3	1	19.6 ± 0.2	NS
I	<i>Naemia seriata</i>	Seaside Lady Beetle				S3	3	12.4 ± 0.2	NS
I	<i>Tachyerges ephippiatus</i>	Caparison Weevil				S3	1	19.6 ± 0.2	NS
I	<i>Chilocorus stigma</i>	Twice-stabbed Lady Beetle				S3	1	72.6 ± 0.2	NS
I	<i>Ipithimimus opacus</i>	Cloudy Darkling Beetle				S3	1	86.4 ± 0.01	NS
I	<i>Monochamus marmorator</i>	Balsam Fir Sawyer				S3	2	19.6 ± 0.2	NS
I	<i>Satyrrium calanus falacer</i>	Falacer Hairstreak				S3	1	89.5 ± 2.5	NS
I	<i>Callophrys lanoraieensis</i>	Bog Elfin				S3	2	68.0 ± 0.2	NS
I	<i>Strymon melinus</i>	Gray Hairstreak				S3	2	72.0 ± 0.1	NS
I	<i>Phanogomphus descriptus</i>	Harpoon Clubtail				S3	16	69.5 ± 0.05	NS
I	<i>Ophiogomphus aspersus</i>	Brook Snaketail				S3	5	69.5 ± 0.05	NS
I	<i>Ophiogomphus mainensis</i>	Maine Snaketail				S3	14	53.5 ± 0.05	NS
I	<i>Ophiogomphus rupinsulensis</i>	Rusty Snaketail				S3	36	26.5 ± 0.05	NS
I	<i>Enallagma vernale</i>	Vernal Bluet				S3	4	64.6 ± 0.05	NS
I	<i>Polygonia interrogationis</i>	Question Mark				S3B	21	18.2 ± 0.1	NS
I	<i>Cecropterus pylades</i>	Northern Cloudywing				S3S4	21	35.8 ± 0.01	NS
I	<i>Amblyscirtes hegon</i>	Pepper and Salt Skipper				S3S4	8	24.0 ± 0.68	NS
I	<i>Cupido comyntas</i>	Eastern Tailed Blue				S3S4	1	70.8 ± 0.1	NS
I	<i>Argynnis aphrodite winni</i>	Aphrodite Fritillary				S3S4	4	44.6 ± 100.0	NS
I	<i>Polygonia faunus</i>	Green Comma				S3S4	7	35.9 ± 0.05	NS
I	<i>Oeneis jutta ascerta</i>	Jutta Arctic				S3S4	4	39.3 ± 0.01	NS
I	<i>Aeshna clepsydra</i>	Mottled Darner				S3S4	3	45.4 ± 1.0	NS
I	<i>Aeshna constricta</i>	Lance-Tipped Darner				S3S4	2	99.2 ± 1.0	NS
I	<i>Boyeria grafiana</i>	Ocellated Darner				S3S4	9	26.5 ± 0.05	NS
I	<i>Gomphaeschna furcillata</i>	Harlequin Darner				S3S4	4	57.2 ± 0.05	NS
I	<i>Erythrodiplax berenice</i>	Seaside Dragonlet				S3S4	8	77.6 ± 0.2	NS
I	<i>Nannothemis bella</i>	Elfin Skimmer				S3S4	7	57.2 ± 0.05	NS
I	<i>Sympetrum danae</i>	Black Meadowhawk				S3S4	7	7.9 ± 1.0	NS
I	<i>Amphiagrion saucium</i>	Eastern Red Damsel				S3S4	4	85.9 ± 0.05	NS
I	<i>Icaricia saepiolus amica</i>	Greenish Blue				SH	1	89.6 ± 2.5	NS
I	<i>Polygonia gracilis</i>	Hoary Comma				SH	1	89.9 ± 2.5	NS
N	<i>Erioderma mollissimum</i>	Graceful Felt Lichen	Endangered	Endangered	Endangered	S1	21	44.4 ± 0.01	NS
N	<i>Erioderma pedicellatum</i> (Atlantic pop.)	Boreal Felt Lichen - Atlantic pop.	Endangered	Endangered	Endangered	S1	518	4.2 ± 0.1	NS
N	<i>Peltigera hydrothyria</i>	Eastern Waterfan	Threatened	Threatened	Threatened	S1	9	38.3 ± 0.01	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
N	<i>Pannaria lurida</i>	Wrinkled Shingle Lichen	Threatened	Threatened	Threatened	S2S3	104	77.2 ± 0.01	NS
N	<i>Anzia colpodes</i>	Black-foam Lichen	Threatened	Threatened	Threatened	S3	14	43.5 ± 0.5	NS
N	<i>Fuscopannaria leucosticta</i>	White-rimmed Shingle Lichen	Threatened			S3	5	66.9 ± 0.01	NS
N	<i>Heterodermia squamulosa</i>	Scaly Fringe Lichen	Threatened			S3	6	45.5 ± 0.01	NS
N	<i>Pectenaria plumbea</i>	Blue Felt Lichen	Special Concern	Special Concern	Vulnerable	S3	901	0.3 ± 0.2	NS
N	<i>Sclerophora peronella</i> (Atlantic pop.)	Frosted Glass-whiskers (Atlantic population)	Special Concern	Special Concern		S3S4	24	10.8 ± 0.01	NS
N	<i>Pseudevernia cladonia</i>	Ghost Antler Lichen	Not At Risk			S2S3	8	10.5 ± 0.05	NS
N	<i>Fissidens exilis</i>	Pygmy Pocket Moss	Not At Risk			S3	6	42.2 ± 0.01	NS
N	<i>Chaenotheca servitii</i>	Flexuous Golden Stubble	Data Deficient			S1	1	76.5 ± 1.0	NS
N	<i>Cinclidium stygium</i>	Sooty Cupola Moss				S1	2	88.5 ± 0.01	NS
N	<i>Cyrtio-hypnum minutulum</i>	Tiny Cedar Moss				S1	1	76.4 ± 0.01	NS
N	<i>Cladonia brevis</i>	Short Peg Lichen				S1	1	86.3 ± 0.0	NS
N	<i>Lichina confinis</i>	Marine Seaweed Lichen				S1	2	88.4 ± 2.0	NS
N	<i>Polychidium muscicola</i>	Eyed Mossthorns Woollybear Lichen				S1	2	44.6 ± 0.05	NS
N	<i>Sticta limbata</i>	Powdered Moon Lichen				S1	2	69.1 ± 2.0	NS
N	<i>Hypogymnia hultenii</i>	Powdered Honeycomb Lichen				S1	17	8.4 ± 0.5	NS
N	<i>Jubula pennsylvanica</i>	a liverwort				S1?	3	32.8 ± 0.2	NS
N	<i>Oligotrichum hercynicum</i>	Hercynian Hair Moss				S1?	1	98.8 ± 0.01	NS
N	<i>Lathagrium undulatum</i> var. <i>granulosum</i>	Granular Jelly Flakes Lichen				S1?	1	94.6 ± 1.0	NS
N	<i>Scytinium intermedium</i>	Forty-five Jellyskin Lichen				S1?	1	59.2 ± 4.0	NS
N	<i>Peltigera malacea</i>	Veinless Pelt Lichen				S1?	1	74.4 ± 0.01	NS
N	<i>Hamatocaulis vernicosus</i>	a Moss				S1S2	1	91.7 ± 0.01	NS
N	<i>Cladonia labradorica</i>	Labrador Lichen				S1S2	1	11.0 ± 0.05	NS
N	<i>Peltigera ponjensis</i>	Pale-bellied Pelt Lichen				S1S2	1	93.8 ± 0.5	NS
N	<i>Parmotrema reticulatum</i>	Netted Ruffle Lichen				S1S2	1	19.7 ± 0.5	NS
N	<i>Solorina spongiosa</i>	Fringed Chocolate Chip Lichen				S1S2	11	55.0 ± 0.2	NS
N	<i>Parmeliella parvula</i>	Poor-man's Shingles Lichen				S1S2	24	9.1 ± 0.1	NS
N	<i>Barbilophozia lycopodioides</i>	Greater Pawwort				S1S3	1	99.6 ± 0.01	NS
N	<i>Peltigera neckeri</i>	Black-saddle Pelt Lichen				S1S3	4	24.6 ± 0.01	NS
N	<i>Anacamptodon splachnoides</i>	a Moss				S2	1	45.2 ± 0.2	NS
N	<i>Scorpidium scorpioides</i>	Hooked Scorpion Moss				S2	2	84.1 ± 0.01	NS
N	<i>Sphagnum platyphyllum</i>	Flat-leaved Peat Moss				S2	4	82.6 ± 0.01	NS
N	<i>Sphagnum subnitens</i>	Lustrous Peat Moss				S2	2	95.0 ± 0.01	NS
N	<i>Scorpidium cossonii</i>	Cosson's Hook Moss				S2	5	82.9 ± 0.01	NS
N	<i>Nephroma resupinatum</i>	a lichen				S2	2	33.5 ± 0.5	NS
N	<i>Riccardia multifida</i>	Delicate Germanderwort				S2?	2	19.6 ± 0.2	NS
N	<i>Anomodon viticulosus</i>	a Moss				S2?	2	99.9 ± 1.0	NS
N	<i>Atrichum angustatum</i>	Lesser Smoothcap Moss				S2?	1	54.9 ± 3.0	NS
N	<i>Drepanocladus polygamus</i>	Polygamous Hook Moss				S2?	3	52.2 ± 0.01	NS
N	<i>Pseudocampyllum radicale</i>	Long-stalked Fine Wet Moss				S2?	1	84.1 ± 0.01	NS
N	<i>Platydictya jungermannioides</i>	False Willow Moss				S2?	5	59.2 ± 0.01	NS
N	<i>Tortella fragilis</i>	Fragile Twisted Moss				S2?	1	99.4 ± 0.01	NS
N	<i>Scorpidium revolvens</i>	Limprichtia Moss				S2S3	5	82.2 ± 0.01	NS
N	<i>Moelleropsis nebulosa</i>	Blue-gray Moss Shingle Lichen				S2S3	43	4.3 ± 0.01	NS
N	<i>Moelleropsis nebulosa</i> ssp. <i>frullaniae</i>	Blue-gray Moss Shingle Lichen				S2S3	1	48.9 ± 0.5	NS
N	<i>Ramalina thrausta</i>	Angelhair Ramalina Lichen				S2S3	9	10.3 ± 1.5	NS
N	<i>Collema leptaleum</i>	Crumpled Bat's Wing Lichen				S2S3	79	55.2 ± 0.2	NS
N	<i>Usnea hirta</i>	Bristly Beard Lichen				S2S3	1	98.0 ± 0.2	NS
N	<i>Usnea rubicunda</i>	Red Beard Lichen				S2S3	3	3.5 ± 0.01	NS
N	<i>Ahtiana aurescens</i>	Eastern Candlewax Lichen				S2S3	6	67.5 ± 0.81	NS
N	<i>Cetraria muricata</i>	Spiny Heath Lichen				S2S3	2	6.1 ± 1.7	NS
N	<i>Cladonia incrasata</i>	Powder-foot British Soldiers Lichen				S2S3	1	49.9 ± 0.05	NS

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N	<i>Scytinium tenuissimum</i>	Birdnest Jellyskin Lichen				S2S3	14	5.1 ± 0.01	NS
N	<i>Parmelia fertilis</i>	Fertile Shield Lichen				S2S3	10	48.9 ± 0.5	NS
N	<i>Parmeliopsis ambigua</i>	Green Starburst Lichen				S2S3	4	14.6 ± 0.5	NS
N	<i>Usnea mutabilis</i>	Bloody Beard Lichen				S2S3	1	83.4 ± 0.5	NS
N	<i>Fuscopannaria soorediata</i>	a Lichen				S2S3	14	0.9 ± 0.2	NS
N	<i>Stereocaulon condensatum</i>	Granular Soil Foam Lichen				S2S3	9	45.6 ± 0.2	NS
N	<i>Cladonia coccifera</i>	Eastern Boreal Pixie-cup Lichen				S2S3	3	22.8 ± 0.01	NS
N	<i>Fissidens taxifolius</i>	Yew-leaved Pocket Moss				S3	4	99.9 ± 0.01	NS
N	<i>Anomodon tristis</i>	a Moss				S3	1	54.9 ± 0.01	NS
N	<i>Sphagnum contortum</i>	Twisted Peat Moss				S3	7	82.6 ± 0.01	NS
N	<i>Tetraplodon angustatus</i>	Toothed-leaved Nitrogen Moss				S3	4	41.7 ± 0.01	NS
N	<i>Tetraplodon mnioides</i>	Entire-leaved Nitrogen Moss				S3	1	52.3 ± 0.01	NS
N	<i>Rostania occulta</i>	Crusted Tarpaper Lichen				S3	3	32.3 ± 0.5	NS
N	<i>Collema nigrescens</i>	Blistered Tarpaper Lichen				S3	4	58.9 ± 0.01	NS
N	<i>Solorina saccata</i>	Woodland Owl Lichen				S3	7	54.0 ± 0.05	NS
N	<i>Fuscopannaria ahlneri</i>	Roughened Shingle Lichen				S3	104	4.6 ± 0.01	NS
N	<i>Scytinium lichenoides</i>	Tattered Jellyskin Lichen				S3	16	50.4 ± 0.2	NS
N	<i>Leptogium milligranum</i>	Stretched Jellyskin Lichen				S3	1	73.8 ± 0.01	NS
N	<i>Nephroma bellum</i>	Naked Kidney Lichen				S3	6	55.2 ± 0.5	NS
N	<i>Placynthium nigrum</i>	Common Ink Lichen				S3	1	60.1 ± 10.0	NS
N	<i>Platismatia norvegica</i>	Oldgrowth Rag Lichen				S3	17	14.4 ± 0.01	NS
N	<i>Punctelia appalachensis</i>	Appalachian Speckleback Lichen				S3	1	79.3 ± 0.01	NS
N	<i>Ephebe lanata</i>	Waterside Rockshag Lichen				S3	2	38.0 ± 0.01	NS
N	<i>Phaeophyscia pusilloides</i>	Pompom-tipped Shadow Lichen				S3	4	59.9 ± 0.2	NS
N	<i>Peltigera collina</i>	Tree Pelt Lichen				S3	140	1.9 ± 0.01	NS
N	<i>Sphagnum lindbergii</i>	Lindberg's Peat Moss				S3?	5	37.1 ± 0.01	NS
N	<i>Sphagnum riparium</i>	Streamside Peat Moss				S3?	2	90.1 ± 0.01	NS
N	<i>Cladonia stygia</i>	Black-footed Reindeer Lichen				S3?	6	44.3 ± 0.05	NS
N	<i>Dicranum leioneuron</i>	a Dicranum Moss				S3S4	1	57.9 ± 0.01	NS
N	<i>Encalypta ciliata</i>	Fringed Extinguisher Moss				S3S4	1	30.4 ± 2.5	NS
N	<i>Encalypta procera</i>	Slender Extinguisher Moss				S3S4	11	56.3 ± 0.01	NS
N	<i>Splachnum ampullaceum</i>	Cruet Dung Moss				S3S4	2	65.8 ± 0.01	NS
N	<i>Schistidium agassizii</i>	Elf Bloom Moss				S3S4	1	26.6 ± 3.0	NS
N	<i>Enchylium tenax</i>	Soil Tarpaper Lichen				S3S4	5	56.3 ± 0.01	NS
N	<i>Sticta fuliginosa</i>	Peppered Moon Lichen				S3S4	31	10.8 ± 0.01	NS
N	<i>Arctoparmelia incurva</i>	Finger Ring Lichen				S3S4	15	23.4 ± 0.01	NS
N	<i>Scytinium teretiusculum</i>	Curly Jellyskin Lichen				S3S4	4	59.2 ± 0.01	NS
N	<i>Leptogium acadense</i>	Acadian Jellyskin Lichen				S3S4	34	11.6 ± 0.01	NS
N	<i>Scytinium subtile</i>	Appressed Jellyskin Lichen				S3S4	12	56.3 ± 0.01	NS
N	<i>Cladonia floerkeana</i>	Gritty British Soldiers Lichen				S3S4	1	86.7 ± 0.01	NS
N	<i>Vahlia leucophaea</i>	Shelter Shingle Lichen				S3S4	6	60.3 ± 0.2	NS
N	<i>Heterodermia speciosa</i>	Powdered Fringe Lichen				S3S4	24	28.5 ± 0.2	NS
N	<i>Leptogium corticola</i>	Blistered Jellyskin Lichen				S3S4	36	45.1 ± 0.01	NS
N	<i>Melanohalea olivacea</i>	Spotted Camouflage Lichen				S3S4	1	74.5 ± 0.2	NS
N	<i>Parmeliopsis hyperopta</i>	Gray Starburst Lichen				S3S4	1	20.7 ± 0.5	NS
N	<i>Parmotrema perlatum</i>	Powdered Ruffle Lichen				S3S4	1	45.5 ± 0.01	NS
N	<i>Peltigera hymenina</i>	Cloudy Pelt Lichen				S3S4	3	67.3 ± 0.5	NS
N	<i>Sphaerophorus fragilis</i>	Fragile Coral Lichen				S3S4	1	53.3 ± 0.2	NS
N	<i>Sclerophora peronella</i>	Frosted Glass-whiskers Lichen				S3S4	3	43.8 ± 0.01	NS
N	<i>Coccocarpia palmicola</i>	Salted Shell Lichen				S3S4	777	3.6 ± 0.01	NS
N	<i>Physcia tenella</i>	Fringed Rosette Lichen				S3S4	1	45.2 ± 3.5	NS
N	<i>Anaptychia palmulata</i>	Shaggy Fringed Lichen				S3S4	109	10.5 ± 0.05	NS
N	<i>Evernia prunastri</i>	Valley Oakmoss Lichen				S3S4	8	41.8 ± 0.5	NS
N	<i>Heterodermia neglecta</i>	Fringe Lichen				S3S4	74	14.2 ± 0.01	NS
P	<i>Fraxinus nigra</i>	Black Ash	Threatened		Threatened	S1S2	320	35.5 ± 0.0	NS
P	<i>Juncus caesariensis</i>	New Jersey Rush	Special Concern	Special Concern	Vulnerable	S3	74	84.1 ± 0.1	NS
P	<i>Floerkea proserpinacoides</i>	False Mermaidweed	Not At Risk			S2S3	9	44.1 ± 1.0	NS
P	<i>Arnica lonchophylla</i>	Northern Arnica				S1	1	69.2 ± 7.07	NS

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P	<i>Betula minor</i>	Dwarf White Birch				S1	1	16.6 ± 0.01	NS
P	<i>Cardamine dentata</i>	Toothed Bittercress				S1	1	81.4 ± 0.5	NS
P	<i>Cochlearia tridactylites</i>	Limestone Scurvy-grass				S1	12	29.1 ± 0.1	NS
P	<i>Stellaria crassifolia</i>	Fleshy Stitchwort				S1	1	89.3 ± 2.0	NS
P	<i>Hudsonia tomentosa</i>	Woolly Beach-heath				S1	7	51.7 ± 1.7	NS
P	<i>Bistorta vivipara</i>	Alpine Bistort				S1	1	78.0 ± 1.0	NS
P	<i>Montia fontana</i>	Water Blinks				S1	2	51.6 ± 3.0	NS
P	<i>Agalinis tenuifolia</i>	Slender Agalinis				S1	1	94.4 ± 0.01	NS
P	<i>Scrophularia lanceolata</i>	Lance-leaved Figwort				S1	1	28.3 ± 1.5	NS
P	<i>Carex alopecoidea</i>	Foxtail Sedge				S1	4	50.1 ± 0.2	NS
P	<i>Carex granularis</i>	Limestone Meadow Sedge				S1	3	84.3 ± 0.01	NS
P	<i>Carex plantaginea</i>	Plantain-Leaved Sedge				S1	2	96.2 ± 0.2	NS
P	<i>Carex tenuiflora</i>	Sparse-Flowered Sedge				S1	2	83.9 ± 0.5	NS
P	<i>Carex tinctoria</i>	Tinged Sedge				S1	2	50.1 ± 0.2	NS
P	<i>Carex viridula</i> var. <i>saxilittoralis</i>	Greenish Sedge				S1	4	90.1 ± 0.3	NS
P	<i>Carex viridula</i> ssp. <i>brachyrrhyncha</i>	Greenish Sedge				S1	1	99.3 ± 0.01	NS
P	<i>Carex viridula</i> var. <i>elatio</i>	Greenish Sedge				S1	24	81.3 ± 0.01	NS
P	<i>Carex grisea</i>	Inflated Narrow-leaved Sedge				S1	6	49.5 ± 0.01	NS
P	<i>Cyperus lupulinus</i> ssp. <i>macilentus</i>	Hop Flatsedge				S1	18	51.1 ± 0.01	NS
P	<i>Eleocharis erythropoda</i>	Red-stemmed Spikerush				S1	1	93.1 ± 0.01	NS
P	<i>Scirpus atrovirens</i>	Dark-green Bulrush				S1	2	99.3 ± 0.01	NS
P	<i>Iris prismatica</i>	Slender Blue Flag				S1	2	32.8 ± 7.07	NS
P	<i>Malaxis monophyllos</i> var. <i>brachypoda</i>	North American White Adder's-mouth				S1	1	40.2 ± 7.07	NS
P	<i>Calamagrostis stricta</i> ssp. <i>inexpansa</i>	Slim-stemmed Reed Grass				S1	3	73.9 ± 0.01	NS
P	<i>Elymus hystrix</i>	Spreading Wild Rye				S1	1	78.2 ± 1.6	NS
P	<i>Potamogeton nodosus</i>	Long-leaved Pondweed				S1	1	35.4 ± 5.0	NS
P	<i>Sparganium angustifolium</i>	Branching Bur-Reed				S1	1	52.6 ± 1.0	NS
P	<i>Equisetum palustre</i>	Marsh Horsetail				S1	8	95.1 ± 0.01	NS
P	<i>Botrychium ascendens</i>	Upswept Moonwort				S1	1	99.4 ± 0.2	NS
P	<i>Solidago hispida</i>	Hairy Goldenrod				S1?	1	71.4 ± 7.07	NS
P	<i>Allium schoenoprasum</i>	Wild Chives				S1?	1	92.6 ± 0.2	NS
P	<i>Allium schoenoprasum</i> var. <i>sibiricum</i>	Wild Chives				S1?	1	62.5 ± 7.07	NS
P	<i>Sanicula odorata</i>	Clustered Sanicle				S1S2	3	75.2 ± 0.5	NS
P	<i>Ageratina altissima</i>	White Snakeroot				S1S2	2	53.8 ± 7.07	NS
P	<i>Cornus suecica</i>	Swedish Bunchberry				S1S2	2	54.9 ± 6.0	NS
P	<i>Anemone virginiana</i> var. <i>alba</i>	Virginia Anemone				S1S2	6	96.2 ± 0.1	NS
P	<i>Parnassia parviflora</i>	Small-flowered Grass-of-Parnassus				S1S2	11	74.8 ± 1.5	NS
P	<i>Carex haydenii</i>	Hayden's Sedge				S1S2	3	61.9 ± 5.0	NS
P	<i>Platanthera huronensis</i>	Fragrant Green Orchid				S1S2	5	57.1 ± 10.0	NS
P	<i>Selaginella selaginoides</i>	Low Spikemoss				S1S2	2	82.2 ± 0.8	NS
P	<i>Carex vacillans</i>	Estuarine Sedge				S1S3	4	50.1 ± 0.5	NS
P	<i>Zizia aurea</i>	Golden Alexanders				S2	20	32.1 ± 0.5	NS
P	<i>Rudbeckia laciniata</i>	Cut-Leaved Coneflower				S2	2	36.5 ± 0.1	NS
P	<i>Desmodium canadense</i>	Canada Tick-trefoil				S2	10	87.7 ± 0.01	NS
P	<i>Anemonastrum canadense</i>	Canada Anemone				S2	2	54.3 ± 3.0	NS
P	<i>Comandra umbellata</i>	Bastard's Toadflax				S2	41	50.7 ± 0.2	NS
P	<i>Carex gynocrates</i>	Northern Bog Sedge				S2	11	84.8 ± 0.01	NS
P	<i>Carex pellita</i>	Woolly Sedge				S2	7	87.8 ± 0.01	NS
P	<i>Carex livida</i>	Livid Sedge				S2	23	47.9 ± 0.01	NS
P	<i>Juncus greenii</i>	Greene's Rush				S2	1	51.7 ± 1.5	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	<i>Juncus alpinoarticulatus</i> ssp. <i>americanus</i>	Northern Green Rush				S2	8	52.3 ± 5.0	NS
P	<i>Luzula spicata</i>	Spiked Woodrush				S2	1	49.8 ± 0.01	NS
P	<i>Lilium canadense</i>	Canada Lily				S2	60	26.5 ± 1.2	NS
P	<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	Yellow Lady's-slipper				S2	29	50.5 ± 0.01	NS
P	<i>Cypripedium parviflorum</i> var. <i>makasin</i>	Small Yellow Lady's-Slipper				S2	2	38.5 ± 0.01	NS
P	<i>Cypripedium reginae</i>	Showy Lady's-Slipper				S2	175	53.7 ± 0.01	NS
P	<i>Platanthera flava</i> var. <i>herbiola</i>	Pale Green Orchid				S2	1	30.2 ± 1.5	NS
P	<i>Platanthera macrophylla</i>	Large Round-Leaved Orchid				S2	6	38.5 ± 1.67	NS
P	<i>Bromus latiglumis</i>	Broad-Glumed Brome				S2	15	61.8 ± 0.01	NS
P	<i>Cinna arundinacea</i>	Sweet Wood Reed Grass				S2	24	61.8 ± 0.01	NS
P	<i>Elymus wiegandii</i>	Wiegand's Wild Rye				S2	6	64.8 ± 0.01	NS
P	<i>Sparganium hyperboreum</i>	Northern Burreed				S2	3	4.1 ± 0.1	NS
P	<i>Cryptogramma stelleri</i>	Steller's Rockbrake				S2	17	97.6 ± 0.01	NS
P	<i>Cuscuta cephalanthi</i>	Buttonbush Dodder				S2?	8	49.8 ± 0.01	NS
P	<i>Crataegus submollis</i>	Quebec Hawthorn				S2?	2	64.4 ± 7.07	NS
P	<i>Thuja occidentalis</i>	Eastern White Cedar			Vulnerable	S2S3	3	48.2 ± 0.2	NS
P	<i>Osmorhiza longistylis</i>	Smooth Sweet Cicely				S2S3	16	40.9 ± 0.01	NS
P	<i>Bidens hyperborea</i>	Estuary Beggarticks				S2S3	1	54.6 ± 1.0	NS
P	<i>Erigeron philadelphicus</i>	Philadelphia Fleabane				S2S3	6	58.5 ± 7.07	NS
P	<i>Impatiens pallida</i>	Pale Jewelweed				S2S3	7	28.8 ± 7.07	NS
P	<i>Caulophyllum thalictroides</i>	Blue Cohosh				S2S3	42	40.9 ± 0.01	NS
P	<i>Draba arabisans</i>	Rock Whitlow-Grass				S2S3	3	98.4 ± 1.6	NS
P	<i>Stellaria humifusa</i>	Saltmarsh Starwort				S2S3	4	35.2 ± 0.1	NS
P	<i>Oxybasis rubra</i>	Red Goosefoot				S2S3	5	63.1 ± 7.07	NS
P	<i>Hypericum x dissimulatum</i>	Disguised St. John's-wort				S2S3	1	20.9 ± 1.0	NS
P	<i>Empetrum atropurpureum</i>	Purple Crowberry				S2S3	1	53.2 ± 3.0	NS
P	<i>Euphorbia polygonifolia</i>	Seaside Spurge				S2S3	13	51.2 ± 0.01	NS
P	<i>Myriophyllum farwellii</i>	Farwell's Water Milfoil				S2S3	4	23.2 ± 0.25	NS
P	<i>Hedeoma pulegioides</i>	American False Pennyroyal				S2S3	2	73.6 ± 5.0	NS
P	<i>Polygonum aviculare</i> ssp. <i>buxiforme</i>	Box Knotweed				S2S3	1	90.2 ± 0.2	NS
P	<i>Polygonum oxyspermum</i> ssp. <i>raii</i>	Ray's Knotweed				S2S3	4	22.8 ± 1.0	NS
P	<i>Rumex triangulivalvis</i>	Triangular-valve Dock				S2S3	4	61.5 ± 6.0	NS
P	<i>Anemone quinquefolia</i>	Wood Anemone				S2S3	6	26.7 ± 0.4	NS
P	<i>Caltha palustris</i>	Yellow Marsh Marigold				S2S3	3	53.9 ± 0.01	NS
P	<i>Amelanchier fernaldii</i>	Fernald's Serviceberry				S2S3	1	22.1 ± 1.0	NS
P	<i>Potentilla canadensis</i>	Canada Cinquefoil				S2S3	1	52.9 ± 2.6	NS
P	<i>Salix pellita</i>	Satiny Willow				S2S3	1	47.8 ± 1.6	NS
P	<i>Tiarella stolonifera</i>	Stoloniferous Foamflower				S2S3	2	54.9 ± 3.81	NS
P	<i>Agalinis purpurea</i> var. <i>parviflora</i>	Small-flowered Purple False Foxglove				S2S3	11	2.2 ± 0.2	NS
P	<i>Carex adusta</i>	Lesser Brown Sedge				S2S3	2	40.7 ± 5.0	NS
P	<i>Carex hystericina</i>	Porcupine Sedge				S2S3	29	50.5 ± 0.5	NS
P	<i>Eleocharis ovata</i>	Ovate Spikerush				S2S3	1	17.5 ± 0.01	NS
P	<i>Scirpus pedicellatus</i>	Stalked Bulrush				S2S3	3	62.3 ± 0.01	NS
P	<i>Spiranthes casei</i> var. <i>novaescotiae</i>	Case's Ladies'-Tresses				S2S3	3	27.1 ± 1.89	NS
P	<i>Spiranthes lucida</i>	Shining Ladies'-Tresses				S2S3	32	78.5 ± 1.65	NS
P	<i>Potamogeton friesii</i>	Fries' Pondweed				S2S3	5	65.8 ± 0.01	NS
P	<i>Cystopteris laurentiana</i>	Laurentian Bladder Fern				S2S3	5	97.3 ± 10.0	NS
P	<i>Woodsia glabella</i>	Smooth Cliff Fern				S2S3	2	97.3 ± 7.07	NS
P	<i>Botrychium lanceolatum</i> ssp. <i>angustisegmentum</i>	Narrow Triangle Moonwort				S2S3	5	79.4 ± 0.01	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	<i>Botrychium simplex</i>	Least Moonwort				S2S3	3	75.8 ± 1.0	NS
P	<i>Angelica atropurpurea</i>	Purple-stemmed Angelica				S3	11	61.0 ± 0.01	NS
P	<i>Senecio pseudoarnica</i>	Seabeach Ragwort				S3	29	12.4 ± 0.2	NS
P	<i>Symphotrichum boreale</i>	Boreal Aster				S3	59	81.2 ± 0.01	NS
P	<i>Symphotrichum ciliolatum</i>	Fringed Blue Aster				S3	3	22.9 ± 0.01	NS
P	<i>Betula michauxii</i>	Michaux's Dwarf Birch				S3	25	2.6 ± 0.01	NS
P	<i>Betula pumila</i>	Bog Birch				S3	1	83.5 ± 0.01	NS
P	<i>Cardamine parviflora</i>	Small-flowered Bittercress				S3	2	94.1 ± 0.01	NS
P	<i>Palustricodon aparinoides</i>	Marsh Bellflower				S3	10	34.6 ± 0.5	NS
P	<i>Lobelia kalmii</i>	Brook Lobelia				S3	73	77.8 ± 0.01	NS
P	<i>Sagina nodosa</i>	Knotted Pearlwort				S3	7	35.5 ± 1.5	NS
P	<i>Sagina nodosa ssp. borealis</i>	Knotted Pearlwort				S3	2	88.8 ± 0.01	NS
P	<i>Stellaria longifolia</i>	Long-leaved Starwort				S3	1	65.2 ± 0.01	NS
P	<i>Triosteum aurantiacum</i>	Orange-fruited Tinker's Weed				S3	163	40.8 ± 0.01	NS
P	<i>Crassula aquatica</i>	Water Pygmyweed				S3	2	76.6 ± 7.07	NS
P	<i>Halenia deflexa</i>	Spurred Gentian				S3	23	28.4 ± 1.0	NS
P	<i>Geranium bicknellii</i>	Bicknell's Crane's-bill				S3	1	48.2 ± 0.2	NS
P	<i>Myriophyllum verticillatum</i>	Whorled Water Milfoil				S3	1	81.4 ± 0.01	NS
P	<i>Epilobium densum</i>	Downy Willowherb				S3	7	37.1 ± 0.5	NS
P	<i>Polygala sanguinea</i>	Blood Milkwort				S3	12	7.4 ± 0.01	NS
P	<i>Persicaria arifolia</i>	Halberd-leaved Tearthumb				S3	8	21.4 ± 0.01	NS
P	<i>Plantago rugelii</i>	Rugel's Plantain				S3	2	94.4 ± 0.01	NS
P	<i>Samolus parviflorus</i>	Seaside Brookweed				S3	14	49.7 ± 0.01	NS
P	<i>Pyrola minor</i>	Lesser Pyrola				S3	1	97.9 ± 2.0	NS
P	<i>Anemone virginiana</i>	Virginia Anemone				S3	31	50.4 ± 0.01	NS
P	<i>Galium kamtschaticum</i>	Northern Wild Licorice				S3	4	92.7 ± 0.2	NS
P	<i>Galium labradoricum</i>	Labrador Bedstraw				S3	45	81.2 ± 0.01	NS
P	<i>Salix pedicellaris</i>	Bog Willow				S3	6	82.9 ± 0.01	NS
P	<i>Saxifraga paniculata ssp. laestadii</i>	Laestadius' Saxifrage				S3	1	93.8 ± 7.07	NS
P	<i>Lindernia dubia</i>	Yellow-seeded False Pimperel				S3	11	49.9 ± 0.01	NS
P	<i>Laportea canadensis</i>	Canada Wood Nettle				S3	17	40.7 ± 3.0	NS
P	<i>Pilea pumila</i>	Dwarf Clearweed				S3	1	74.3 ± 6.0	NS
P	<i>Viola nephrophylla</i>	Northern Bog Violet				S3	6	66.4 ± 0.01	NS
P	<i>Carex bebbii</i>	Bebb's Sedge				S3	9	44.8 ± 7.07	NS
P	<i>Carex castanea</i>	Chestnut Sedge				S3	15	81.5 ± 0.01	NS
P	<i>Carex cryptolepis</i>	Hidden-scaled Sedge				S3	7	46.3 ± 1.5	NS
P	<i>Carex eburnea</i>	Bristle-leaved Sedge				S3	23	54.8 ± 5.0	NS
P	<i>Carex hirtifolia</i>	Pubescent Sedge				S3	22	40.9 ± 0.01	NS
P	<i>Carex lupulina</i>	Hop Sedge				S3	13	49.5 ± 6.0	NS
P	<i>Carex rosea</i>	Rosy Sedge				S3	5	34.5 ± 4.0	NS
P	<i>Carex tenera</i>	Tender Sedge				S3	3	50.8 ± 1.0	NS
P	<i>Carex tribuloides</i>	Blunt Broom Sedge				S3	11	18.0 ± 0.01	NS
P	<i>Carex atratiformis</i>	Scabrous Black Sedge				S3	2	97.3 ± 7.07	NS
P	<i>Eleocharis flavescens var. olivacea</i>	Bright-green Spikerush				S3	3	44.9 ± 0.1	NS
P	<i>Eleocharis quinqueflora</i>	Few-flowered Spikerush				S3	14	85.4 ± 0.01	NS
P	<i>Eriophorum gracile</i>	Slender Cottongrass				S3	8	6.8 ± 1.0	NS
P	<i>Schoenoplectus americanus</i>	Olney's Bulrush				S3	1	49.8 ± 0.01	NS
P	<i>Juncus stygius ssp. americanus</i>	Moor Rush				S3	27	82.1 ± 1.0	NS
P	<i>Cypripedium parviflorum</i>	Yellow Lady's-slipper				S3	64	38.2 ± 0.01	NS
P	<i>Neottia bifolia</i>	Southern Twayblade				S3	47	11.1 ± 0.01	NS
P	<i>Platanthera grandiflora</i>	Large Purple Fringed Orchid				S3	80	19.4 ± 10.0	NS
P	<i>Platanthera hookeri</i>	Hooker's Orchid				S3	3	47.3 ± 0.1	NS
P	<i>Dichanthelium linearifolium</i>	Narrow-leaved Panic Grass				S3	1	90.4 ± 7.07	NS
P	<i>Poa glauca</i>	Glaucous Blue Grass				S3	8	97.6 ± 0.01	NS
P	<i>Stuckenia filiformis</i>	Thread-leaved Pondweed				S3	12	61.5 ± 0.01	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	<i>Potamogeton praelongus</i>	White-stemmed Pondweed				S3	11	28.8 ± 10.0	NS
P	<i>Potamogeton richardsonii</i>	Richardson's Pondweed				S3	6	33.2 ± 0.6	NS
P	<i>Potamogeton zosteriformis</i>	Flat-stemmed Pondweed				S3	1	96.5 ± 7.07	NS
P	<i>Asplenium viride</i>	Green Spleenwort				S3	21	62.7 ± 0.2	NS
P	<i>Dryopteris fragrans</i>	Fragrant Wood Fern				S3	1	43.5 ± 7.07	NS
P	<i>Polystichum lonchitis</i>	Northern Holly Fern				S3	5	79.4 ± 5.0	NS
P	<i>Sceptridium dissectum</i>	Dissected Moonwort				S3	3	48.9 ± 1.0	NS
P	<i>Polypodium appalachianum</i>	Appalachian Polypody				S3	4	23.2 ± 0.01	NS
P	<i>Persicaria amphibia</i> var. <i>emersa</i>	Long-root Smartweed				S3?	1	49.8 ± 0.01	NS
P	<i>Spiranthes ochroleuca</i>	Yellow Ladies'-tresses				S3?	49	2.9 ± 0.2	NS
P	<i>Diphasiastrum x sabinifolium</i>	Savin-leaved Ground-cedar				S3?	3	57.8 ± 5.0	NS
P	<i>Bidens vulgata</i>	Tall Beggarticks				S3S4	1	79.6 ± 0.01	NS
P	<i>Erigeron hyssopifolius</i>	Hyssop-leaved Fleabane				S3S4	19	50.4 ± 0.2	NS
P	<i>Hieracium paniculatum</i>	Panicked Hawkweed				S3S4	1	71.2 ± 0.2	NS
P	<i>Bidens beckii</i>	Water Beggarticks				S3S4	6	44.1 ± 0.5	NS
P	<i>Packera paupercula</i>	Balsam Groundsel				S3S4	66	50.4 ± 0.01	NS
P	<i>Atriplex glabriuscula</i> var. <i>franktonii</i>	Frankton's Saltbush				S3S4	1	46.7 ± 0.01	NS
P	<i>Shepherdia canadensis</i>	Soapberry				S3S4	7	94.8 ± 0.01	NS
P	<i>Vaccinium boreale</i>	Northern Blueberry				S3S4	7	22.1 ± 1.0	NS
P	<i>Vaccinium cespitosum</i>	Dwarf Bilberry				S3S4	48	26.3 ± 0.01	NS
P	<i>Vaccinium corymbosum</i>	Highbush Blueberry				S3S4	1	40.5 ± 0.2	NS
P	<i>Fagus grandifolia</i>	American Beech				S3S4	268	10.2 ± 0.2	NS
P	<i>Bartonia virginica</i>	Yellow Bartonia				S3S4	1	79.4 ± 0.1	NS
P	<i>Proserpinaca pectinata</i>	Comb-leaved Mermaidweed				S3S4	2	87.2 ± 1.0	NS
P	<i>Decodon verticillatus</i>	Swamp Loosestrife				S3S4	1	83.5 ± 7.07	NS
P	<i>Nuphar microphylla</i>	Small Yellow Pond-lily				S3S4	1	95.5 ± 2.7	NS
P	<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed				S3S4	16	49.6 ± 0.01	NS
P	<i>Fallopia scandens</i>	Climbing False Buckwheat				S3S4	29	28.6 ± 0.01	NS
P	<i>Rumex pallidus</i>	Seabeach Dock				S3S4	1	55.6 ± 0.01	NS
P	<i>Pyrola asarifolia</i>	Pink Pyrola				S3S4	5	52.6 ± 0.2	NS
P	<i>Endotropis alnifolia</i>	Alder-leaved Buckthorn				S3S4	372	52.0 ± 0.01	NS
P	<i>Amelanchier spicata</i>	Running Serviceberry				S3S4	5	15.2 ± 0.01	NS
P	<i>Fragaria vesca</i> ssp. <i>americana</i>	Woodland Strawberry				S3S4	18	56.3 ± 0.01	NS
P	<i>Fragaria vesca</i>	Woodland Strawberry				S3S4	1	54.4 ± 1.53	NS
P	<i>Galium aparine</i>	Common Bedstraw				S3S4	17	50.2 ± 0.01	NS
P	<i>Geocaulon lividum</i>	Northern Comandra				S3S4	81	1.2 ± 0.01	NS
P	<i>Limosella australis</i>	Southern Mudwort				S3S4	3	82.8 ± 5.0	NS
P	<i>Ulmus americana</i>	White Elm				S3S4	53	33.4 ± 0.01	NS
P	<i>Verbena hastata</i>	Blue Vervain				S3S4	52	40.8 ± 0.01	NS
P	<i>Viola selkirkii</i>	Great-Spurred Violet				S3S4	1	49.8 ± 1.0	NS
P	<i>Triglochin gaspensis</i>	Gaspé Arrowgrass				S3S4	23	54.5 ± 0.01	NS
P	<i>Juncus acuminatus</i>	Sharp-Fruit Rush				S3S4	3	51.8 ± 0.01	NS
P	<i>Juncus subcaudatus</i>	Woods-Rush				S3S4	5	13.8 ± 0.01	NS
P	<i>Luzula parviflora</i> ssp. <i>melanocarpa</i>	Black-fruited Woodrush				S3S4	3	45.5 ± 0.01	NS
P	<i>Goodyera repens</i>	Lesser Rattlesnake-plantain				S3S4	6	66.4 ± 0.01	NS
P	<i>Liparis loeselii</i>	Loesel's Twayblade				S3S4	9	40.9 ± 0.01	NS
P	<i>Platanthera obtusata</i>	Blunt-leaved Orchid				S3S4	6	12.6 ± 0.2	NS
P	<i>Platanthera orbiculata</i>	Small Round-leaved Orchid				S3S4	3	37.9 ± 0.01	NS
P	<i>Alopecurus aequalis</i>	Short-awned Foxtail				S3S4	5	56.0 ± 1.0	NS
P	<i>Dichanthelium clandestinum</i>	Deer-tongue Panic Grass				S3S4	97	26.6 ± 0.01	NS
P	<i>Panicum philadelphicum</i>	Philadelphia Panicgrass				S3S4	1	77.9 ± 0.01	NS
P	<i>Koeleria spicata</i>	Narrow False Oats				S3S4	1	87.8 ± 0.01	NS
P	<i>Asplenium trichomanes</i>	Maidenhair Spleenwort				S3S4	4	47.3 ± 0.2	NS
P	<i>Equisetum pratense</i>	Meadow Horsetail				S3S4	14	79.9 ± 0.01	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	<i>Diphasiastrum complanatum</i>	Northern Ground-cedar				S3S4	5	51.9 ± 0.2	NS
P	<i>Diphasiastrum sitchense</i>	Sitka Ground-cedar				S3S4	21	34.7 ± 1.0	NS
P	<i>Huperzia appressa</i>	Mountain Firmoss				S3S4	1	93.4 ± 1.0	NS
P	<i>Sceptridium multifidum</i>	Leathery Moonwort				S3S4	4	11.6 ± 0.2	NS
P	<i>Botrychium matricariifolium</i>	Daisy-leaved Moonwort				S3S4	3	65.8 ± 10.0	NS
P	<i>Viola canadensis</i>	Canada Violet				SH	1	98.1 ± 0.25	NS

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The recipient of these data shall acknowledge the AC CDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

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94	Chapman-Lam, C.J. 2022. Atlantic Canada Conservation Data Centre 2021 botanical fieldwork. Atlantic Canada Conservation Data Centre, 15099 recs.
92	Mazerolle, D.M. 2016. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
89	Blaney, C.S.; Mazerolle, D.M. 2010. Fieldwork 2010. Atlantic Canada Conservation Data Centre. Sackville NB, 15508 recs.
88	Blaney, C.S. 2016. Atlantic Canada Conservation Data Centre Fieldwork 2016. Atlantic Canada Conservation Data Centre, 6719 recs.
88	Toms, Brad & Pepper, Chris; Neily, Tom. 2022. Nova Scotia lichen database [as of 2022-04]. Mersey Tobeatic Research Institute.
87	Newell, R.E. 2005. E.C. Smith Digital Herbarium. E.C. Smith Herbarium, Irving Biodiversity Collection, Acadia University, Web site: http://luxor.acadiau.ca/library/Herbarium/project/ . 582 recs.
86	Neily, T.H. & Pepper, C.; Toms, B. 2020. Nova Scotia lichen database [as of 2020-03-18]. Mersey Tobeatic Research Institute.
86	Pronych, G. & Wilson, A. 1993. Atlas of Rare Vascular Plants in Nova Scotia. Nova Scotia Museum, Halifax NS, I:1-168, II:169-331. 1446 recs.
84	Cameron, R.P. 2011. Lichen observations, 2011. Nova Scotia Environment & Labour, 731 recs.
83	Belliveau, A.G., King, K., Vail, C. 2020. Bras d'Or Lakes Watershed Pectenaria plumbea records, 2020. Acadia University E.C. Smith Herbarium.
82	Toms, B. 2018. Bat Species data from www.batconservation.ca for Nova Scotia. Mersey Tobeatic Research Institute, 547 Records.
72	Belliveau, A.G. 2018. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
71	Blaney, C.S.; Korol, J.B.; Crowell, I. 2023. 2022 AC CDC Botany program field data. Atlantic Canada Conservation Data Centre, 5293 records.
71	Klymko, J. 2018. Maritimes Butterfly Atlas database. Atlantic Canada Conservation Data Centre.
70	Chapman-Lam, C.J. 2021. Atlantic Canada Conservation Data Centre 2020 botanical fieldwork. Atlantic Canada Conservation Data Centre, 17309 recs.
68	Bryson, I.C. 2020. Nova Scotia flora and lichen observations 2020. Nova Scotia Environment, 139 recs.
67	MacDonald, E.C. 2018. Piping Plover nest records from 2010-2017. Canadian Wildlife Service.
67	Manthorne, A. 2014. MaritimesSwiftwatch Project database 2013-2014. Bird Studies Canada, Sackville NB, 326 recs.
66	Staicer, Cindy. 2023. 2022 SAR Bird ARU occurrences. Dalhousie University, 379 records.
62	Blaney, C.S.; Mazerolle, D.M. 2012. Fieldwork 2012. Atlantic Canada Conservation Data Centre, 13,278 recs.
60	Klymko, J.J.D.; Robinson, S.L. 2012. 2012 field data. Atlantic Canada Conservation Data Centre, 447 recs.
56	Scott, F.W. 2002. Nova Scotia Herpetofauna Atlas Database. Acadia University, Wolfville NS, 8856 recs.
53	MacDonald, E.C. 2018. CWS Piping Plover Census, 2010-2017. Canadian Wildlife Service, 672 recs.
52	LaPaix, Rich. 2022. Rare species observations, 2018-2022. Nova Scotia Nature Trust.
48	Neily, T.H. & Pepper, C.; Toms, B. 2015. Nova Scotia lichen location database [as of 2015-02-15]. Mersey Tobeatic Research Institute, 1691 records.
47	Staicer, C. & Bliss, S.; Achenbach, L. 2017. Occurrences of tracked breeding birds in forested wetlands. , 303 records.
45	Belliveau, A.G. 2018. E.C. Smith Herbarium and Atlantic Canada Conservation Data Centre Fieldwork 2018. E.C. Smith Herbarium, 6226 recs.
44	Amirault, D.L. & McKnight, J. 2003. Piping Plover Database 1991-2003. Canadian Wildlife Service, Sackville, unpublished data. 7 recs.
44	Benjamin, L.K. 2012. NSDNR fieldwork & consultant reports 2008-2012. Nova Scotia Dept Natural Resources, 196 recs.
44	Blaney, C.S. 2020. Sean Blaney 2020 field data. Atlantic Canada Conservation Data Centre, 4407 records.
42	Pulsifer, M.D. 2002. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 369 recs.
41	Cameron, R.P. 2009. Erioderma pedicellatum database, 1979-2008. Dept Environment & Labour, 103 recs.
41	Pepper, C. 2013. 2013 rare bird and plant observations in Nova Scotia. , 181 records.
40	Siemens-Worsley, Allison. 2024. iNaturalist Wood Turtle observations for New Brunswick and Nova Scotia. NatureServe Canada.
39	Staicer, Cindy. 2022. 2021 Landbird Species at Risk observations. Dalhousie University.
39	Wilhelm, S.I. et al. 2019. Colonial Waterbird Database. Canadian Wildlife Service.
35	Benjamin, L.K. 2009. D. Anderson Odonata Records for Cape Breton, 1997-2004. Nova Scotia Dept Natural Resources, 1316 recs.
34	Canadian Wildlife Service, Dartmouth. 2010. Piping Plover censuses 2007-09, 304 recs.
33	Neily, T.H. 2017. Maritimes Lichen and Bryophyte records. Atlantic Canada Conservation Data Centre, 1015 recs.
32	Mazerolle, D.M. 2018. Atlantic Canada Conservation Data Centre botanical fieldwork 2018. Atlantic Canada Conservation Data Centre, 13515 recs.
32	Quigley, E.J. & Neily, P.D.. 2012. Botanical Discoveries in Inverness County, NS. Nova Scotia Dept Natural Resources. Pers. comm. to C.S. Blaney, Nov. 29, 141 rec.
31	Munro, Marian K. Tracked lichen specimens, Nova Scotia Provincial Museum of Natural History Herbarium. Atlantic Canada Conservation Data Centre. 2019.
30	Benjamin, L.K. (compiler). 2001. Significant Habitat & Species Database. Nova Scotia Dept of Natural Resources, 15 spp, 224 recs.
29	Churchill, J.L. 2021. Atlantic Canada Conservation Data Centre Fieldwork 2021. Atlantic Canada Conservation Data Centre.
29	Nova Scotia Nature Trust. 2013. Nova Scotia Nature Trust 2013 Species records. Nova Scotia Nature Trust, 95 recs.
28	Birds Canada. 2023. Maritimes Swiftwatch project data for 2023. Pers. comm., 270 recs.
28	iNaturalist. 2018. iNaturalist Data Export 2018. iNaturalist.org and iNaturalist.ca, Web site: 11700 recs.
26	Belliveau, A.G. 2021. E.C. Smith Herbarium and Atlantic Canada Conservation Data Centre Fieldwork 2021. E.C. Smith Herbarium.
26	Cameron-MacMillan, Maureen. 2020. Northern Goshawk Nests in Eastern Nova Scotia, as of November, 2020. Nova Scotia Department of Lands and Forestry.
26	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2013.
26	Porter, C.J.M. 2014. Field work data 2007-2014. Nova Scotia Nature Trust, 96 recs.
26	Staicer, C. 2021. Additional compiled Nova Scotia Species at Risk bird records, 2005-2020. Dalhousie University.
24	Crowell, Iain & Crowell, Iain. 2023. Field data - 2023. Atlantic Canada Conservation Data Centre.
24	Neily, T.H. 2013. Email communication to Sean Blaney regarding <i>Listera australis</i> observations made from 2007 to 2011 in Nova Scotia. , 50.
24	Unama'ki Institute of Natural Resources. 2023. Species at Risk records from the Maliamu'kik Msit to Ko'kmanaq project. Unama'ki Institute of Natural Resources, 49 records.
22	Benjamin, L.K. 2011. NSDNR fieldwork & consultant reports 1997, 2009-10. Nova Scotia Dept Natural Resources, 85 recs.
22	Zinck, M. & Roland, A.E. 1998. Roland's Flora of Nova Scotia. Nova Scotia Museum, 3rd ed., rev. M. Zinck; 2 Vol., 1297 pp.
21	Haughian, Sean. 2021. Update to lichen data from 2017-2021. Nova Scotia Museum.
20	Neily, T.H. 2010. Erioderma Pedicellatum records 2005-09. Mersey Tobiatic Research Institute, 67 recs.

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20	Neily, T.H. 2012. 2012 Erioderma pedicellatum records in Nova Scotia.
20	Roland, A.E. & Smith, E.C. 1969. The Flora of Nova Scotia, 1st Ed. Nova Scotia Museum, Halifax, 743pp.
18	Bell, G. 2018. Moose, bat and bird records from Goldboro LNG Project, NS, Environmental Assessment. Amec Foster Wheeler.
18	Neily, T.H. 2019. Tom Neily NS Bryophyte records (2009-2013). T.H. Neily, Atlantic Canada Conservation Data Centre, 1029 specimen records.
18	Toms, Brad. 2022. Non-Lichen Observations from Lichen SMP and NCC Property Searches. Mersey Tobeatic Research Institute.
17	Adams, J. & Herman, T.B. 1998. Thesis, Unpublished map of C. insculpta sightings. Acadia University, Wolfville NS, 88 recs.
17	Blaney, C.S.; Spicer, C.D. 2001. Fieldwork 2001. Atlantic Canada Conservation Data Centre. Sackville NB, 981 recs.
17	Chapman, C.J. 2018. Atlantic Canada Conservation Data Centre botanical fieldwork 2018. Atlantic Canada Conservation Data Centre, 11171 recs.
16	Brunelle, P.-M. (compiler). 2009. ADIP/MDDS Odonata Database: data to 2006 inclusive. Atlantic Dragonfly Inventory Program (ADIP), 24200 recs.
16	Chapman, C.N. (Cody). 2020. Nova Scotia Black Ash (Fraxinus nigra) field observations by Confederacy of Mainland Mi'kmaq. Forestry Program, Confederacy of Mainland Mi'kmaq.
16	Rock, J. 2020. Atlantic Canada Piping Plover field surveys: Nesting pairs by beach, 2018-2020. Environment and Climate Change Canada - Canadian Wildlife Service, 216 records.
15	Hagerman, Christianne. 2022. Wisqoq and Eastern White Cedar field work. E.C. Smith Herbarium, Acadia University.
15	iNaturalist. 2020. iNaturalist butterfly records selected for the Maritimes Butterfly Atlas. iNaturalist.
15	Richardson, Leif. 2018. Maritimes Bombus records from various sources. Richardson, Leif.
14	Birds Canada. 2022. Maritimes Swiftwatch project data for 2022. Pers. comm., 155 records.
14	Cameron, R.P. 2009. Cyanolichen database. Nova Scotia Environment & Labour, 1724 recs.
14	Churchill, J.L. 2019. Atlantic Canada Conservation Data Centre Fieldwork 2019. Atlantic Canada Conservation Data Centre.
14	Taylor, B.R., and Tam, J.C. 2012. Local distribution of the rare plant Triosteum aurantiacum in northeastern Nova Scotia, Canada. Rhodora, 114(960): 366-382.
13	Cameron, R.P. 2017. 2017 rare species field data. Nova Scotia Environment, 64 recs.
13	Hill, N.M. 1994. Status report on the Long's bulrush Scirpus longii in Canada. Committee on the Status of Endangered Wildlife in Canada, 7 recs.
12	Mazerolle, D.M. 2017. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
12	Williams, M. Cape Breton University Digital Herbarium. Cape Breton University Digital Herbarium. 2013.
11	Basquill, S.P., Porter, C. 2019. Bryophyte and lichen specimens submitted to the E.C. Smith Herbarium. NS Department of Lands and Forestry.
11	Blaney, C.S.; Mazerolle, D.M.; Belliveau, A.B. 2013. Atlantic Canada Conservation Data Centre Fieldwork 2013. Atlantic Canada Conservation Data Centre, 9000+ recs.
11	e-Butterfly. 2016. Export of Maritimes records and photos. Maxim Larrivee, Sambo Zhang (ed.) e-butterfly.org.
11	Korol, Burke. 2023. Field data - 2023. Atlantic Canada Conservation Data Centre.
11	Neily, T.H. Tom Neily NS Sphagnum records (2009-2014). T.H. Neily, Atlantic Canada Conservation Data Centre. 2019.
10	Anderson, Frances; Neily, Tom. 2014. A Reconnaissance Level Survey of Cryptogams in Selected Karst Topography in Cape Breton. Mersey Tobeatic Research Institute.
10	Archibald, D.R. 2003. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 213 recs.
10	Downes, C. 1998-2000. Breeding Bird Survey Data. Canadian Wildlife Service, Ottawa, 111 recs.
10	Knapton, R. & Power, T.; Williams, M. 2001. SAR Inventory: Fortress Louisbourg NP. Parks Canada, Atlantic, SARINV01-13. 157 recs.
10	Layberry, R.A. & Hall, P.W., LaFontaine, J.D. 1998. The Butterflies of Canada. University of Toronto Press. 280 pp+plates.
10	McNeil, J.A. 2020. Snapping Turtle and Eastern Painted Turtle records, 2020. Mersey Tobeatic Research Institute.
10	Robinson, S.L. 2015. 2014 field data.
10	White, S. 2018. Notable species sightings, 2016-2017. East Coast Aquatics.
9	Bryson, I. 2020. Nova Scotia and Newfoundland rare species observations, 2018-2020. Nova Scotia Environment.
9	Cameron, R.P. 2012. Rob Cameron 2012 vascular plant data. NS Department of Environment, 30 recs.
9	Gilhen, J. 1984. Amphibians & Reptiles of Nova Scotia, 1st Ed. Nova Scotia Museum, 164pp.
9	Newell, R.E. 2004. Assessment and update status report on the New Jersey Rush (Juncus caesariensis) in Canada. Committee on the Status of Endangered Wildlife in Canada, 15 recs.
9	Power, T.; Gilhen, J. 2018. Status, distribution, and nesting ecology of Snapping Turtle (Chelydra serpentina) on Cape Breton Island, Nova Scotia, Canada. The Canadian Field Naturalist, 132(1): 8-17.
9	Unama'ki Institute of Natural Resources. 2022. Wisqoq (Black Ash) records in Port Hood, NS. pers. comm., 9 records.
9	Whittam, R.M. 1999. Status Report on the Roseate Tern (update) in Canada. Committee on the Status of Endangered Wildlife in Canada, 36 recs.
8	Envirosphere Consultants Ltd., Strum. 2023. SAR records from three Environmental Assessments in Nova Scotia. Envirosphere Consultants Ltd., Strum, 48 records.
8	Oldham, M.J. 2000. Oldham database records from Maritime provinces. Oldham, M.J.; ONHIC, 487 recs.
7	Blaney, C.S. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre. Sackville NB, 1042 recs.
7	Chaput, G. 2002. Atlantic Salmon: Maritime Provinces Overview for 2001. Dept of Fisheries & Oceans, Atlantic Region, Science Stock Status Report D3-14. 39 recs.
7	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2014.
7	Neily, T.H. & Pepper, C.; Toms, B. 2020. Nova Scotia lichen database [as of 2020-05-25]. Mersey Tobeatic Research Institute, 668 recs.
7	Nickerson, Shayla. 2020. UINR Field Observations 2020-2021. Unama'ki Institute of Natural Resources.
7	Paquet, Julie. 2019. Atlantic Canada Shorebird Survey ACSS database for 2019. Environment Canada, Canadian Wildlife Service.
7	Robinson, S.L. 2011. 2011 ND dune survey field data. Atlantic Canada Conservation Data Centre, 2715 recs.
6	Anderson, Frances; Neily, Tom. 2010. A Reconnaissance Level Survey of Calciphilous Lichens in Selected Karst Topography in Nova Scotia with Notes on Incidental Bryophytes. Mersey Tobeatic Research Institute.
6	Benjamin, L.K. 2009. Boreal Felt Lichen, Mountain Avens, Orchid and other recent records. Nova Scotia Dept Natural Resources, 105 recs.
6	Blaney, C.S.; Mazerolle, D.M.; Oberndorfer, E. 2007. Fieldwork 2007. Atlantic Canada Conservation Data Centre. Sackville NB, 13770 recs.
6	Cameron, R.P. 2005. Erioderma pedicellatum unpublished data. NS Dept of Environment, 9 recs.
6	Cameron, R.P. 2014. 2013-14 rare species field data. Nova Scotia Department of Environment, 35 recs.
6	Gallop, John. 2021. Sheet Harbour rare lichen observations. McCallum Environmental.

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6	Holder, M.L.; Kingsley, A.L. 2000. Kinglsey and Holder observations from 2000 field work.
6	Lundholm, Jeremy. 2021. Bras d'Or Watershed Field Survey. Saint Mary's University.
6	NS DNR. 2017. Black Ash records from NS DNR Permanent Sample Plots (PSPs), 1965-2016. NS Dept of Natural Resources.
6	Phinney, Lori; Toms, Brad; et. al. 2016. Bank Swallows (<i>Riparia riparia</i>) in Nova Scotia: inventory and assessment of colonies. Merset Tobeiatc Research Institute, 25 recs.
6	Powell, B.C. 1967. Female sexual cycles of <i>Chrysemy spicta</i> & <i>Clemmys insculpta</i> in Nova Scotia. <i>Can. Field-Nat.</i> , 81:134-139. 26 recs.
5	anon. 2001. S.. H.. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 76 recs.
5	Cameron, R.P. 2018. <i>Degelia plumbea</i> records. Nova Scotia Environment.
5	Patrick, A.; Horne, D.; Noseworthy, J. et. al. 2017. Field data for Nova Scotia and New Brunswick, 2015 and 2017. Nature Conservancy of Canada.
5	Power, T. 2019. Cape Breton Wood Turtle records. NS Lands and Forestry.
5	Richardson, D., Anderson, F., Cameron, R., McMullin, T., Clayden, S. 2014. Field Work Report on Black Foam Lichen (<i>Anzia colpodes</i>). COSEWIC.
5	Whittam, R.M. 1997. Status Report on the Roseate Tern (<i>Sterna dougallii</i>) in Canada. Committee on the Status of Endangered Wildlife in Canada, 5 recs.
4	Belland, R.J. Maritimes moss records from various herbarium databases. 2014.
4	Blaney, C.S.; Mazerolle, D.M. 2008. Fieldwork 2008. Atlantic Canada Conservation Data Centre. Sackville NB, 13343 recs.
4	Cameron, R.P. 2013. 2013 rare species field data. Nova Scotia Department of Environment, 71 recs.
4	e-Butterfly. 2019. Export of Maritimes records and photos. McFarland, K. (ed.) e-butterfly.org.
4	Ferguson, D.C. 1954. The Lepidoptera of Nova Scotia. Part I, macrolepidoptera. Proceedings of the Nova Scotian Institute of Science, 23(3), 161-375.
4	McNeil, Jeffie. 2023. 2022 Turtle Records. Mersey Tobeatic Research Institute.
4	NatureServe Canada. 2019. iNaturalist Maritimes Butterfly Records. iNaturalist.org and iNaturalist.ca.
4	Neily, T.H. & Pepper, C.; Toms, B. 2018. Nova Scotia lichen database Update. Mersey Tobeatic Research Institute, 14 recs.
4	Nussey, Pat & NCC staff. 2019. AEI tracked species records, 2016-2019. Chapman, C.J. (ed.) Atlantic Canada Conservation Data Centre, 333.
4	O'Neil, S. 1998. Atlantic Salmon: Northumberland Strait Nova Scotia part of SFA 18. Dept of Fisheries & Oceans, Atlantic Region, Science. Stock Status Report D3-08. 9 recs.
4	Plissner, J.H. & Haig, S.M. 1997. 1996 International piping plover census. US Geological Survey, Corvallis OR, 231 pp.
4	Popma, T.M. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre. Sackville NB, 113 recs.
4	Robicheau, Charity. 2023. Field data from 2023. Atlantic Canada Conservation Data Centre, 14 records.
4	Robinson, S.L. 2014. 2013 Field Data. Atlantic Canada Conservation Data Centre.
4	Rousseau, J. 1938. Notes Floristiques sur l'est de la Nouvelle-Ecosse in Contributions de l'Institut Botanique de l'Universite de Montreal. Universite de Montreal, 32, 13-62. 11 recs.
4	Skomorowski, Joanna. 2024. 2022 Nova Scotia Nature Trust SAR occurrences. Nova Scotia Nature Trust, 58 records.
4	Westwood, A., Staicer, C. 2016. Nova Scotia landbird Species at Risk observations. Dalhousie University.
3	Basquill, S.P. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre, Sackville NB, 69 recs.
3	Basquill, S.P. 2012. 2012 rare vascular plant field data. Nova Scotia Department of Natural Resources, 37 recs.
3	Blaney, C.S.; Mazerolle, D.M. 2011. Fieldwork 2011. Atlantic Canada Conservation Data Centre. Sackville NB.
3	Cole Vail. 2023 Lichen Observations. C.Vail, 23 recs.
3	Feltham, Carter. 2022. Monarch (<i>Danaus plexippus</i>) and Milkweed MTRI records from the 2022 Field Season. Mersey Tobeatic Research Institute.
3	Manthorne, A. 2019. Incidental aerial insectivore observations. Birds Canada.
3	Neily, T.H. 2016. Email communication (May 6, 2016) to Sean Blaney regarding <i>Fissidens exilis</i> observations made in 2016 in Nova Scotia. Pers. Comm., 3 recs.
3	O'Neil, S. 1998. Atlantic Salmon: Eastern Shore Nova Scotia SFA 20. Dept of Fisheries & Oceans, Atlantic Region, Science. Stock Status Report D3-10. 4 recs.
3	Ogden, J. NS DNR Butterfly Collection Dataset. Nova Scotia Department of Natural Resources. 2014.
3	Ogden, K. Nova Scotia Museum butterfly specimen database. Nova Scotia Museum. 2017.
3	Patrick, Allison. 2021. Animal and plant records from NCC properties from 2019 and 2020. Nature Conservancy Canada.
2	Basquill, S.P. 2012. 2012 Bryophyte specimen data. Nova Scotia Department of Natural Resources, 37 recs.
2	Blaney, C.S. 2000. Fieldwork 2000. Atlantic Canada Conservation Data Centre. Sackville NB, 1265 recs.
2	Blaney, C.S. Miscellaneous specimens received by ACCDC (botany). Various persons. 2001-08.
2	Blaney, C.S.; Spicer, C.D.; Rothfels, C. 2004. Fieldwork 2004. Atlantic Canada Conservation Data Centre. Sackville NB, 1343 recs.
2	Cameron, B. 2005. <i>C. palmicola</i> , <i>E. pedicellatum</i> records from Sixth Lake. Pers. comm. to C.S. Blaney. 3 recs, 3 recs.
2	Cameron, R.P. 2006. <i>Erioderma pedicellatum</i> 2006 field data. NS Dept of Environment, 9 recs.
2	COSEWIC (Committee on the Status of Wildlife in Canada). 2013. COSEWIC Assessment and Status Report on the Eastern Waterfan <i>Peltigera hydrothyria</i> in Canada. COSEWIC, 46 pp.
2	Frittaion, C. 2012. NSNT 2012 Field Observations. Nova Scotia Nature Trust, Pers comm. to S. Blaney Feb. 7, 34 recs.
2	Gillis, J. 2007. Botanical observations from bog on Skye Mountain, NS. Pers. comm., 8 recs.
2	Gillis, J. 2015. Rare plant records from Cape Breton gypsum sites. Pers. comm., 25 rare plant records.
2	Hill, N. 2003. <i>Floerkea proserpinacoides</i> at Heatherdale, Antigonish Co. 2002. , Pers. comm. to C.S. Blaney. 2 recs.
2	Hill, Nick. 2021. <i>Fraxinus nigra</i> observations at Marshy Hope. Fern Hill Institute of Plant Conservation.
2	Klymko, John. 2024. Atlantic Canada Conservation Data Centre zoological fieldwork 2023. Atlantic Canada Conservation Data Centre.
2	LaPaix, R.W.; Crowell, M.J.; MacDonald, M. 2011. Stantec rare plant records, 2010-11. Stantec Consulting, 334 recs.
2	Malcolm, Adam. 2023. Wood turtle observations - Cape Breton - 2023. Pers. Comm.
2	McAlpine, D.F. New Brunswick Museum bee specimens. New Brunswick Museum. 2013.
2	Mersey Tobeatic Research Institute. 2023. Monarch (<i>Danaus plexippus</i>) and Milkweed MTRI records from the 2023 Field Season. Mersey Tobeatic Research Institute.
2	Nature Conservancy of Canada. 2022. NCC Field data for Nova Scotia. Nature Conservancy of Canada.
2	Sollows, M.C.. 2008. NBM Science Collections databases: mammals. New Brunswick Museum, Saint John NB, download Jan. 2008, 4983 recs.
2	Whittam, R.M. et al. 1998. Country Island Tern Restoration Project. Canadian Wildlife Service, Sackville, 2 recs.

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1	Baechler, Lynn. 2016. Plant observations & photos, 2016. Pers. comm. to S. Blaney, May 2016, 2 recs.
1	Bateman, M.C. 2001. Coastal Waterfowl Surveys Database, 1965-2001. Canadian Wildlife Service, Sackville, 667 recs.
1	Benjamin, L.K. 2009. NSDNR Fieldwork & Consultants Reports. Nova Scotia Dept Natural Resources, 143 recs.
1	Boyne, A.W. & Grecian, V.D. 1999. Tern Surveys. Canadian Wildlife Service, Sackville, unpublished data. 23 recs.
1	Brad Toms. 2024. Erioderma mollissimum records. Mersey Tobeatic Reasearch Institute, 57 recs.
1	Calhoun, J.C. Butterfly records databased at the McGuire Center for Lepidoptera and Biodiversity. Calhoun, J.C. 2020.
1	Chris Pepper. 2021-2022. Mersey Wind Farm Lichen Observations. Chris Pepper, 20 recs.
1	Christie, D.S. 2000. Christmas Bird Count Data, 1997-2000. Nature NB, 54 recs.
1	Clayden, S.R. 1998. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, 19759 recs.
1	Crowell, Iain. 2021. Fraxinus nigra observation near Port Hood. iNaturalist.
1	Crowell, M. 2013. email to Sean Blaney regarding <i>Listera australis</i> at Bear Head and Mill Cove Canadian Forces Station. Jacques Whitford Environmental Ltd., 2.
1	Daury, R.W. & Bateman, M.C. 1996. The Barrow's Goldeneye (<i>Bucephala islandica</i>) in the Atlantic Provinces and Maine. Canadian Wildlife Service, Sackville, 47pp.
1	Doucet, D.A. 2009. Census of Globally Rare, Endemic Butterflies of Nova Scotia Gulf of St Lawrence Salt Marshes. Nova Scotia Dept of Natural Resources, Species at Risk, 155 recs.
1	Haughian, S.R. 2018. Description of <i>Fuscopannaria leucosticta</i> field work in 2017. New Brunswick Museum, 314 recs.
1	Hill, N.M. 2021. Observation of <i>Carex haydenii</i> and black ash near Marshy Hope and Ponhook Lake. pers. comm.
1	Hughes, Cory. 2020. Atlantic Forestry Centre <i>Coccinella transversoguttata</i> collections. Canadian Forest Service, Atlantic Forestry Centre.
1	Klymko, J. 2019. Atlantic Canada Conservation Data Centre zoological fieldwork 2018. Atlantic Canada Conservation Data Centre.
1	Klymko, J. Henry Hensel's Butterfly Collection Database. Atlantic Canada Conservation Data Centre. 2016.
1	Klymko, J.J.D. 2016. 2015 field data. Atlantic Canada Conservation Data Centre.
1	Klymko, J.J.D. 2018. 2017 field data. Atlantic Canada Conservation Data Centre.
1	McNeil, J.A. 2016. Blandings Turtle (<i>Emydoidea blandingii</i>), Eastern Ribbonsnake (<i>Thamnophis sauritus</i>), Wood Turtle (<i>Glyptemys insculpta</i>), and Snapping Turtle (<i>Chelydra serpentina</i>) sightings, 2016. Mersey Tobeatic Research Institute, 774 records.
1	McNeil, J.A. 2019. Snapping Turtle records, 2019. Mersey Tobeatic Research Institute.
1	Mersey Tobeatic Research Institute. 2021. 2020 Monarch records from the MTRI monitoring program. Mersey Tobeatic Research Institute, 72 records.
1	Neily, P.D. Plant Specimens. Nova Scotia Dept Natural Resources, Truro. 2006.
1	Neily, T.H. & Pepper, C.; Toms, B. 2019. Boreal Felt Lichen Observation, April 2019. Mersey Tobeatic Research Institute.
1	Neily, T.H. & Pepper, C.; Toms, B. 2019. Boreal Felt Lichen Observation, January 2019. Mersey Tobeatic Research Institute, 1 rec.
1	Neily, T.H. 2013. Email communication to Sean Blaney regarding <i>Agalinis paupercula</i> observations made in 2013 in Nova Scotia. , 1 rec.
1	Newell, R.E. 2001. Fortress Louisbourg Species at Risk Survey 2001. Parks Canada, 4 recs.
1	Olsen, R. Herbarium Specimens. Nova Scotia Agricultural College, Truro. 2003.
1	Parker, G.R., Maxwell, J.W., Morton, L.D. & Smith, G.E.J. 1983. The ecology of <i>Lynx</i> , <i>Lynx canadensis</i> , on Cape Breton Island. Canadian Journal of Zoology, 61:770-786. 51 recs.
1	Pepper, Chris. 2012. Observations of breeding Canada Warbler's along the Eastern Shore, NS. Pers. comm. to S. Blaney, Jan. 20, 28 recs.
1	Porter, K. 2013. 2013 rare and non-rare vascular plant field data. St. Mary's University, 57 recs.
1	Quigley, E.J. 2006. Plant records, Mabou & Port Hood. Pers. comm. to S.P. Basquill, Jun. 12. 4 recs, 4 recs.
1	Robinson, C.B. 1907. Early intervale flora of eastern Nova Scotia. Transactions of the Nova Scotia Institute of Science, 10:502-506. 1 rec.
1	Standley, L.A. 2002. <i>Carex haydenii</i> in Nova Scotia. , Pers. comm. to C.S. Blaney. 4 recs.
1	Stephen Freeman. 2022. New location for Black Ash in Queens County, NS. Personal communication, 2.
1	Webster, R.P. Atlantic Forestry Centre Insect Collection, Maritimes butterfly records. Natural Resources Canada. 2014.
1	White, S. 2019. Notable species sightings, 2018. East Coast Aquatics.
1	Whittam, R.M. 2000. <i>Senecio pseudoarctica</i> on Country Island. , Pers. comm. to S. Gerriets. 1 rec.

DATA REPORT 8206: Goldboro, NS

Prepared 30 August 2024
by K.Tenwolde,
Conservation Data Analyst

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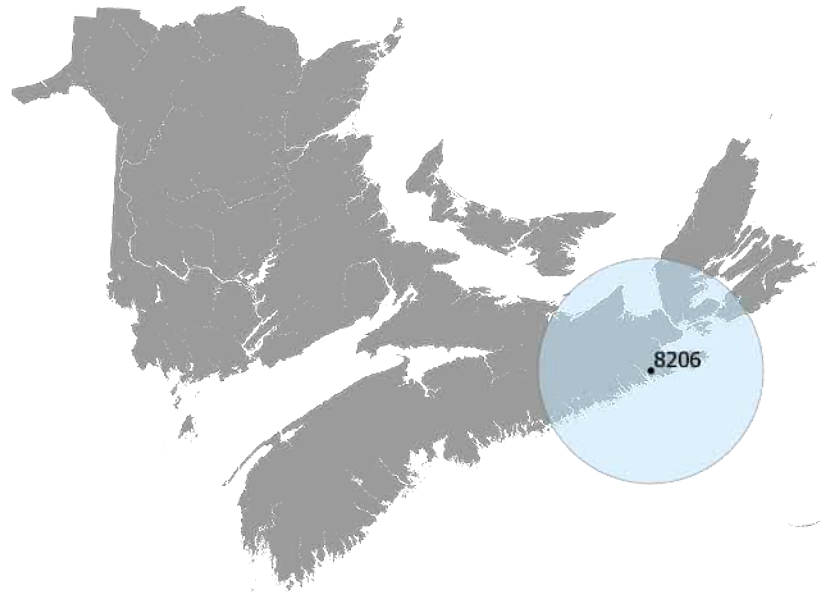
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Map 1. A 100 km buffer around the study area

1.0 PREFACE

The Atlantic Canada Conservation Data Centre (AC CDC; www.accdc.com) is part of a network of NatureServe data centres and heritage programs serving 50 states in the U.S.A, 10 provinces and 1 territory in Canada, plus several Central and South American countries. The NatureServe network is more than 30 years old and shares a common conservation data methodology. The AC CDC was founded in 1997, and maintains data for the jurisdictions of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. Although a non-governmental agency, the AC CDC is supported by 6 federal agencies and 4 provincial governments, as well as through outside grants and data processing fees.

Upon request and for a fee, the AC CDC queries its database and produces customized reports of the rare and endangered flora and fauna known to occur in or near a specified study area. As a supplement to that data, the AC CDC includes locations of managed areas with some level of protection and known sites of ecological interest or sensitivity.

1.1 DATA LIST

Included datasets:

Filename

GoldboroNS_8206ob.xls

GoldboroNS_8206ob100km.xls

GoldboroNS_8206msa.xls

GoldboroNS_8206ff_py.xls

Contents

Rare or legally protected Flora and Fauna in your study area

A list of Rare and legally protected Flora and Fauna within 100 km of your study area

Managed and Biologically Significant Areas in your study area

Rare Freshwater Fish in your study area (DFO database)

1.2 RESTRICTIONS

The AC CDC makes a strong effort to verify the accuracy of all the data that it manages, but it shall not be held responsible for any inaccuracies in data that it provides. By accepting AC CDC data, recipients assent to the following limits of use:

- a) Data is restricted to use by trained personnel who are sensitive to landowner interests and to potential threats to rare and/or endangered flora and fauna posed by the information provided.
- b) Data is restricted to use by the specified Data User; any third-party requiring data must make its own data request.
- c) The AC CDC requires Data Users to cease using and delete data 12 months after receipt, and to make a new request for updated data, if necessary, at that time.
- d) AC CDC data responses are restricted to the data in our Data System at the time of the data request.
- e) Each record has an estimate of locational uncertainty, which must be referenced to understand the record's relevance to a particular location. Please see attached Data Dictionary for details.
- f) AC CDC data responses are not to be construed as exhaustive inventories of taxa in an area.
- g) The absence of a taxon cannot be inferred by its absence in an AC CDC data response.

1.3 ADDITIONAL INFORMATION

The accompanying Data Dictionary provides metadata for the data provided.

Please direct any additional questions about AC CDC data to the following individuals:

Plants, Lichens, Ranking Methods, All other Inquiries

Sean Blaney
Senior Scientist / Executive Director
(506) 364-2658
sean.blaney@accdc.ca

Animals (Fauna)

John Klymko
Zoologist
(506) 364-2660
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Billing

Jean Breau
Financial Manager / Executive Assistant
(506) 364-2657
jean.breau@accdc.ca

Questions on the biology of Federal Species at Risk can be directed to AC CDC: (506) 364-2658, with questions on Species at Risk regulations to: Samara Eaton, Canadian Wildlife Service (NB and PE): (506) 364-5060 or Julie McKnight, Canadian Wildlife Service (NS): (902) 426-4196.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in New Brunswick, please contact Hubert Askanas, Energy and Resource Development: (506) 453-5873.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in Nova Scotia, please contact Donna Hurlburt, NS DLF: (902) 679-6886. To determine if location-sensitive species (section 4.3) occur near your study site please contact a NS DLF Regional Biologist:

Western: Emma Vost
(902) 670-8187
Emma.Vost@novascotia.ca

Western: Sarah Spencer
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Sarah.Spencer@novascotia.ca

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Maureen.Cameron-MacMillan@novascotia.ca

Eastern: Elizabeth Walsh
(902) 563-3370
Elizabeth.Walsh@novascotia.ca

For provincial information about rare taxa and protected areas, or information about game animals, fish habitat etc., in Prince Edward Island, please contact Garry Gregory, PEI Dept. of Communities, Land and Environment: (902) 569-7595.

2.0 RARE AND ENDANGERED SPECIES

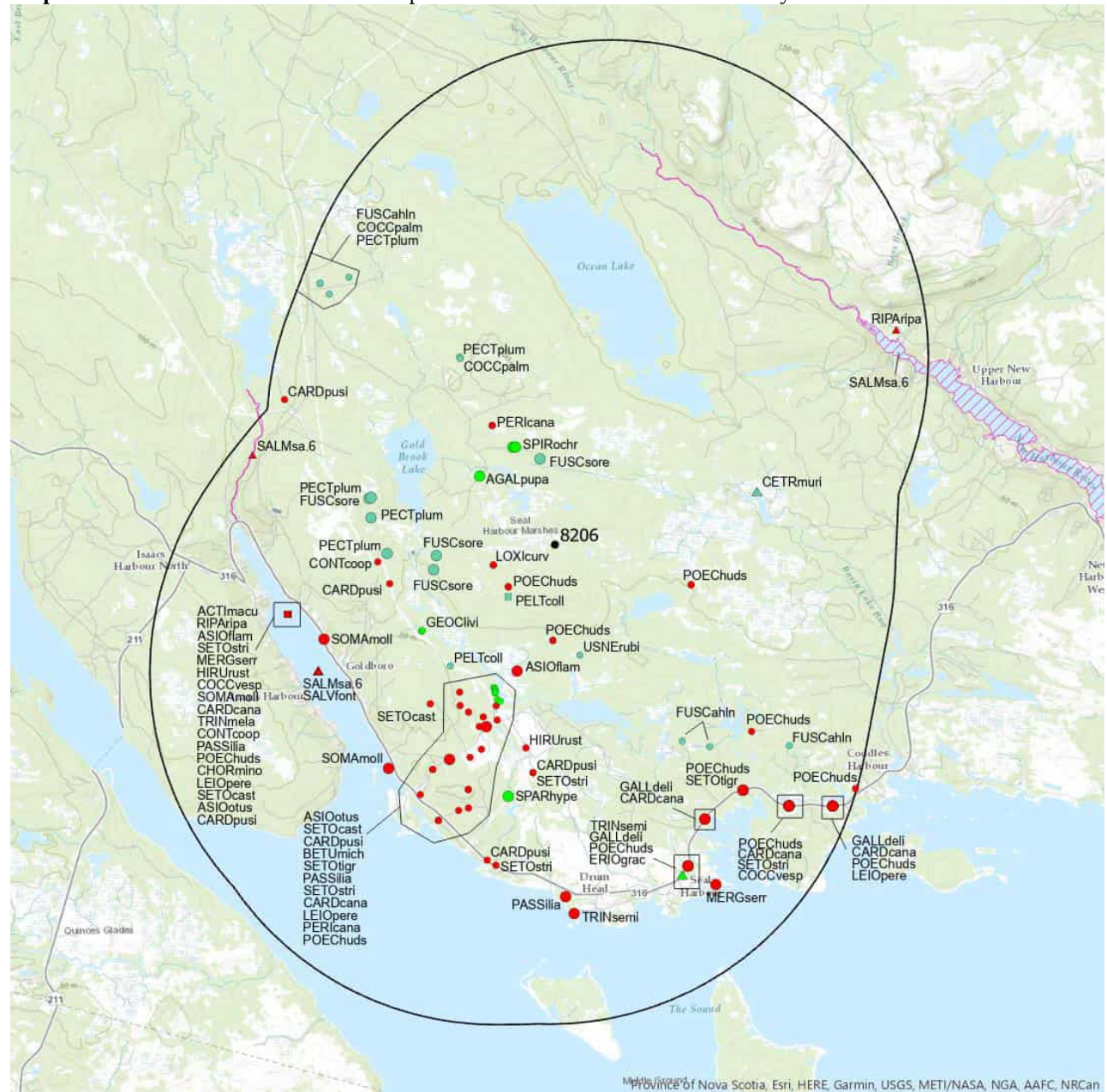
2.1 FLORA

The study area contains 15 records of 6 vascular and 20 records of 7 nonvascular flora (Map 2 and attached: *ob.xls), excluding 'location-sensitive' species.

2.2 FAUNA

The study area contains 99 records of 25 vertebrate and no records of invertebrate fauna (Map 2 and attached data files - see 1.1 Data List), excluding 'location-sensitive species'. Please see section 4.3 to determine if 'location-sensitive' species occur near your study site.

Map 2: Known observations of rare and/or protected flora and fauna within the study area.



Resolution

- 1.0 = Within 10s of metres
- 1.7 = Within 50s of metres
- 2.0 = Within 100s of metres
- △ 2.7 = Within 500s of metres
- △ 3.0 = Within kilometres
- 3.7 = Within 5s of kilometres
- 4.0 = Within 10s of kilometres
- 4.7 = Within 50s of kilometres

Higher taxon

- Vertebrate fauna
- Invertebrate fauna
- Vascular flora
- Nonvascular flora

3.0 SPECIAL AREAS

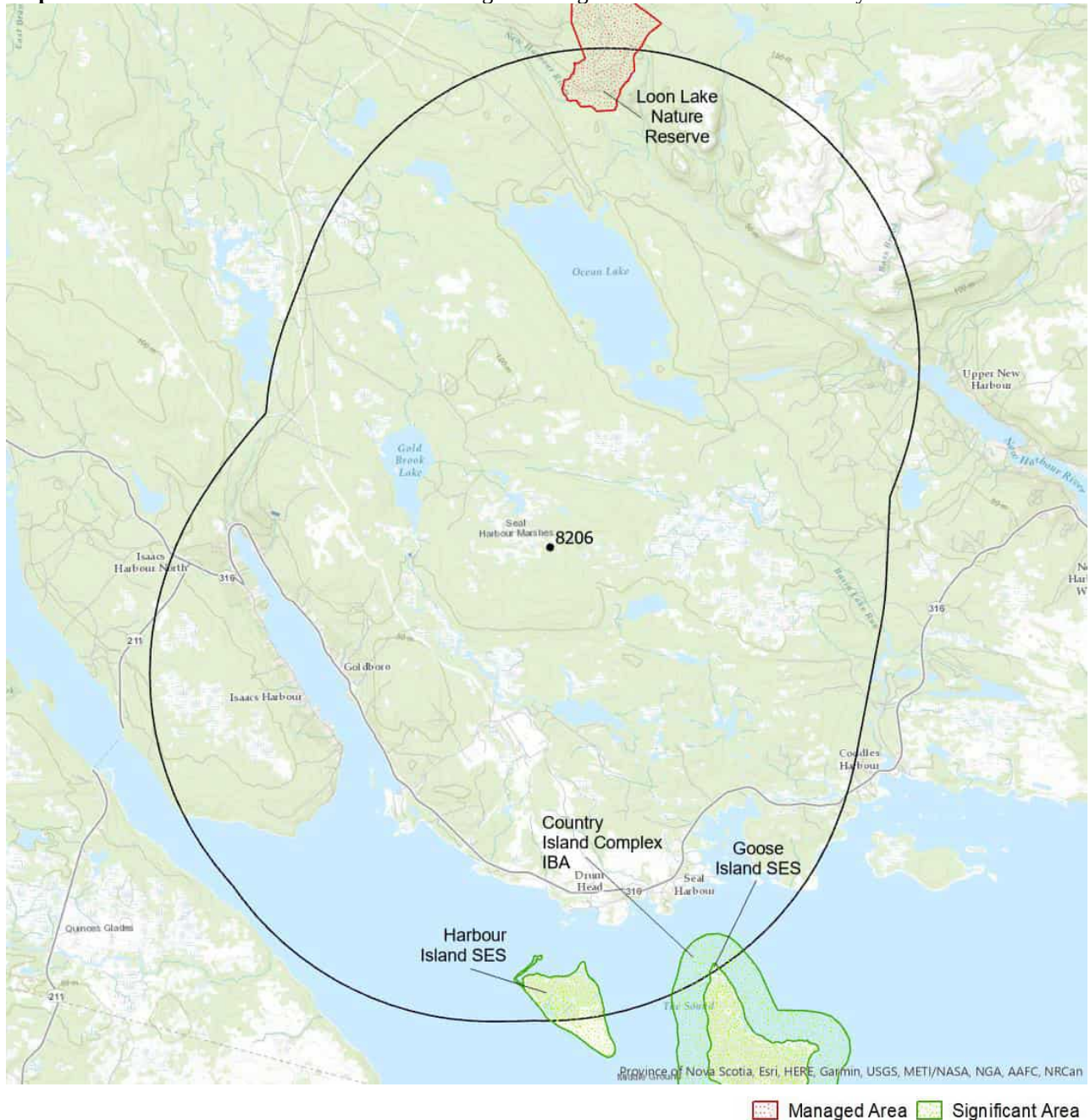
3.1 MANAGED AREAS

The GIS scan identified 1 managed area in the vicinity of the study area (Map 3 and attached file: *msa.xls).

3.2 SIGNIFICANT AREAS

The GIS scan identified 4 biologically significant sites in the vicinity of the study area (Map 3 and attached file: *msa.xls).

Map 3: Boundaries and/or locations of known Managed and Significant Areas within the study area.



4.0 RARE SPECIES LISTS

Rare and/or endangered taxa (excluding “location-sensitive” species, section 4.3) within the study area listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation ($\pm$ the precision, in km, of the record). [P] = vascular plant, [N] = nonvascular plant, [A] = vertebrate animal, [I] = invertebrate animal, [C] = community. Note: records are from attached files *ob.xls/*ob.shp only.

4.1 FLORA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
N	<i>Pectenium plumbea</i>	Blue Felt Lichen	Special Concern	Special Concern	Vulnerable	S3	5	2.7 $\pm$ 0.2
N	<i>Usnea rubicunda</i>	Red Beard Lichen				S2S3	1	1.8 $\pm$ 0.01
N	<i>Cetraria muricata</i>	Spiny Heath Lichen				S2S3	1	3.3 $\pm$ 1.7
N	<i>Fuscopannaria sorediata</i>	a Lichen				S2S3	4	1.4 $\pm$ 0.2
N	<i>Fuscopannaria ahlneri</i>	Roughened Shingle Lichen				S3	4	3.7 $\pm$ 0.01
N	<i>Peltigera collina</i>	Tree Pelt Lichen				S3	2	1.1 $\pm$ 4.0
N	<i>Coccocarpia palmicola</i>	Salted Shell Lichen				S3S4	3	3.3 $\pm$ 0.01
P	<i>Sparganium hyperboreum</i>	Northern Burreed				S2	1	4.1 $\pm$ 0.1
P	<i>Agalinis purpurea</i> var. <i>parviflora</i>	Small-flowered Purple False Foxglove				S2S3	1	1.6 $\pm$ 0.2
P	<i>Betula michauxii</i>	Michaux's Dwarf Birch				S3	8	2.5 $\pm$ 0.01
P	<i>Eriophorum gracile</i>	Slender Cottongrass				S3	1	5.6 $\pm$ 1.0
P	<i>Spiranthes ochroleuca</i>	Yellow Ladies'-tresses				S3?	2	1.7 $\pm$ 0.2
P	<i>Geocaulon lividum</i>	Northern Comandra				S3S4	2	2.5 $\pm$ 0.01

4.2 FAUNA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
A	<i>Salmo salar</i> pop. 6	Atlantic Salmon - Nova Scotia Southern Upland population	Endangered			S1	2	4.3 $\pm$ 1.0
A	<i>Asio flammeus</i>	Short-eared Owl	Threatened	Special Concern		S1B	2	2.1 $\pm$ 0.15
A	<i>Riparia riparia</i>	Bank Swallow	Threatened	Threatened	Endangered	S2B	2	4.4 $\pm$ 7.07
A	<i>Hirundo rustica</i>	Barn Swallow	Special Concern	Threatened	Endangered	S3B	2	3.3 $\pm$ 0.01
A	<i>Cardellina canadensis</i>	Canada Warbler	Special Concern	Threatened	Endangered	S3B	10	2.8 $\pm$ 0.01
A	<i>Chordeiles minor</i>	Common Nighthawk	Special Concern	Special Concern	Threatened	S3B	1	4.4 $\pm$ 7.07
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Special Concern	Special Concern	Threatened	S3B	2	2.8 $\pm$ 0.01
A	<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Special Concern	Special Concern	Vulnerable	S3B,S3N,S3M	2	4.4 $\pm$ 7.07
A	<i>Somateria mollissima</i>	Common Eider				S2B,S2N,S4M	4	4.0 $\pm$ 0.2
A	<i>Asio otus</i>	Long-eared Owl				S2S3	2	3.1 $\pm$ 0.15
A	<i>Perisoreus canadensis</i>	Canada Jay				S3	4	2.1 $\pm$ 0.01
A	<i>Poecile hudsonicus</i>	Boreal Chickadee				S3	22	1.0 $\pm$ 0.01
A	<i>Salvelinus fontinalis</i>	Brook Trout				S3	1	4.3 $\pm$ 1.0
A	<i>Tringa semipalmata</i>	Willet				S3B	2	5.5 $\pm$ 0.25
A	<i>Tringa melanoleuca</i>	Greater Yellowlegs				S3B,S4M	1	4.4 $\pm$ 7.07
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S4S5N,S5M	2	4.4 $\pm$ 7.07
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3B,S5M	4	5.0 $\pm$ 0.25
A	<i>Setophaga striata</i>	Blackpoll Warbler				S3B,S5M	5	3.6 $\pm$ 0.01
A	<i>Cardellina pusilla</i>	Wilson's Warbler				S3B,S5M	11	2.7 $\pm$ 0.01
A	<i>Setophaga tigrina</i>	Cape May Warbler				S3B,SUM	2	4.5 $\pm$ 0.01
A	<i>Loxia curvirostra</i>	Red Crossbill				S3S4	2	1.0 $\pm$ 0.01
A	<i>Setophaga castanea</i>	Bay-breasted Warbler				S3S4B,S4S5M	6	3.2 $\pm$ 0.01
A	<i>Actitis macularia</i>	Spotted Sandpiper				S3S4B,S5M	2	4.4 $\pm$ 7.07
A	<i>Leiothlypis peregrina</i>	Tennessee Warbler				S3S4B,S5M	3	4.4 $\pm$ 7.07
A	<i>Passerella iliaca</i>	Fox Sparrow				S3S4B,S5M	3	3.1 $\pm$ 0.01

4.3 LOCATION SENSITIVE SPECIES

The Department of Natural Resources in each Maritimes province considers a number of species “location sensitive”. Concern about exploitation of location-sensitive species precludes inclusion of precise coordinates in this report. Those intersecting your study area are indicated below with “YES”.

Nova Scotia

Scientific Name	Common Name	SARA	Prov Legal Prot	Known within the Study Site?
<i>Alces alces americana</i>	Moose – Mainland population		Endangered	YES
<i>Fraxinus nigra</i>	Black Ash		Threatened	No
<i>Emydoidea blandingii</i>	Blanding's Turtle - Nova Scotia pop.	Endangered	Endangered	No
<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	No
<i>Falco peregrinus</i> pop. 1	Peregrine Falcon - anatum/tundrius pop.		Vulnerable	No
<i>Bat Hibernaculum</i> or bat species occurrence		[Endangered] ¹	[Endangered] ¹	YES
<i>Snake hibernaculum</i>		[Threatened] ²	[Threatened] ²	No

1 *Myotis lucifugus* (Little Brown Myotis), *Myotis septentrionalis* (Long-eared Myotis), and *Perimyotis subflavus* (Tri-colored Bat or Eastern Pipistrelle) are all Endangered under the Federal Species at Risk Act and the NS Endangered Species Act.

2 *Thamnophis sauritus* (Eastern Ribbonsnake) is Threatened under the Federal Species at Risk Act (SARA) and the Nova Scotia Endangered Species Act. Occurrences between October 15 – April 15 are considered location sensitive.

4.4 SOURCE BIBLIOGRAPHY

The recipient of these data shall acknowledge the AC CDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

# recs	CITATION
27	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
25	Pardieck, K.L., Ziolkowski Jr., D.J., Lutmerding, M., Aponte, V.I., and Hudson, M-A.R. 2020. North American Breeding Bird Survey Dataset 1966 - 2019: U.S. Geological Survey data release, https://doi.org/10.5066/P9J6QUF6
21	Pepper, C. 2021. Rare bird, plant and mammal observations in Nova Scotia, 2017-2021.
12	Bell, G. 2018. Moose, bat and bird records from Goldboro LNG Project, NS, Environmental Assessment. Amec Foster Wheeler.
10	LaPaix, R.W.; Crowell, M.J.; MacDonald, M.; Neily, T.D.; Quinn, G. 2017. Stantec Nova Scotia rare plant records, 2012-2016. Stantec Consulting.
8	Cameron, R.P. 2011. Lichen observations, 2011. Nova Scotia Environment & Labour, 731 recs.
7	iNaturalist. 2020. iNaturalist Data Export 2020. iNaturalist.org and iNaturalist.ca, Web site: 128728 recs.
6	iNaturalist.ca. 2023. iNaturalist Data Export December 2022. iNaturalist.org; iNaturalist.ca, Web site: 128634 recs.
5	Benjamin, L.K. (compiler). 2007. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 8439 recs.
5	Neily, T.H. & Pepper, C. 2020. Nova Scotia SMP lichen surveys 2020. Mersey Tobeatic Research Institute.
3	Benjamin, L.K. (compiler). 2012. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 4965 recs.
3	Neily, T.H. & Pepper, C.; Toms, B. 2018. Nova Scotia lichen database [as of 2018-03]. Mersey Tobeatic Research Institute.
2	Munro, Marian K. Tracked lichen specimens, Nova Scotia Provincial Museum of Natural History Herbarium. Atlantic Canada Conservation Data Centre. 2019.
2	Newell, R.E. 2000. E.C. Smith Herbarium Database. Acadia University, Wolfville NS, 7139 recs.
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1	Canadian Wildlife Service. 2019. Canadian Protected and Conserved Areas Database (CPCAD). December 2019. ECCC. https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/protected-conserved-areas-database.html .
1	eBird. 2020. eBird Basic Dataset. Version: EBD_relNov-2019. Ithaca, New York. Nov 2019, Cape Breton Bras d'Or Lakes Watershed subset. Cornell Lab of Ornithology.
1	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2014.
1	Neily, T.H. & Pepper, C.; Toms, B. 2020. Nova Scotia lichen database [as of 2020-03-18]. Mersey Tobeatic Research Institute.

5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 26745 records of 151 vertebrate and 607 records of 49 invertebrate fauna; 3603 records of 220 vascular and 3675 records of 111 nonvascular flora (attached: *ob100km.xls).

Taxa within 100 km of the study site that are rare and/or endangered in the province in which the study site occurs (including “location-sensitive” species). All ranks correspond to the province in which the study site falls, even for out-of-province records. Taxa are listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation ($\pm$ the precision, in km, of the record).

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	<i>Myotis lucifugus</i>	Little Brown Myotis	Endangered	Endangered	Endangered	S1	44	29.1 $\pm$ 0.1	NS
A	<i>Salmo salar</i> pop. 1	Atlantic Salmon - Inner Bay of Fundy population	Endangered	Endangered		S1	1	98.1 $\pm$ 0.5	NS
A	<i>Salmo salar</i> pop. 4	Atlantic Salmon - Eastern Cape Breton population	Endangered			S1	12	54.5 $\pm$ 0.5	NS
A	<i>Salmo salar</i> pop. 6	Atlantic Salmon - Nova Scotia Southern Upland population	Endangered			S1	34	14.8 $\pm$ 1.0	NS
A	<i>Charadrius melodus melodus</i>	Piping Plover melodus subspecies	Endangered	Endangered	Endangered	S1B	769	15.8 $\pm$ 7.07	NS
A	<i>Sterna dougallii</i>	Roseate Tern	Endangered	Endangered	Endangered	S1B	77	11.4 $\pm$ 0.5	NS
A	<i>Dermochelys coriacea</i> pop. 2	Leatherback Sea Turtle - Atlantic population	Endangered	Endangered		S1S2N	2	51.3 $\pm$ 0.2	NS
A	<i>Pagophila eburnea</i>	Ivory Gull	Endangered	Endangered		SNA	1	52.2 $\pm$ 0.2	NS
A	<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	Endangered	Threatened		SNA	1	50.3 $\pm$ 0.2	NS
A	<i>Icteria virens</i>	Yellow-Breasted Chat	Endangered	Endangered		SNA	1	13.6 $\pm$ 0.2	NS
A	<i>Lasiurus cinereus</i>	Hoary Bat	Endangered			SUB,S1M	1	52.8 $\pm$ 0.2	NS
A	<i>Lamna nasus</i> pop. 1	Porbeagle - Northwest Atlantic population	Endangered				1	51.8 $\pm$ 1.52	NS
A	<i>Catharus minimus minimus</i>	Gray-cheeked Thrush minimus subspecies	Threatened			S1?B	10	35.8 $\pm$ 7.07	NS
A	<i>Catharus bicknelli</i>	Bicknell's Thrush	Threatened	Threatened	Endangered	S1B	1	74.2 $\pm$ 7.07	NS
A	<i>Asio flammeus</i>	Short-eared Owl	Threatened	Special Concern		S1B	7	2.1 $\pm$ 0.15	NS
A	<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	Threatened	S2	7891	24.3 $\pm$ 10.0	NS
A	<i>Riparia riparia</i>	Bank Swallow	Threatened	Threatened	Endangered	S2B	596	100.0 $\pm$ 7.07	NS
A	<i>Chaetura pelagica</i>	Chimney Swift	Threatened	Threatened	Endangered	S2S3B,S1M	606	19.7 $\pm$ 7.07	NS
A	<i>Limosa haemastica</i>	Hudsonian Godwit	Threatened			S2S3M	9	20.4 $\pm$ 0.2	NS
A	<i>Hydrobates leucorhous</i>	Leach's Storm-Petrel	Threatened			S3B	70	12.1 $\pm$ 0.15	NS
A	<i>Tringa flavipes</i>	Lesser Yellowlegs	Threatened			S3M	253	11.9 $\pm$ 0.2	NS
A	<i>Anguilla rostrata</i>	American Eel	Threatened			S3N	17	20.9 $\pm$ 0.2	NS
A	<i>Sturnella magna</i>	Eastern Meadowlark	Threatened	Threatened		SHB	2	22.2 $\pm$ 0.15	NS
A	<i>Hylocichla mustelina</i>	Wood Thrush	Threatened	Threatened		SUB	8	10.6 $\pm$ 7.07	NS
A	<i>Salmo salar</i> pop. 12	Atlantic Salmon - Gaspé - Southern Gulf of St. Lawrence population	Special Concern			S1	23	44.5 $\pm$ 1.0	NS
A	<i>Antrostomus vociferus</i>	Eastern Whip-Poor-Will	Special Concern	Threatened	Threatened	S1?B	2	59.7 $\pm$ 7.07	NS
A	<i>Passerculus sandwichensis princeps</i>	Ipswich Sparrow	Special Concern	Special Concern		S1B	14	13.5 $\pm$ 3.81	NS
A	<i>Bucephala islandica</i> pop. 1	Barrow's Goldeneye - Eastern Population	Special Concern	Special Concern		S1N,SUM	21	28.7 $\pm$ 0.2	NS
A	<i>Euphagus carolinus</i>	Rusty Blackbird	Special Concern	Special Concern	Endangered	S2B	213	15.0 $\pm$ 0.15	NS
A	<i>Histrionicus histrionicus</i> pop. 1	Harlequin Duck - Eastern population	Special Concern	Special Concern	Endangered	S2N	46	100.0 $\pm$ 0.1	NS
A	<i>Balaenoptera physalus</i> pop. 1	Fin Whale - Atlantic population	Special Concern	Special Concern		S2S3	2	98.1 $\pm$ 0.2	NS
A	<i>Phalaropus lobatus</i>	Red-necked Phalarope	Special Concern	Special Concern		S2S3M	1	13.8 $\pm$ 0.2	NS
A	<i>Morone saxatilis</i> pop. 1	Striped Bass - Southern Gulf of St. Lawrence population	Special Concern			S2S3N	1	54.1 $\pm$ 1.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	<i>Chelydra serpentina</i>	Snapping Turtle	Special Concern	Special Concern	Vulnerable	S3	71	29.4 ± 0.2	NS
A	<i>Hirundo rustica</i>	Barn Swallow	Special Concern	Threatened	Endangered	S3B	692	100.0 ± 7.07	NS
A	<i>Cardellina canadensis</i>	Canada Warbler	Special Concern	Threatened	Endangered	S3B	714	10.6 ± 7.07	NS
A	<i>Chordeiles minor</i>	Common Nighthawk	Special Concern	Special Concern	Threatened	S3B	308	14.3 ± 7.07	NS
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Special Concern	Special Concern	Threatened	S3B	1011	10.1 ± 1.0	NS
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Special Concern	Threatened	Vulnerable	S3B	332	100.0 ± 7.07	NS
A	<i>Coccythraustes vespertinus</i>	Evening Grosbeak	Special Concern	Special Concern	Vulnerable	S3B,S3N,S3M	562	16.8 ± 7.07	NS
A	<i>Podiceps auritus</i>	Horned Grebe	Special Concern	Special Concern	Special Concern	S3N,SUM	28	11.2 ± 0.24	NS
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern	Special Concern	Vulnerable	S3S4B	459	10.6 ± 7.07	NS
A	<i>Phocoena phocoena pop. 1</i>	Harbour Porpoise - Northwest Atlantic Population	Special Concern			S4	17	51.1 ± 0.2	NS
A	<i>Chrysemys picta picta</i>	Eastern Painted Turtle	Special Concern	Special Concern		S4	11	46.9 ± 1.0	NS
A	<i>Calidris subruficollis</i>	Buff-breasted Sandpiper	Special Concern	Special Concern		SNA	2	83.0 ± 0.29	NS
A	<i>Accipiter cooperii</i>	Cooper's Hawk	Not At Risk			S1?B,SUN,SUM	11	22.4 ± 0.2	NS
A	<i>Fulica americana</i>	American Coot	Not At Risk			S1B	5	11.6 ± 0.2	NS
A	<i>Chlidonias niger</i>	Black Tern	Not At Risk			S1B	4	12.1 ± 0.34	NS
A	<i>Falco peregrinus pop. 1</i>	Peregrine Falcon - anatum/tundrius	Not At Risk		Vulnerable	S1B,SUM	9	13.4 ± 0.89	NS
A	<i>Sorex dispar gaspensis</i>	Gaspé Shrew	Not At Risk	Special Concern		S2	1	99.9 ± 0.5	NS
A	<i>Aegolius funereus</i>	Boreal Owl	Not At Risk			S2?B,SUM	6	26.7 ± 0.2	NS
A	<i>Lynx canadensis</i>	Canada Lynx	Not At Risk		Endangered	S2S3	13	67.0 ± 1.0	NS
A	<i>Hemidactylium scutatum</i>	Four-toed Salamander	Not At Risk			S3	12	13.0 ± 0.5	NS
A	<i>Megaptera novaeangliae</i>	Humpback Whale	Not At Risk			S3	12	51.1 ± 0.2	NS
A	<i>Sterna hirundo</i>	Common Tern	Not At Risk			S3B	469	11.1 ± 0.25	NS
A	<i>Sialia sialis</i>	Eastern Bluebird	Not At Risk			S3B	22	14.3 ± 7.07	NS
A	<i>Buteo lagopus</i>	Rough-legged Hawk	Not At Risk			S3N	8	25.0 ± 6.1	NS
A	<i>Accipiter atricapillus</i>	American Goshawk	Not At Risk			S3S4	94	15.8 ± 7.07	NS
A	<i>Glaucomys volans</i>	Southern Flying Squirrel	Not At Risk			S3S4	1	99.0 ± 0.2	NS
A	<i>Lagenorhynchus acutus</i>	Atlantic White-sided Dolphin	Not At Risk			S3S4	2	52.0 ± 0.2	NS
A	<i>Ammospiza nelsoni</i>	Nelson's Sparrow	Not At Risk			S3S4B	107	100.0 ± 7.07	NS
A	<i>Calidris canutus rufa</i>	Red Knot rufa subspecies	E,SC	Endangered	Endangered	S2M	27	12.1 ± 0.34	NS
A	<i>Morone saxatilis</i>	Striped Bass	E,SC			S2S3B,S2S3N	7	50.9 ± 0.2	NS
A	<i>Salmo salar</i>	Atlantic Salmon	E,T,SC			S1B,S1N	8	36.2 ± 0.2	NS
A	<i>Alces alces americana</i>	Moose			Endangered	S1	122	27.7 ± 0.01	NS
A	<i>Alces alces</i>	Moose				S1	8	16.1 ± 0.2	NS
A	<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S1?	4	23.7 ± 7.07	NS
A	<i>Uria aalge</i>	Common Murre				S1?B	1	76.7 ± 0.2	NS
A	<i>Passerina cyanea</i>	Indigo Bunting				S1?B,SUM	18	20.7 ± 0.2	NS
A	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron				S1B	1	63.7 ± 7.07	NS
A	<i>Oxyura jamaicensis</i>	Ruddy Duck				S1B	7	51.8 ± 7.07	NS
A	<i>Bartramia longicauda</i>	Upland Sandpiper				S1B	1	13.9 ± 0.2	NS
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S1B	19	12.1 ± 0.37	NS
A	<i>Toxostoma rufum</i>	Brown Thrasher				S1B	8	22.4 ± 0.2	NS
A	<i>Charadrius semipalmatus</i>	Semipalmated Plover				S1B,S4M	321	12.1 ± 0.56	NS
A	<i>Calidris minutilla</i>	Least Sandpiper				S1B,S4M	184	12.1 ± 0.56	NS
A	<i>Anas acuta</i>	Northern Pintail				S1B,SUM	12	40.2 ± 7.07	NS
A	<i>Vireo gilvus</i>	Warbling Vireo				S1B,SUM	7	23.0 ± 0.2	NS
A	<i>Vespertilionidae sp.</i>	bat species				S1S2	61	22.5 ± 0.1	NS
A	<i>Poecetes gramineus</i>	Vesper Sparrow				S1S2B,SUM	6	23.7 ± 7.07	NS
A	<i>Microtus chrotorrhinus</i>	Rock Vole				S2	5	99.9 ± 0.5	NS
A	<i>Vireo philadelphicus</i>	Philadelphia Vireo				S2?B,SUM	20	12.1 ± 0.34	NS
A	<i>Alca torda</i>	Razorbill				S2B	13	13.9 ± 0.2	NS
A	<i>Fratercula arctica</i>	Atlantic Puffin				S2B	4	12.1 ± 0.34	NS
A	<i>Empidonax traillii</i>	Willow Flycatcher				S2B	4	40.2 ± 7.07	NS
A	<i>Molothrus ater</i>	Brown-headed Cowbird				S2B	63	13.7 ± 0.29	NS
A	<i>Somateria mollissima</i>	Common Eider				S2B,S2N,S4M	643	11.9 ± 7.07	NS
A	<i>Spatula clypeata</i>	Northern Shoveler				S2B,SUM	6	55.3 ± 0.2	NS
A	<i>Mareca strepera</i>	Gadwall				S2B,SUM	16	24.0 ± 0.2	NS
A	<i>Piranga olivacea</i>	Scarlet Tanager				S2B,SUM	10	22.5 ± 0.4	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	<i>Calidris alba</i>	Sanderling				S2N,S3M	142	12.1 ± 0.34	NS
A	<i>Melanitta perspicillata</i>	Surf Scoter				S2N,S4M	95	10.8 ± 4.67	NS
A	<i>Melanitta deglandi</i>	White-winged Scoter				S2N,S4M	26	11.3 ± 0.66	NS
A	<i>Martes americana</i>	American Marten			Endangered	S2S3	1	98.7 ± 0.01	NS
A	<i>Asio otus</i>	Long-eared Owl				S2S3	23	3.1 ± 0.15	NS
A	<i>Rallus limicola</i>	Virginia Rail				S2S3B	7	39.1 ± 7.07	NS
A	<i>Rissa tridactyla</i>	Black-legged Kittiwake				S2S3B	20	12.4 ± 0.2	NS
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S2S3B	117	100.0 ± 7.07	NS
A	<i>Phalacrocorax carbo</i>	Great Cormorant				S2S3B,S2S3N	117	12.1 ± 0.34	NS
A	<i>Cathartes aura</i>	Turkey Vulture				S2S3B,S4S5M	14	22.4 ± 0.2	NS
A	<i>Setophaga pinus</i>	Pine Warbler				S2S3B,S4S5M	28	14.1 ± 0.2	NS
A	<i>Icterus galbula</i>	Baltimore Oriole				S2S3B,SUM	59	21.2 ± 0.2	NS
A	<i>Pluvialis dominica</i>	American Golden-Plover				S2S3M	25	55.5 ± 0.5	NS
A	<i>Numenius phaeopus hudsonicus</i>	Whimbrel				S2S3M	74	12.1 ± 0.34	NS
A	<i>Phalaropus fulicarius</i>	Red Phalarope				S2S3M	1	14.0 ± 0.36	NS
A	<i>Perisoreus canadensis</i>	Canada Jay				S3	527	10.3 ± 0.01	NS
A	<i>Poecile hudsonicus</i>	Boreal Chickadee				S3	1035	1.0 ± 0.01	NS
A	<i>Spinus pinus</i>	Pine Siskin				S3	403	100.0 ± 0.25	NS
A	<i>Salvelinus fontinalis</i>	Brook Trout				S3	59	12.1 ± 0.01	NS
A	<i>Salvelinus namaycush</i>	Lake Trout				S3	1	83.2 ± 0.5	NS
A	<i>Synaptomys cooperi</i>	Southern Bog Lemming				S3	2	99.9 ± 0.5	NS
A	<i>Pekania pennanti</i>	Fisher				S3	6	38.7 ± 0.01	NS
A	<i>Calcarius lapponicus</i>	Lapland Longspur				S3?N,SUM	4	22.1 ± 4.16	NS
A	<i>Spatula discors</i>	Blue-winged Teal				S3B	78	19.4 ± 7.07	NS
A	<i>Charadrius vociferus</i>	Killdeer				S3B	209	100.0 ± 7.07	NS
A	<i>Tringa semipalmata</i>	Willet				S3B	682	10.4 ± 0.25	NS
A	<i>Sterna paradisaea</i>	Arctic Tern				S3B	110	10.0 ± 7.07	NS
A	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo				S3B	53	23.7 ± 7.07	NS
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3B	91	100.0 ± 7.07	NS
A	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak				S3B	336	19.7 ± 7.07	NS
A	<i>Alosa pseudoharengus</i>	Alewife				S3B	24	20.8 ± 1.0	NS
A	<i>Tringa melanoleuca</i>	Greater Yellowlegs				S3B,S4M	361	11.1 ± 0.15	NS
A	<i>Falco sparverius</i>	American Kestrel				S3B,S4S5M	264	100.0 ± 7.07	NS
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S4S5N,S5M	179	100.0 ± 0.2	NS
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3B,S5M	441	100.0 ± 0.25	NS
A	<i>Setophaga striata</i>	Blackpoll Warbler				S3B,S5M	146	11.9 ± 7.07	NS
A	<i>Cardellina pusilla</i>	Wilson's Warbler				S3B,S5M	131	11.9 ± 7.07	NS
A	<i>Pinicola enucleator</i>	Pine Grosbeak				S3B,S5N,S5M	109	10.6 ± 7.07	NS
A	<i>Setophaga tigrina</i>	Cape May Warbler				S3B,SUM	206	10.4 ± 0.25	NS
A	<i>Branta bernicla</i>	Brant				S3M	1	34.3 ± 16.6	NS
A	<i>Pluvialis squatarola</i>	Black-bellied Plover				S3M	217	12.1 ± 0.34	NS
A	<i>Arenaria interpres</i>	Ruddy Turnstone				S3M	119	12.1 ± 0.34	NS
A	<i>Calidris pusilla</i>	Semipalmated Sandpiper				S3M	245	12.1 ± 0.34	NS
A	<i>Calidris melanotos</i>	Pectoral Sandpiper				S3M	36	12.1 ± 0.37	NS
A	<i>Limnodromus griseus</i>	Short-billed Dowitcher				S3M	145	11.9 ± 0.2	NS
A	<i>Chroicocephalus ridibundus</i>	Black-headed Gull				S3N	71	18.3 ± 0.29	NS
A	<i>Picoides arcticus</i>	Black-backed Woodpecker				S3S4	112	10.4 ± 0.01	NS
A	<i>Loxia curvirostra</i>	Red Crossbill				S3S4	117	1.0 ± 0.01	NS
A	<i>Botaurus lentiginosus</i>	American Bittern				S3S4B,S4S5M	212	22.6 ± 0.15	NS
A	<i>Setophaga castanea</i>	Bay-breasted Warbler				S3S4B,S4S5M	475	10.6 ± 7.07	NS
A	<i>Actitis macularius</i>	Spotted Sandpiper				S3S4B,S5M	620	100.0 ± 0.25	NS
A	<i>Leiothlypis peregrina</i>	Tennessee Warbler				S3S4B,S5M	454	100.0 ± 0.25	NS
A	<i>Passerella iliaca</i>	Fox Sparrow				S3S4B,S5M	129	10.4 ± 0.25	NS
A	<i>Bucephala albeola</i>	Bufflehead				S3S4N	70	10.5 ± 4.64	NS
A	<i>Calidris maritima</i>	Purple Sandpiper				S3S4N	35	12.1 ± 0.34	NS
A	<i>Lanius borealis</i>	Northern Shrike				S3S4N	5	22.2 ± 1.04	NS
A	<i>Morus bassanus</i>	Northern Gannet				SHB	126	12.1 ± 0.56	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	<i>Aythya americana</i>	Redhead				SHB	10	21.1 ± 0.82	NS
A	<i>Leucophaeus atricilla</i>	Laughing Gull				SHB	4	11.8 ± 0.25	NS
A	<i>Progne subis</i>	Purple Martin				SHB	5	12.1 ± 0.34	NS
A	<i>Eremophila alpestris</i>	Horned Lark				SHB,S4S5N,S5M	5	78.8 ± 0.2	NS
I	<i>Bombus bohemicus</i>	Ashton Cuckoo Bumble Bee	Endangered	Endangered	Endangered	S1	5	52.8 ± 5.0	NS
I	<i>Danaus plexippus</i>	Monarch	Endangered	Special Concern	Endangered	S2?B,S3M	159	11.4 ± 0.39	NS
I	<i>Alasmodonta varicosa</i>	Brook Floater	Special Concern	Special Concern	Threatened	S3	9	20.4 ± 0.1	NS
I	<i>Bombus terricola</i>	Yellow-banded Bumble Bee	Special Concern	Special Concern	Vulnerable	S3	82	22.3 ± 0.2	NS
I	<i>Coccinella transversoguttata richardsoni</i>	Transverse Lady Beetle	Special Concern		Endangered	SH	1	98.9 ± 2.5	NS
I	<i>Euphyes bimaculata</i>	Two-spotted Skipper				S1S2	2	23.2 ± 0.1	NS
I	<i>Haematopota rara</i>	Shy Cleg				S1S3	1	83.5 ± 0.05	NS
I	<i>Tharsalea dorcas</i>	Dorcas Copper				S2	20	80.7 ± 0.01	NS
I	<i>Tharsalea dospassosi</i>	Maritime Copper				S2	1	96.8 ± 0.05	NS
I	<i>Neurocordulia michaeli</i>	Broad-tailed Shadowdragon				S2	26	29.3 ± 0.05	NS
I	<i>Margaritifera margaritifera</i>	Eastern Pearlshell				S2	86	20.4 ± 0.1	NS
I	<i>Pantala hymenaea</i>	Spot-Winged Glider				S2?B	1	38.3 ± 1.0	NS
I	<i>Nymphalis l-album j-album</i>	Compton Tortoiseshell				S2S3	2	86.3 ± 0.2	NS
I	<i>Aglaia milberti</i>	Milbert's Tortoiseshell				S2S3	1	92.2 ± 2.5	NS
I	<i>Lanthus vernalis</i>	Southern Pygmy Clubtail				S2S3	8	44.5 ± 0.05	NS
I	<i>Alasmodonta undulata</i>	Triangle Floater				S2S3	5	35.5 ± 0.55	NS
I	<i>Sphaeroderus nitidicollis</i>	Polished Snail-eating Beetle				S3	1	44.4 ± 0.2	NS
I	<i>Psephenus herricki</i>	Herrick's Water Penny Beetle				S3	1	63.8 ± 0.2	NS
I	<i>Platydacus fossator</i>	Digging Rove Beetle				S3	2	22.4 ± 0.2	NS
I	<i>Chrysomelid auratus</i>	Dogbane Leaf Beetle				S3	1	22.4 ± 0.2	NS
I	<i>Naemia seriata</i>	Seaside Lady Beetle				S3	3	13.9 ± 0.2	NS
I	<i>Tachyerges ephippiatus</i>	Caparison Weevil				S3	1	22.4 ± 0.2	NS
I	<i>Chilocorus stigma</i>	Twice-stabbed Lady Beetle				S3	1	71.7 ± 0.2	NS
I	<i>Ipthiminius opacus</i>	Cloudy Darkling Beetle				S3	1	84.9 ± 0.01	NS
I	<i>Monochamus marmorator</i>	Balsam Fir Sawyer				S3	2	22.3 ± 0.2	NS
I	<i>Satyrus calanus falacer</i>	Falacer Hairstreak				S3	1	91.8 ± 2.5	NS
I	<i>Callophrys lanoraieensis</i>	Bog Elfin				S3	2	70.5 ± 0.2	NS
I	<i>Strymon melinus</i>	Gray Hairstreak				S3	2	69.7 ± 0.1	NS
I	<i>Phanogomphus descriptus</i>	Harpoon Clubtail				S3	16	68.2 ± 0.05	NS
I	<i>Ophiogomphus aspersus</i>	Brook Snaketail				S3	5	68.2 ± 0.05	NS
I	<i>Ophiogomphus mainensis</i>	Maine Snaketail				S3	14	56.2 ± 0.05	NS
I	<i>Ophiogomphus rupinsulensis</i>	Rusty Snaketail				S3	36	29.3 ± 0.05	NS
I	<i>Enallagma vernale</i>	Vernal Bluet				S3	4	63.5 ± 0.05	NS
I	<i>Polygonia interrogationis</i>	Question Mark				S3B	18	15.4 ± 0.1	NS
I	<i>Cecropia pylades</i>	Northern Cloudywing				S3S4	20	37.7 ± 0.05	NS
I	<i>Amblyscirtes hegona</i>	Pepper and Salt Skipper				S3S4	7	26.8 ± 0.68	NS
I	<i>Cupido comyntas</i>	Eastern Tailed Blue				S3S4	1	73.6 ± 0.1	NS
I	<i>Argynnis aphrodite winni</i>	Aphrodite Fritillary				S3S4	4	46.2 ± 100.0	NS
I	<i>Polygonia faunus</i>	Green Comma				S3S4	7	37.5 ± 0.05	NS
I	<i>Oeneis jutta ascerta</i>	Jutta Arctic				S3S4	4	41.6 ± 0.01	NS
I	<i>Aeshna clepsydra</i>	Mottled Darner				S3S4	3	48.0 ± 1.0	NS
I	<i>Boyeria grafiana</i>	Ocellated Darner				S3S4	9	29.4 ± 0.05	NS
I	<i>Gomphaeschna furcillata</i>	Harlequin Darner				S3S4	4	55.8 ± 0.05	NS
I	<i>Erythrodiplax berenice</i>	Seaside Dragonlet				S3S4	8	79.5 ± 0.2	NS
I	<i>Nannothemis bella</i>	Elfin Skimmer				S3S4	7	55.8 ± 0.05	NS
I	<i>Sympetrum danae</i>	Black Meadowhawk				S3S4	7	10.3 ± 1.0	NS
I	<i>Amphiagrion saucium</i>	Eastern Red Damsel				S3S4	4	84.3 ± 0.05	NS
I	<i>Icaricia saepiolus amica</i>	Greenish Blue				SH	1	91.9 ± 2.5	NS
I	<i>Polygonia gracilis</i>	Hoary Comma				SH	1	92.2 ± 2.5	NS
N	<i>Erioderma mollissimum</i>	Graceful Felt Lichen	Endangered	Endangered	Endangered	S1	21	47.2 ± 0.01	NS
N	<i>Erioderma pedicellatum (Atlantic pop.)</i>	Boreal Felt Lichen - Atlantic pop.	Endangered	Endangered	Endangered	S1	544	6.0 ± 0.1	NS
N	<i>Peltigera hydrothyria</i>	Eastern Waterfan	Threatened	Threatened	Threatened	S1	9	38.8 ± 0.01	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
N	<i>Pannaria lurida</i>	Wrinkled Shingle Lichen	Threatened	Threatened	Threatened	S2S3	104	75.7 ± 0.01	NS
N	<i>Anzia colpodes</i>	Black-foam Lichen	Threatened	Threatened	Threatened	S3	12	46.3 ± 0.5	NS
N	<i>Fuscopannaria leucosticta</i>	White-rimmed Shingle Lichen	Threatened			S3	5	69.7 ± 0.01	NS
N	<i>Heterodermia squamulosa</i>	Scaly Fringe Lichen	Threatened			S3	6	48.3 ± 0.01	NS
N	<i>Pectenia plumbea</i>	Blue Felt Lichen	Special Concern	Special Concern	Vulnerable	S3	912	2.7 ± 0.2	NS
N	<i>Sclerophora peronella</i> (Atlantic pop.)	Frosted Glass-whiskers (Atlantic population)	Special Concern	Special Concern		S3S4	24	13.0 ± 0.01	NS
N	<i>Pseudevernia cladonia</i>	Ghost Antler Lichen	Not At Risk			S2S3	8	11.8 ± 0.05	NS
N	<i>Fissidens exilis</i>	Pygmy Pocket Moss	Not At Risk			S3	6	43.0 ± 0.01	NS
N	<i>Chaenotheca servitii</i>	Flexuous Golden Stubble	Data Deficient			S1	1	79.3 ± 1.0	NS
N	<i>Cinclidium stygium</i>	Sooty Cupola Moss				S1	2	87.0 ± 0.01	NS
N	<i>Cyrtio-hypnum minutulum</i>	Tiny Cedar Moss				S1	1	79.2 ± 0.01	NS
N	<i>Cladonia brevis</i>	Short Peg Lichen				S1	1	83.7 ± 0.0	NS
N	<i>Scytinium schraderi</i>	Wrinkled Jellyskin Lichen				S1	1	99.8 ± 1.0	NS
N	<i>Lichina confinis</i>	Marine Seaweed Lichen				S1	1	91.1 ± 2.0	NS
N	<i>Polychidium muscicola</i>	Eyed Mossthorns Woollybear Lichen				S1	1	42.7 ± 0.05	NS
N	<i>Sticta limbata</i>	Powdered Moon Lichen				S1	2	66.7 ± 2.0	NS
N	<i>Hypogymnia hultenii</i>	Powdered Honeycomb Lichen				S1	18	6.2 ± 0.5	NS
N	<i>Jubula pennsylvanica</i>	a liverwort				S1?	3	35.5 ± 0.2	NS
N	<i>Conardia compacta</i>	Coast Creeping Moss				S1?	1	99.3 ± 2.0	NS
N	<i>Oligotrichum hercynicum</i>	Hercynian Hair Moss				S1?	1	96.2 ± 0.01	NS
N	<i>Lathagrium undulatum</i> var. <i>granulosum</i>	Granular Jelly Flakes Lichen				S1?	1	92.2 ± 1.0	NS
N	<i>Scytinium intermedium</i>	Forty-five Jellyskin Lichen				S1?	2	60.0 ± 4.0	NS
N	<i>Peltigera malacea</i>	Veinless Pelt Lichen				S1?	1	72.8 ± 0.01	NS
N	<i>Hamatocaulis vernicosus</i>	a Moss				S1S2	1	90.3 ± 0.01	NS
N	<i>Cladonia labradorica</i>	Labrador Lichen				S1S2	1	12.1 ± 0.05	NS
N	<i>Peltigera ponojensis</i>	Pale-bellied Pelt Lichen				S1S2	1	96.3 ± 0.5	NS
N	<i>Parmotrema reticulatum</i>	Netted Ruffle Lichen				S1S2	1	17.8 ± 0.5	NS
N	<i>Solorina spongiosa</i>	Fringed Chocolate Chip Lichen				S1S2	11	56.4 ± 0.2	NS
N	<i>Parmeliella parvula</i>	Poor-man's Shingles Lichen				S1S2	27	11.5 ± 0.1	NS
N	<i>Barbilophozia lycopodioides</i>	Greater Pawwort				S1S3	1	97.1 ± 0.01	NS
N	<i>Peltigera neckeri</i>	Black-saddle Pelt Lichen				S1S3	4	27.4 ± 0.01	NS
N	<i>Anacamptodon splachnoides</i>	a Moss				S2	1	44.0 ± 0.2	NS
N	<i>Scorpidium scorpioides</i>	Hooked Scorpion Moss				S2	4	81.5 ± 0.5	NS
N	<i>Sphagnum platyphyllum</i>	Flat-leaved Peat Moss				S2	4	80.8 ± 0.01	NS
N	<i>Sphagnum subnitens</i>	Lustrous Peat Moss				S2	2	92.5 ± 0.01	NS
N	<i>Scorpidium cossonii</i>	Cosson's Hook Moss				S2	6	81.1 ± 0.01	NS
N	<i>Nephroma resupinatum</i>	a lichen				S2	2	34.3 ± 0.5	NS
N	<i>Riccardia multifida</i>	Delicate Germanderwort				S2?	2	22.3 ± 0.2	NS
N	<i>Anomodon viticulosus</i>	a Moss				S2?	2	99.0 ± 1.0	NS
N	<i>Atrichum angustatum</i>	Lesser Smoothcap Moss				S2?	1	56.1 ± 3.0	NS
N	<i>Drepanocladus polygamus</i>	Polygamous Hook Moss				S2?	3	54.8 ± 0.01	NS
N	<i>Pseudocampyllum radicale</i>	Long-stalked Fine Wet Moss				S2?	1	82.6 ± 0.01	NS
N	<i>Platydictya jungermannioides</i>	False Willow Moss				S2?	5	59.9 ± 0.01	NS
N	<i>Tortella fragilis</i>	Fragile Twisted Moss				S2?	2	97.6 ± 0.01	NS
N	<i>Scorpidium revolvens</i>	Limprichtia Moss				S2S3	5	80.4 ± 0.01	NS
N	<i>Moelleropsis nebulosa</i>	Blue-gray Moss Shingle Lichen				S2S3	44	6.0 ± 0.01	NS
N	<i>Moelleropsis nebulosa</i> ssp. <i>frullaniae</i>	Blue-gray Moss Shingle Lichen				S2S3	1	51.7 ± 0.5	NS
N	<i>Ramalina thrausta</i>	Angelhair Ramalina Lichen				S2S3	9	11.9 ± 0.5	NS
N	<i>Collema leptaleum</i>	Crumpled Bat's Wing Lichen				S2S3	85	56.8 ± 0.2	NS
N	<i>Usnea hirta</i>	Bristly Beard Lichen				S2S3	1	95.5 ± 0.2	NS
N	<i>Usnea rubicunda</i>	Red Beard Lichen				S2S3	3	1.8 ± 0.01	NS
N	<i>Ahtiana aurescens</i>	Eastern Candlewax Lichen				S2S3	6	70.4 ± 0.81	NS
N	<i>Cetraria muricata</i>	Spiny Heath Lichen				S2S3	2	3.3 ± 1.7	NS
N	<i>Cladonia incrassata</i>	Powder-foot British Soldiers Lichen				S2S3	1	52.7 ± 0.05	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
N	<i>Scytinium tenuissimum</i>	Birdnest Jellyskin Lichen				S2S3	14	6.8 ± 0.01	NS
N	<i>Parmelia fertilis</i>	Fertile Shield Lichen				S2S3	10	51.7 ± 0.5	NS
N	<i>Parmeliopsis ambigua</i>	Green Starburst Lichen				S2S3	3	11.9 ± 0.5	NS
N	<i>Usnea mutabilis</i>	Bloody Beard Lichen				S2S3	1	82.0 ± 0.5	NS
N	<i>Fuscopannaria soorediata</i>	a Lichen				S2S3	14	1.4 ± 0.2	NS
N	<i>Stereocaulon condensatum</i>	Granular Soil Foam Lichen				S2S3	9	47.7 ± 0.2	NS
N	<i>Cladonia coccifera</i>	Eastern Boreal Pixie-cup Lichen				S2S3	3	20.0 ± 0.01	NS
N	<i>Fissidens taxifolius</i>	Yew-leaved Pocket Moss				S3	3	99.0 ± 0.01	NS
N	<i>Anomodon tristis</i>	a Moss				S3	1	57.6 ± 0.01	NS
N	<i>Sphagnum contortum</i>	Twisted Peat Moss				S3	7	80.8 ± 0.01	NS
N	<i>Tetraplodon angustatus</i>	Toothed-leaved Nitrogen Moss				S3	4	40.9 ± 0.01	NS
N	<i>Tetraplodon mnioides</i>	Entire-leaved Nitrogen Moss				S3	1	49.5 ± 0.01	NS
N	<i>Rostania occultata</i>	Crusted Tarpaper Lichen				S3	3	35.1 ± 0.5	NS
N	<i>Collema nigrescens</i>	Blistered Tarpaper Lichen				S3	4	61.6 ± 0.01	NS
N	<i>Solorina saccata</i>	Woodland Owl Lichen				S3	8	52.7 ± 0.05	NS
N	<i>Fuscopannaria ahlneri</i>	Roughened Shingle Lichen				S3	105	3.7 ± 0.01	NS
N	<i>Scytinium lichenoides</i>	Tattered Jellyskin Lichen				S3	16	51.3 ± 0.2	NS
N	<i>Leptogium milligranum</i>	Stretched Jellyskin Lichen				S3	1	72.2 ± 0.01	NS
N	<i>Nephroma bellum</i>	Naked Kidney Lichen				S3	6	56.9 ± 0.5	NS
N	<i>Placynthium nigrum</i>	Common Ink Lichen				S3	1	62.9 ± 10.0	NS
N	<i>Platismatia norvegica</i>	Oldgrowth Rag Lichen				S3	123	14.9 ± 0.01	NS
N	<i>Punctelia appalachensis</i>	Appalachian Speckleback Lichen				S3	1	77.6 ± 0.01	NS
N	<i>Ephebe lanata</i>	Waterside Rockshag Lichen				S3	1	36.4 ± 0.01	NS
N	<i>Phaeophyscia pusilloides</i>	Pompom-tipped Shadow Lichen				S3	5	61.7 ± 0.2	NS
N	<i>Peltigera collina</i>	Tree Pelt Lichen				S3	144	1.1 ± 4.0	NS
N	<i>Sphagnum lindbergii</i>	Lindberg's Peat Moss				S3?	4	34.3 ± 0.01	NS
N	<i>Sphagnum riparium</i>	Streamside Peat Moss				S3?	2	92.9 ± 0.01	NS
N	<i>Cladonia stygia</i>	Black-footed Reindeer Lichen				S3?	6	47.0 ± 0.05	NS
N	<i>Dicranum leioneuron</i>	a Dicranum Moss				S3S4	1	55.5 ± 0.01	NS
N	<i>Encalypta ciliata</i>	Fringed Extinguisher Moss				S3S4	1	28.7 ± 2.5	NS
N	<i>Encalypta procera</i>	Slender Extinguisher Moss				S3S4	11	57.2 ± 0.01	NS
N	<i>Splachnum ampullaceum</i>	Cruet Dung Moss				S3S4	2	68.6 ± 0.01	NS
N	<i>Schistidium agassizii</i>	Elf Bloom Moss				S3S4	1	29.4 ± 3.0	NS
N	<i>Enchylium tenax</i>	Soil Tarpaper Lichen				S3S4	5	57.8 ± 0.01	NS
N	<i>Sticta fuliginosa</i>	Peppered Moon Lichen				S3S4	34	12.9 ± 0.01	NS
N	<i>Arctoparmelia incurva</i>	Finger Ring Lichen				S3S4	15	26.2 ± 0.01	NS
N	<i>Scytinium teretiusculum</i>	Curly Jellyskin Lichen				S3S4	4	60.0 ± 0.01	NS
N	<i>Leptogium acadense</i>	Acadian Jellyskin Lichen				S3S4	34	13.9 ± 0.01	NS
N	<i>Scytinium subtile</i>	Appressed Jellyskin Lichen				S3S4	12	57.7 ± 0.01	NS
N	<i>Cladonia floerkeana</i>	Gritty British Soldiers Lichen				S3S4	1	84.1 ± 0.01	NS
N	<i>Vahlia leucophaea</i>	Shelter Shingle Lichen				S3S4	6	62.1 ± 0.2	NS
N	<i>Heterodermia speciosa</i>	Powdered Fringe Lichen				S3S4	21	31.1 ± 0.2	NS
N	<i>Leptogium corticola</i>	Blistered Jellyskin Lichen				S3S4	36	47.9 ± 0.01	NS
N	<i>Melanohalea olivacea</i>	Spotted Camouflage Lichen				S3S4	1	76.6 ± 0.2	NS
N	<i>Parmeliopsis hyperopta</i>	Gray Starburst Lichen				S3S4	1	17.8 ± 0.5	NS
N	<i>Parmotrema perlatum</i>	Powdered Ruffle Lichen				S3S4	1	48.3 ± 0.01	NS
N	<i>Peltigera hymenina</i>	Cloudy Pelt Lichen				S3S4	3	65.4 ± 0.5	NS
N	<i>Sphaerophorus fragilis</i>	Fragile Coral Lichen				S3S4	1	50.4 ± 0.2	NS
N	<i>Sclerophora peronella</i>	Frosted Glass-whiskers Lichen				S3S4	3	42.7 ± 0.01	NS
N	<i>Coccocarpia palmicola</i>	Salted Shell Lichen				S3S4	860	3.3 ± 0.01	NS
N	<i>Physcia tenella</i>	Fringed Rosette Lichen				S3S4	1	47.8 ± 3.5	NS
N	<i>Anaptychia palmulata</i>	Shaggy Fringed Lichen				S3S4	108	11.8 ± 0.01	NS
N	<i>Evernia prunastri</i>	Valley Oakmoss Lichen				S3S4	8	43.0 ± 0.5	NS
N	<i>Heterodermia neglecta</i>	Fringe Lichen				S3S4	77	16.5 ± 0.01	NS
P	<i>Fraxinus nigra</i>	Black Ash	Threatened		Threatened	S1S2	295	34.6 ± 0.0	NS
P	<i>Juncus caesariensis</i>	New Jersey Rush	Special Concern	Special Concern	Vulnerable	S3	80	81.5 ± 0.1	NS
P	<i>Floerkea proserpinacoides</i>	False Mermaidweed	Not At Risk			S2S3	9	45.1 ± 1.0	NS
P	<i>Arnica lonchophylla</i>	Northern Arnica				S1	1	67.0 ± 7.07	NS

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P	<i>Betula minor</i>	Dwarf White Birch				S1	1	19.2 ± 0.01	NS
P	<i>Cardamine dentata</i>	Toothed Bittercress				S1	1	79.8 ± 0.5	NS
P	<i>Cochlearia tridactylites</i>	Limestone Scurvy-grass				S1	12	26.2 ± 0.1	NS
P	<i>Stellaria crassifolia</i>	Fleshy Stitchwort				S1	1	87.7 ± 2.0	NS
P	<i>Hudsonia tomentosa</i>	Woolly Beach-heath				S1	7	52.1 ± 1.7	NS
P	<i>Bistorta vivipara</i>	Alpine Bistort				S1	1	75.6 ± 1.0	NS
P	<i>Montia fontana</i>	Water Blinks				S1	2	50.1 ± 3.0	NS
P	<i>Agalinis tenuifolia</i>	Slender Agalinis				S1	1	92.7 ± 0.01	NS
P	<i>Scrophularia lanceolata</i>	Lance-leaved Figwort				S1	1	27.0 ± 1.5	NS
P	<i>Carex alopecoidea</i>	Foxtail Sedge				S1	4	50.4 ± 0.2	NS
P	<i>Carex granularis</i>	Limestone Meadow Sedge				S1	21	82.8 ± 0.01	NS
P	<i>Carex plantaginea</i>	Plantain-Leaved Sedge				S1	2	99.0 ± 0.2	NS
P	<i>Carex tenuiflora</i>	Sparse-Flowered Sedge				S1	2	81.3 ± 0.5	NS
P	<i>Carex tinctoria</i>	Tinged Sedge				S1	2	50.4 ± 0.2	NS
P	<i>Carex viridula</i> var. <i>saxilittoralis</i>	Greenish Sedge				S1	2	92.8 ± 0.3	NS
P	<i>Carex viridula</i> ssp. <i>brachyrrhyncha</i>	Greenish Sedge				S1	1	97.6 ± 0.01	NS
P	<i>Carex viridula</i> var. <i>elatior</i>	Greenish Sedge				S1	24	79.6 ± 0.01	NS
P	<i>Carex grisea</i>	Inflated Narrow-leaved Sedge				S1	6	50.4 ± 0.01	NS
P	<i>Cyperus lupulinus</i> ssp. <i>macilentus</i>	Hop Flatsedge				S1	18	51.5 ± 0.01	NS
P	<i>Eleocharis erythropoda</i>	Red-stemmed Spikerush				S1	2	91.4 ± 0.01	NS
P	<i>Scirpus atrovirens</i>	Dark-green Bulrush				S1	2	97.5 ± 0.01	NS
P	<i>Iris prismatica</i>	Slender Blue Flag				S1	2	35.4 ± 7.07	NS
P	<i>Malaxis monophyllos</i> var. <i>brachypoda</i>	North American White Adder's-mouth				S1	1	39.3 ± 7.07	NS
P	<i>Calamagrostis stricta</i> ssp. <i>inexpansa</i>	Slim-stemmed Reed Grass				S1	3	72.2 ± 0.01	NS
P	<i>Elymus hystrix</i>	Spreading Wild Rye				S1	1	80.7 ± 1.6	NS
P	<i>Potamogeton nodosus</i>	Long-leaved Pondweed				S1	1	37.9 ± 5.0	NS
P	<i>Sparganium angustifolium</i>	Branching Bur-Reed				S1	1	49.8 ± 1.0	NS
P	<i>Equisetum palustre</i>	Marsh Horsetail				S1	8	94.4 ± 0.01	NS
P	<i>Botrychium ascendens</i>	Upswept Moonwort				S1	1	98.7 ± 0.2	NS
P	<i>Solidago hispida</i>	Hairy Goldenrod				S1?	1	74.3 ± 7.07	NS
P	<i>Allium schoenoprasum</i>	Wild Chives				S1?	1	95.0 ± 0.2	NS
P	<i>Allium schoenoprasum</i> var. <i>sibiricum</i>	Wild Chives				S1?	1	60.1 ± 7.07	NS
P	<i>Sanicula odorata</i>	Clustered Sanicle				S1S2	3	73.5 ± 0.5	NS
P	<i>Ageratina altissima</i>	White Snakeroot				S1S2	2	54.6 ± 7.07	NS
P	<i>Cornus suecica</i>	Swedish Bunchberry				S1S2	2	52.1 ± 6.0	NS
P	<i>Anemone virginiana</i> var. <i>alba</i>	Virginia Anemone				S1S2	6	95.1 ± 0.1	NS
P	<i>Parnassia parviflora</i>	Small-flowered Grass-of-Parnassus				S1S2	11	76.0 ± 1.5	NS
P	<i>Carex haydenii</i>	Hayden's Sedge				S1S2	3	63.7 ± 5.0	NS
P	<i>Platanthera huronensis</i>	Fragrant Green Orchid				S1S2	5	58.9 ± 10.0	NS
P	<i>Selaginella selaginoides</i>	Low Spikemoss				S1S2	2	79.7 ± 0.8	NS
P	<i>Carex vacillans</i>	Estuarine Sedge				S1S3	4	50.4 ± 0.5	NS
P	<i>Zizia aurea</i>	Golden Alexanders				S2	8	33.9 ± 0.5	NS
P	<i>Rudbeckia laciniata</i>	Cut-Leaved Coneflower				S2	2	39.0 ± 0.1	NS
P	<i>Desmodium canadense</i>	Canada Tick-trefoil				S2	10	90.2 ± 0.01	NS
P	<i>Anemone canadense</i>	Canada Anemone				S2	2	53.5 ± 3.0	NS
P	<i>Comandra umbellata</i>	Bastard's Toadflax				S2	41	51.1 ± 0.2	NS
P	<i>Carex gynocrates</i>	Northern Bog Sedge				S2	11	83.3 ± 0.01	NS
P	<i>Carex pellita</i>	Woolly Sedge				S2	7	90.2 ± 0.01	NS
P	<i>Carex livida</i>	Livid Sedge				S2	23	48.7 ± 0.01	NS
P	<i>Juncus greenii</i>	Greene's Rush				S2	1	52.1 ± 1.5	NS
P	<i>Juncus alpinoarticulatus</i> ssp.	Northern Green Rush				S2	8	49.5 ± 5.0	NS

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P	<i>americanus</i>								
P	<i>Luzula spicata</i>	Spiked Woodrush				S2	1	50.7 ± 0.01	NS
P	<i>Lilium canadense</i>	Canada Lily				S2	54	29.3 ± 1.2	NS
P	<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	Yellow Lady's-slipper				S2	29	50.1 ± 0.2	NS
P	<i>Cypripedium parviflorum</i> var. <i>makasin</i>	Small Yellow Lady's-Slipper				S2	2	37.3 ± 0.01	NS
P	<i>Cypripedium reginae</i>	Showy Lady's-Slipper				S2	175	53.0 ± 0.01	NS
P	<i>Platanthera flava</i> var. <i>herbiola</i>	Pale Green Orchid				S2	1	29.0 ± 1.5	NS
P	<i>Platanthera macrophylla</i>	Large Round-Leaved Orchid				S2	6	37.3 ± 1.67	NS
P	<i>Bromus latiglumis</i>	Broad-Glumed Brome				S2	11	60.2 ± 0.01	NS
P	<i>Cinna arundinacea</i>	Sweet Wood Reed Grass				S2	24	60.1 ± 0.01	NS
P	<i>Elymus wiegandii</i>	Wiegand's Wild Rye				S2	6	63.3 ± 0.01	NS
P	<i>Sparganium hyperboreum</i>	Northern Burreed				S2	3	4.1 ± 0.1	NS
P	<i>Cryptogramma stelleri</i>	Steller's Rockbrake				S2	17	96.2 ± 0.01	NS
P	<i>Cuscuta cephalanthi</i>	Buttonbush Dodder				S2?	8	50.7 ± 0.01	NS
P	<i>Crataegus submollis</i>	Quebec Hawthorn				S2?	2	65.9 ± 7.07	NS
P	<i>Thuja occidentalis</i>	Eastern White Cedar			Vulnerable	S2S3	5	50.2 ± 0.2	NS
P	<i>Osmorhiza longistylis</i>	Smooth Sweet Cicely				S2S3	16	42.3 ± 0.01	NS
P	<i>Bidens hyperborea</i>	Estuary Beggarticks				S2S3	1	55.4 ± 1.0	NS
P	<i>Erigeron philadelphicus</i>	Philadelphia Fleabane				S2S3	10	59.7 ± 7.07	NS
P	<i>Impatiens pallida</i>	Pale Jewelweed				S2S3	7	30.7 ± 7.07	NS
P	<i>Caulophyllum thalictroides</i>	Blue Cohosh				S2S3	29	42.2 ± 0.01	NS
P	<i>Draba arabisans</i>	Rock Whitlow-Grass				S2S3	3	97.1 ± 1.6	NS
P	<i>Stellaria humifusa</i>	Saltmarsh Starwort				S2S3	4	37.8 ± 0.1	NS
P	<i>Oxybasis rubra</i>	Red Goosefoot				S2S3	2	63.7 ± 7.07	NS
P	<i>Hypericum x dissimulatum</i>	Disguised St. John's-wort				S2S3	1	19.3 ± 1.0	NS
P	<i>Empetrum atropurpureum</i>	Purple Crowberry				S2S3	1	50.4 ± 3.0	NS
P	<i>Euphorbia polygonifolia</i>	Seaside Spurge				S2S3	13	51.6 ± 0.01	NS
P	<i>Myriophyllum farwellii</i>	Farwell's Water Milfoil				S2S3	4	25.6 ± 0.25	NS
P	<i>Hedeoma pulegioides</i>	American False Pennyroyal				S2S3	2	74.6 ± 5.0	NS
P	<i>Polygonum aviculare</i> ssp. <i>buxiforme</i>	Box Knotweed				S2S3	1	92.4 ± 0.2	NS
P	<i>Polygonum oxyspermum</i> ssp. <i>raii</i>	Ray's Knotweed				S2S3	4	21.1 ± 1.0	NS
P	<i>Rumex triangulivalvis</i>	Triangular-valve Dock				S2S3	4	59.8 ± 6.0	NS
P	<i>Anemone quinquefolia</i>	Wood Anemone				S2S3	6	29.5 ± 0.4	NS
P	<i>Caltha palustris</i>	Yellow Marsh Marigold				S2S3	3	55.3 ± 0.01	NS
P	<i>Amelanchier fernaldii</i>	Fernald's Serviceberry				S2S3	1	19.2 ± 1.0	NS
P	<i>Potentilla canadensis</i>	Canada Cinquefoil				S2S3	1	50.7 ± 2.6	NS
P	<i>Salix pellita</i>	Satiny Willow				S2S3	1	46.3 ± 1.6	NS
P	<i>Tiarella stolonifera</i>	Stoloniferous Foamflower				S2S3	2	53.0 ± 3.81	NS
P	<i>Agalinis purpurea</i> var. <i>parviflora</i>	Small-flowered Purple False Foxglove				S2S3	8	1.6 ± 0.2	NS
P	<i>Carex adusta</i>	Lesser Brown Sedge				S2S3	2	43.4 ± 5.0	NS
P	<i>Carex hystericina</i>	Porcupine Sedge				S2S3	29	50.8 ± 0.5	NS
P	<i>Eleocharis ovata</i>	Ovate Spikerush				S2S3	1	17.6 ± 0.01	NS
P	<i>Scirpus pedicellatus</i>	Stalked Bulrush				S2S3	3	60.7 ± 0.01	NS
P	<i>Spiranthes casei</i> var. <i>novaescotiae</i>	Case's Ladies'-Tresses				S2S3	3	29.9 ± 1.89	NS
P	<i>Spiranthes lucida</i>	Shining Ladies'-Tresses				S2S3	32	79.0 ± 1.65	NS
P	<i>Potamogeton friesii</i>	Fries' Pondweed				S2S3	5	64.3 ± 0.01	NS
P	<i>Cystopteris laurentiana</i>	Laurentian Bladder Fern				S2S3	5	95.8 ± 10.0	NS
P	<i>Woodsia glabella</i>	Smooth Cliff Fern				S2S3	2	95.8 ± 7.07	NS
P	<i>Botrychium lanceolatum</i> ssp. <i>angustisegmentum</i>	Narrow Triangle Moonwort				S2S3	5	80.8 ± 3.0	NS
P	<i>Botrychium simplex</i>	Least Moonwort				S2S3	3	76.6 ± 1.0	NS

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P	<i>Angelica atropurpurea</i>	Purple-stemmed Angelica				S3	12	59.2 ± 0.01	NS
P	<i>Senecio pseudoarnica</i>	Seabeach Ragwort				S3	26	12.3 ± 0.1	NS
P	<i>Symphyotrichum boreale</i>	Boreal Aster				S3	62	79.6 ± 0.01	NS
P	<i>Symphyotrichum ciliolatum</i>	Fringed Blue Aster				S3	3	21.8 ± 0.01	NS
P	<i>Betula michauxii</i>	Michaux's Dwarf Birch				S3	19	2.5 ± 0.01	NS
P	<i>Betula pumila</i>	Bog Birch				S3	1	82.1 ± 0.01	NS
P	<i>Cardamine parviflora</i>	Small-flowered Bittercress				S3	2	96.8 ± 0.01	NS
P	<i>Palustricodon aparinoides</i>	Marsh Bellflower				S3	10	37.1 ± 0.5	NS
P	<i>Lobelia kalmii</i>	Brook Lobelia				S3	73	76.0 ± 0.01	NS
P	<i>Sagina nodosa</i>	Knotted Pearlwort				S3	4	38.1 ± 1.5	NS
P	<i>Sagina nodosa ssp. borealis</i>	Knotted Pearlwort				S3	2	91.4 ± 0.01	NS
P	<i>Stellaria longifolia</i>	Long-leaved Starwort				S3	1	63.7 ± 0.01	NS
P	<i>Triosteum aurantiacum</i>	Orange-fruited Tinker's Weed				S3	163	42.1 ± 0.01	NS
P	<i>Crassula aquatica</i>	Water Pygmyweed				S3	2	74.2 ± 7.07	NS
P	<i>Halenia deflexa</i>	Spurred Gentian				S3	23	31.2 ± 1.0	NS
P	<i>Geranium bicknellii</i>	Bicknell's Crane's-bill				S3	1	50.2 ± 0.2	NS
P	<i>Myriophyllum verticillatum</i>	Whorled Water Milfoil				S3	1	79.8 ± 0.01	NS
P	<i>Utricularia resupinata</i>	Inverted Bladderwort				S3	1	97.6 ± 0.8	NS
P	<i>Epilobium densum</i>	Downy Willowherb				S3	8	37.0 ± 0.5	NS
P	<i>Polygala sanguinea</i>	Blood Milkwort				S3	12	7.9 ± 0.01	NS
P	<i>Persicaria arifolia</i>	Halberd-leaved Tearthumb				S3	8	20.4 ± 0.01	NS
P	<i>Plantago rugelii</i>	Rugel's Plantain				S3	2	92.7 ± 0.01	NS
P	<i>Samolus parviflorus</i>	Seaside Brookweed				S3	14	50.7 ± 0.01	NS
P	<i>Pyrola minor</i>	Lesser Pyrola				S3	1	96.5 ± 2.0	NS
P	<i>Anemone virginiana</i>	Virginia Anemone				S3	31	51.4 ± 0.01	NS
P	<i>Galium kamtschaticum</i>	Northern Wild Licorice				S3	5	91.2 ± 0.2	NS
P	<i>Galium labradoricum</i>	Labrador Bedstraw				S3	45	79.6 ± 0.01	NS
P	<i>Salix pedicellaris</i>	Bog Willow				S3	6	81.5 ± 0.01	NS
P	<i>Saxifraga paniculata ssp. laestadii</i>	Laestadius' Saxifrage				S3	1	92.5 ± 7.07	NS
P	<i>Lindernia dubia</i>	Yellow-seeded False Pimperel				S3	11	51.6 ± 0.01	NS
P	<i>Laportea canadensis</i>	Canada Wood Nettle				S3	16	42.1 ± 3.0	NS
P	<i>Pilea pumila</i>	Dwarf Clearweed				S3	1	76.5 ± 6.0	NS
P	<i>Viola nephrophylla</i>	Northern Bog Violet				S3	6	65.0 ± 0.01	NS
P	<i>Carex bebbii</i>	Bebb's Sedge				S3	16	45.8 ± 7.07	NS
P	<i>Carex castanea</i>	Chestnut Sedge				S3	15	79.7 ± 0.01	NS
P	<i>Carex cryptolepis</i>	Hidden-scaled Sedge				S3	7	45.8 ± 1.5	NS
P	<i>Carex eburnea</i>	Bristle-leaved Sedge				S3	32	55.6 ± 5.0	NS
P	<i>Carex hirtifolia</i>	Pubescent Sedge				S3	20	42.2 ± 0.01	NS
P	<i>Carex lupulina</i>	Hop Sedge				S3	13	51.6 ± 6.0	NS
P	<i>Carex rosea</i>	Rosy Sedge				S3	5	37.2 ± 4.0	NS
P	<i>Carex tenera</i>	Tender Sedge				S3	3	49.9 ± 3.5	NS
P	<i>Carex tribuloides</i>	Blunt Broom Sedge				S3	11	16.9 ± 0.01	NS
P	<i>Carex atratiformis</i>	Scabrous Black Sedge				S3	2	95.8 ± 7.07	NS
P	<i>Eleocharis flavescens var. olivacea</i>	Bright-green Spikerush				S3	3	46.3 ± 0.1	NS
P	<i>Eleocharis quinqueflora</i>	Few-flowered Spikerush				S3	14	83.6 ± 0.01	NS
P	<i>Eriophorum gracile</i>	Slender Cottongrass				S3	8	5.6 ± 1.0	NS
P	<i>Schoenoplectus americanus</i>	Olney's Bulrush				S3	1	50.7 ± 0.01	NS
P	<i>Juncus stygius ssp. americanus</i>	Moor Rush				S3	27	79.6 ± 1.0	NS
P	<i>Oreojuncus trifidus</i>	Highland Rush				S3	1	99.6 ± 0.75	NS
P	<i>Cypripedium parviflorum</i>	Yellow Lady's-slipper				S3	74	37.2 ± 0.01	NS
P	<i>Neottia bifolia</i>	Southern Twayblade				S3	47	11.8 ± 0.01	NS
P	<i>Platanthera grandiflora</i>	Large Purple Fringed Orchid				S3	55	19.4 ± 10.0	NS
P	<i>Platanthera hookeri</i>	Hooker's Orchid				S3	3	45.8 ± 0.1	NS
P	<i>Dichanthelium linearifolium</i>	Narrow-leaved Panic Grass				S3	1	92.8 ± 7.07	NS
P	<i>Poa glauca</i>	Glaucous Blue Grass				S3	8	96.2 ± 0.01	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	<i>Stuckenia filiformis</i>	Thread-leaved Pondweed				S3	13	59.8 ± 0.01	NS
P	<i>Potamogeton praelongus</i>	White-stemmed Pondweed				S3	11	30.7 ± 10.0	NS
P	<i>Potamogeton richardsonii</i>	Richardson's Pondweed				S3	5	35.8 ± 0.6	NS
P	<i>Potamogeton zosteriformis</i>	Flat-stemmed Pondweed				S3	1	99.2 ± 7.07	NS
P	<i>Asplenium viride</i>	Green Spleenwort				S3	21	61.5 ± 0.2	NS
P	<i>Dryopteris fragrans</i>	Fragrant Wood Fern				S3	1	42.0 ± 7.07	NS
P	<i>Polystichum lonchitis</i>	Northern Holly Fern				S3	5	77.8 ± 5.0	NS
P	<i>Sceptridium dissectum</i>	Dissected Moonwort				S3	3	51.1 ± 1.0	NS
P	<i>Polypodium appalachianum</i>	Appalachian Polypody				S3	4	26.0 ± 0.01	NS
P	<i>Persicaria amphibia</i> var. <i>emersa</i>	Long-root Smartweed				S3?	1	51.5 ± 0.01	NS
P	<i>Spiranthes ochroleuca</i>	Yellow Ladies'-tresses				S3?	49	1.7 ± 0.2	NS
P	<i>Diphasiastrum x sabinifolium</i>	Savin-leaved Ground-cedar				S3?	3	59.6 ± 5.0	NS
P	<i>Bidens vulgata</i>	Tall Beggarticks				S3S4	1	82.1 ± 0.01	NS
P	<i>Erigeron hyssopifolius</i>	Hyssop-leaved Fleabane				S3S4	25	51.3 ± 0.2	NS
P	<i>Hieracium paniculatum</i>	Panicled Hawkweed				S3S4	1	73.0 ± 0.2	NS
P	<i>Bidens beckii</i>	Water Beggarticks				S3S4	6	45.6 ± 0.5	NS
P	<i>Packera paupercula</i>	Balsam Groundsel				S3S4	73	51.4 ± 0.01	NS
P	<i>Atriplex glabriuscula</i> var. <i>franktonii</i>	Frankton's Saltbush				S3S4	1	45.1 ± 0.01	NS
P	<i>Shepherdia canadensis</i>	Soapberry				S3S4	8	94.0 ± 0.01	NS
P	<i>Vaccinium boreale</i>	Northern Blueberry				S3S4	8	19.2 ± 1.0	NS
P	<i>Vaccinium cespitosum</i>	Dwarf Bilberry				S3S4	38	29.2 ± 0.01	NS
P	<i>Vaccinium corymbosum</i>	Highbush Blueberry				S3S4	1	43.2 ± 0.2	NS
P	<i>Fagus grandifolia</i>	American Beech				S3S4	273	9.5 ± 0.2	NS
P	<i>Bartonia virginica</i>	Yellow Bartonia				S3S4	1	77.0 ± 0.1	NS
P	<i>Proserpinaca pectinata</i>	Comb-leaved Mermaidweed				S3S4	2	90.0 ± 1.0	NS
P	<i>Decodon verticillatus</i>	Swamp Loosestrife				S3S4	1	81.6 ± 7.07	NS
P	<i>Nuphar microphylla</i>	Small Yellow Pond-lily				S3S4	1	97.9 ± 2.7	NS
P	<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed				S3S4	16	50.5 ± 0.01	NS
P	<i>Fallopia scandens</i>	Climbing False Buckwheat				S3S4	29	31.4 ± 0.01	NS
P	<i>Rumex pallidus</i>	Seabeach Dock				S3S4	1	56.4 ± 0.01	NS
P	<i>Pyrola asarifolia</i>	Pink Pyrola				S3S4	5	55.3 ± 0.2	NS
P	<i>Endotropis alnifolia</i>	Alder-leaved Buckthorn				S3S4	372	53.6 ± 0.01	NS
P	<i>Amelanchier spicata</i>	Running Serviceberry				S3S4	5	14.0 ± 0.01	NS
P	<i>Fragaria vesca</i> ssp. <i>americana</i>	Woodland Strawberry				S3S4	26	57.1 ± 0.01	NS
P	<i>Fragaria vesca</i>	Woodland Strawberry				S3S4	1	55.5 ± 1.53	NS
P	<i>Galium aparine</i>	Common Bedstraw				S3S4	15	51.1 ± 0.01	NS
P	<i>Geocaulon lividum</i>	Northern Comandra				S3S4	81	2.5 ± 0.01	NS
P	<i>Limosella australis</i>	Southern Mudwort				S3S4	3	80.2 ± 5.0	NS
P	<i>Ulmus americana</i>	White Elm				S3S4	52	36.1 ± 0.01	NS
P	<i>Verbena hastata</i>	Blue Vervain				S3S4	52	42.2 ± 0.01	NS
P	<i>Viola selkirkii</i>	Great-Spurred Violet				S3S4	1	48.4 ± 1.0	NS
P	<i>Triglochin gaspensis</i>	Gaspé Arrowgrass				S3S4	23	51.7 ± 0.01	NS
P	<i>Juncus acuminatus</i>	Sharp-Fruit Rush				S3S4	3	53.5 ± 0.01	NS
P	<i>Juncus subcaudatus</i>	Woods-Rush				S3S4	8	11.9 ± 0.01	NS
P	<i>Luzula parviflora</i> ssp. <i>melanocarpa</i>	Black-fruited Woodrush				S3S4	3	48.3 ± 0.01	NS
P	<i>Goodyera repens</i>	Lesser Rattlesnake-plantain				S3S4	9	64.9 ± 0.01	NS
P	<i>Liparis loeselii</i>	Loesel's Twayblade				S3S4	9	39.3 ± 0.01	NS
P	<i>Platanthera obtusata</i>	Blunt-leaved Orchid				S3S4	6	14.1 ± 0.2	NS
P	<i>Platanthera orbiculata</i>	Small Round-leaved Orchid				S3S4	4	37.4 ± 0.01	NS
P	<i>Alopecurus aequalis</i>	Short-awned Foxtail				S3S4	5	57.7 ± 1.0	NS
P	<i>Dichanthelium clandestinum</i>	Deer-tongue Panic Grass				S3S4	97	29.4 ± 0.01	NS
P	<i>Panicum philadelphicum</i>	Philadelphia Panicgrass				S3S4	1	76.1 ± 0.01	NS
P	<i>Koeleria spicata</i>	Narrow False Oats				S3S4	1	90.3 ± 0.01	NS
P	<i>Asplenium trichomanes</i>	Maidenhair Spleenwort				S3S4	4	45.8 ± 0.2	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	<i>Equisetum pratense</i>	Meadow Horsetail				S3S4	14	78.7 ± 0.01	NS
P	<i>Diphasiastrum complanatum</i>	Northern Ground-cedar				S3S4	3	53.9 ± 0.2	NS
P	<i>Diphasiastrum sitchense</i>	Sitka Ground-cedar				S3S4	21	37.4 ± 1.0	NS
P	<i>Hyperzia appressa</i>	Mountain Firmoss				S3S4	1	92.5 ± 1.0	NS
P	<i>Sceptridium multifidum</i>	Leathery Moonwort				S3S4	4	13.0 ± 0.2	NS
P	<i>Botrychium matricariifolium</i>	Daisy-leaved Moonwort				S3S4	3	64.3 ± 10.0	NS
P	<i>Viola canadensis</i>	Canada Violet				SH	1	97.1 ± 0.25	NS

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The recipient of these data shall acknowledge the AC CDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

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22	Benjamin, L.K. 2011. NSDNR fieldwork & consultant reports 1997, 2009-10. Nova Scotia Dept Natural Resources, 85 recs.
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22	Porter, C.J.M. 2014. Field work data 2007-2014. Nova Scotia Nature Trust, 96 recs.
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19	Chapman, C.J. 2018. Atlantic Canada Conservation Data Centre botanical fieldwork 2018. Atlantic Canada Conservation Data Centre, 11171 recs.
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18	Bell, G. 2018. Moose, bat and bird records from Goldboro LNG Project, NS, Environmental Assessment. Amec Foster Wheeler.
18	Neily, T.H. 2019. Tom Neily NS Bryophyte records (2009-2013). T.H. Neily, Atlantic Canada Conservation Data Centre, 1029 specimen records.
17	Adams, J. & Herman, T.B. 1998. Thesis, Unpublished map of <i>C. insculpta</i> sightings. Acadia University, Wolfville NS, 88 recs.
17	Blaney, C.S.; Spicer, C.D. 2001. Fieldwork 2001. Atlantic Canada Conservation Data Centre. Sackville NB, 981 recs.
16	Rock, J. 2020. Atlantic Canada Piping Plover field surveys: Nesting pairs by beach, 2018-2020. Environment and Climate Change Canada - Canadian Wildlife Service, 216 records.
15	Anderson, Frances; Neily, Tom. 2014. A Reconnaissance Level Survey of Cryptogams in Selected Karst Topography in Cape Breton. Mersey Tobeatic Research Institute.
15	Brunelle, P.-M. (compiler). 2009. ADIP/MDDS Odonata Database: data to 2006 inclusive. Atlantic Dragonfly Inventory Program (ADIP), 24200 recs.
15	iNaturalist. 2020. iNaturalist butterfly records selected for the Maritimes Butterfly Atlas. iNaturalist.
15	Richardson, Leif. 2018. Maritimes <i>Bombus</i> records from various sources. Richardson, Leif.
14	Birds Canada. 2022. Maritimes Swiftwatch project data for 2022. Pers. comm., 155 records.
14	Chapman, C.N. (Cody). 2020. Nova Scotia Black Ash (<i>Fraxinus nigra</i>) field observations by Confederacy of Mainland Mi'kmaq. Forestry Program, Confederacy of Mainland Mi'kmaq.
14	Churchill, J.L. 2019. Atlantic Canada Conservation Data Centre Fieldwork 2019. Atlantic Canada Conservation Data Centre.
14	Hill, N.M. 1994. Status report on the Long's bulrush <i>Scirpus longii</i> in Canada. Committee on the Status of Endangered Wildlife in Canada, 7 recs.
14	Taylor, B.R., and Tam, J.C. 2012. Local distribution of the rare plant <i>Triosteum aurantiacum</i> in northeastern Nova Scotia, Canada. <i>Rhodora</i> , 114(960): 366-382.
12	anon. 2001. S. H. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 76 recs.
12	Mazerolle, D.M. 2017. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
12	Williams, M. Cape Breton University Digital Herbarium. Cape Breton University Digital Herbarium. 2013.
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11	Downes, C. 1998-2000. Breeding Bird Survey Data. Canadian Wildlife Service, Ottawa, 111 recs.
11	Knapton, R. & Power, T.; Williams, M. 2001. SAR Inventory: Fortress Louisbourg NP. Parks Canada, Atlantic, SARINV01-13. 157 recs.
11	Korol, Burke. 2023. Field data - 2023. Atlantic Canada Conservation Data Centre.
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10	e-Butterfly. 2016. Export of Maritimes records and photos. Maxim Larrivee, Sambo Zhang (ed.) e-butterfly.org.
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10	Newell, R.E. 2004. Assessment and update status report on the New Jersey Rush (<i>Juncus caesariensis</i>) in Canada. Committee on the Status of Endangered Wildlife in Canada, 15 recs.
10	Power, T.; Gilhen, J. 2018. Status, distribution, and nesting ecology of Snapping Turtle (<i>Chelydra serpentina</i>) on Cape Breton Island, Nova Scotia, Canada. <i>The Canadian Field Naturalist</i> , 132(1): 8-17.
10	Robinson, S.L. 2015. 2014 field data.
10	White, S. 2018. Notable species sightings, 2016-2017. East Coast Aquatics.
9	Bryson, I. 2020. Nova Scotia and Newfoundland rare species observations, 2018-2020. Nova Scotia Environment.
9	Cameron, R.P. 2012. Rob Cameron 2012 vascular plant data. NS Department of Environment, 30 recs.
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9	Gilhen, J. 1984. Amphibians & Reptiles of Nova Scotia, 1st Ed. Nova Scotia Museum, 164pp.
9	Unama'ki Institute of Natural Resources. 2022. Wisqoq (Black Ash) records in Port Hood, NS. pers. comm., 9 records.
9	Whittam, R.M. 1999. Status Report on the Roseate Tern (update) in Canada. Committee on the Status of Endangered Wildlife in Canada, 36 recs.
8	Archibald, D.R. 2003. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 213 recs.
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8	Chaput, G. 2002. Atlantic Salmon: Maritime Provinces Overview for 2001. Dept of Fisheries & Oceans, Atlantic Region, Science Stock Status Report D3-14. 39 recs.
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8	Nickerson, Shayla. 2020. UINR Field Observations 2020-2021. Unama'ki Institute of Natural Resources.
8	Oldham, M.J. 2000. Oldham database records from Maritime provinces. Oldham, M.J.; ONHIC, 487 recs.
7	Blaney, C.S. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre. Sackville NB, 1042 recs.
7	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2014.
7	Neily, T.H. & Pepper, C.; Toms, B. 2020. Nova Scotia lichen database [as of 2020-05-25]. Mersey Tobeatic Research Institute, 668 recs.
7	Paquet, Julie. 2019. Atlantic Canada Shorebird Survey ACSS database for 2019. Environment Canada, Canadian Wildlife Service.
7	Robinson, S.L. 2011. 2011 ND dune survey field data. Atlantic Canada Conservation Data Centre, 2715 recs.
6	Anderson, Frances; Neily, Tom. 2010. A Reconnaissance Level Survey of Calciphilous Lichens in Selected Karst Topography in Nova Scotia with Notes on Incidental Bryophytes. Mersey Tobeatic Research Institute.
6	Blaney, C.S.; Mazerolle, D.M.; Oberndorfer, E. 2007. Fieldwork 2007. Atlantic Canada Conservation Data Centre. Sackville NB, 13770 recs.
6	Cameron, R.P. 2005. <i>Erioderma pedicellatum</i> unpublished data. NS Dept of Environment, 9 recs.
6	Gallop, John. 2021. Sheet Harbour rare lichen observations. McCallum Environmental.
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6	Powell, B.C. 1967. Female sexual cycles of <i>Chrysemy spicta</i> & <i>Clemmys insculpta</i> in Nova Scotia. Can. Field-Nat., 81:134-139. 26 recs.
6	Cameron, R.P. 2014. 2013-14 rare species field data. Nova Scotia Department of Environment, 35 recs.
5	Cameron, R.P. 2018. <i>Degelia plumbea</i> records. Nova Scotia Environment.
5	Layberry, R.A. & Hall, P.W., LaFontaine, J.D. 1998. The Butterflies of Canada. University of Toronto Press. 280 pp+plates.
5	NS DNR. 2017. Black Ash records from NS DNR Permanent Sample Plots (PSPs), 1965-2016. NS Dept of Natural Resources.
5	Power, T. 2019. Cape Breton Wood Turtle records. NS Lands and Forestry.
5	Whittam, R.M. 1997. Status Report on the Roseate Tern (<i>Sterna dougallii</i>) in Canada. Committee on the Status of Endangered Wildlife in Canada, 5 recs.
4	Belland, R.J. Maritimes moss records from various herbarium databases. 2014.
4	Blaney, C.S.; Mazerolle, D.M. 2008. Fieldwork 2008. Atlantic Canada Conservation Data Centre. Sackville NB, 13343 recs.
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4	Ferguson, D.C. 1954. The Lepidoptera of Nova Scotia. Part I, macrolepidoptera. Proceedings of the Nova Scotian Institute of Science, 23(3), 161-375.
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4	Neily, T.H. & Pepper, C.; Toms, B. 2018. Nova Scotia lichen database Update. Mersey Tobeatic Research Institute, 14 recs.
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4	Patrick, Allison. 2021. Animal and plant records from NCC properties from 2019 and 2020. Nature Conservancy Canada.
4	Plissner, J.H. & Haig, S.M. 1997. 1996 International piping plover census. US Geological Survey, Corvallis OR, 231 pp.
4	Popma, T.M. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre. Sackville NB, 113 recs.
4	Richardson, D., Anderson, F., Cameron, R., McMullin, T., Clayden, S. 2014. Field Work Report on Black Foam Lichen (<i>Anzia colpodes</i>). COSEWIC.
4	Robicheau, Charity. 2023. Field data from 2023. Atlantic Canada Conservation Data Centre, 14 records.
4	Robinson, S.L. 2014. 2013 Field Data. Atlantic Canada Conservation Data Centre.
4	Rousseau, J. 1938. Notes Floristiques sur l'est de la Nouvelle-Ecosse in Contributions de l'Institut Botanique de l'Universite de Montreal. Universite de Montreal, 32, 13-62. 11 recs.
4	Skomorowski, Joanna. 2024. 2022 Nova Scotia Nature Trust SAR occurrences. Nova Scotia Nature Trust, 58 records.
4	Westwood, A., Staicer, C. 2016. Nova Scotia landbird Species at Risk observations. Dalhousie University.
3	Basquill, S.P. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre, Sackville NB, 69 recs.
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3	Feltham, Carter. 2022. Monarch (<i>Danaus plexippus</i>) and Milkweed MTRI records from the 2022 Field Season. Mersey Tobeatic Research Institute.
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3	Neily, T.H. 2016. Email communication (May 6, 2016) to Sean Blaney regarding <i>Fissidens exilis</i> observations made in 2016 in Nova Scotia. Pers. Comm., 3 recs.
3	O'Neil, S. 1998. Atlantic Salmon: Eastern Shore Nova Scotia SFA 20. Dept of Fisheries & Oceans, Atlantic Region, Science. Stock Status Report D3-10. 4 recs.
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2	Blaney, C.S. 2000. Fieldwork 2000. Atlantic Canada Conservation Data Centre. Sackville NB, 1265 recs.
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2	Cameron, B. 2005. <i>C. palmicola</i> , <i>E. pedicellatum</i> records from Sixth Lake. Pers. comm. to C.S. Blaney. 3 recs, 3 recs.
2	Cameron, R.P. 2006. <i>Erioderma pedicellatum</i> 2006 field data. NS Dept of Environment, 9 recs.
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2	Gillis, J. 2007. Botanical observations from bog on Skye Mountain, NS. Pers. comm., 8 recs.
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2	Hill, Nick. 2021. <i>Fraxinus nigra</i> observations at Marshy Hope. Fern Hill Institute of Plant Conservation.
2	Klymko, John. 2024. Atlantic Canada Conservation Data Centre zoological fieldwork 2023. Atlantic Canada Conservation Data Centre.
2	LaPaix, R.W.; Crowell, M.J.; MacDonald, M. 2011. Stantec rare plant records, 2010-11. Stantec Consulting, 334 recs.
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2	McAlpine, D.F. New Brunswick Museum bee specimens. New Brunswick Museum. 2013.
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2	Newell, R.E. 2001. Fortress Louisbourg Species at Risk Survey 2001. Parks Canada, 4 recs.
2	Ogden, J. NS DNR Butterfly Collection Dataset. Nova Scotia Department of Natural Resources. 2014.
2	Sollows, M.C., 2008. NBM Science Collections databases: mammals. New Brunswick Museum, Saint John NB, download Jan. 2008, 4983 recs.
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1	Benjamin, L.K. 2009. NSDNR Fieldwork & Consultants Reports. Nova Scotia Dept Natural Resources, 143 recs.
1	Boyne, A.W. & Grecian, V.D. 1999. Tern Surveys. Canadian Wildlife Service, Sackville, unpublished data. 23 recs.
1	Brad Toms. 2024. Erioderma mollissimum records. Mersey Tobeatic Research Institute, 57 recs.
1	Calhoun, J.C. Butterfly records databased at the McGuire Center for Lepidoptera and Biodiversity. Calhoun, J.C. 2020.
1	Chris Pepper. 2021-2022. Mersey Wind Farm Lichen Observations. Chris Pepper, 20 recs.
1	Christie, D.S. 2000. Christmas Bird Count Data, 1997-2000. Nature NB, 54 recs.
1	Clayden, S.R. 1998. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, 19759 recs.
1	Crowell, Iain. 2021. Fraxinus nigra observation near Port Hood. iNaturalist.
1	Crowell, M. 2013. email to Sean Blaney regarding <i>Listera australis</i> at Bear Head and Mill Cove Canadian Forces Station. Jacques Whitford Environmental Ltd., 2.
1	Daur, R.W. & Bateman, M.C. 1996. The Barrow's Goldeneye (<i>Bucephala islandica</i>) in the Atlantic Provinces and Maine. Canadian Wildlife Service, Sackville, 47pp.
1	Doucet, D.A. 2009. Census of Globally Rare, Endemic Butterflies of Nova Scotia Gulf of St Lawrence Salt Marshes. Nova Scotia Dept of Natural Resources, Species at Risk, 155 recs.
1	Haughian, S.R. 2018. Description of <i>Fuscopannaria leucosticta</i> field work in 2017. New Brunswick Museum, 314 recs.
1	Hill, N.M. 2021. Observation of <i>Carex haydenii</i> and black ash near Marshy Hope and Ponhook Lake. pers. comm.
1	Hughes, Cory. 2020. Atlantic Forestry Centre <i>Coccinella transversoguttata</i> collections. Canadian Forest Service, Atlantic Forestry Centre.
1	Klymko, J. 2019. Atlantic Canada Conservation Data Centre zoological fieldwork 2018. Atlantic Canada Conservation Data Centre.
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1	Marshall, L. 1998. Atlantic Salmon: Cape Breton SFA 18 (part) & SFA 19. Dept of Fisheries & Oceans, Atlantic Region, Science. Stock Status Report D3-09. 5 recs.
1	McNeil, J.A. 2016. Blandings Turtle (<i>Emydoidea blandingii</i>), Eastern Ribbonsnake (<i>Thamnophis sauritus</i>), Wood Turtle (<i>Glyptemys insculpta</i>), and Snapping Turtle (<i>Chelydra serpentina</i>) sightings, 2016. Mersey Tobeatic Research Institute, 774 records.
1	McNeil, J.A. 2019. Snapping Turtle records, 2019. Mersey Tobeatic Research Institute.
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1	Neily, T.H. 2013. Email communication to Sean Blaney regarding <i>Agalinis paupercula</i> observations made in 2013 in Nova Scotia. , 1 rec.
1	Ogden, K. Nova Scotia Museum butterfly specimen database. Nova Scotia Museum. 2017.
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1	Robinson, C.B. 1907. Early intervalle flora of eastern Nova Scotia. Transactions of the Nova Scotia Institute of Science, 10:502-506. 1 rec.
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1	Stephen Freeman. 2022. New location for Black Ash in Queens County, NS. Personal communication, 2.
1	Webster, R.P. Atlantic Forestry Centre Insect Collection, Maritimes butterfly records. Natural Resources Canada. 2014.
1	White, S. 2019. Notable species sightings, 2018. East Coast Aquatics.
1	Whittam, R.M. 2000. <i>Senecio pseudoarnica</i> on Country Island. , Pers. comm. to S. Gerriets. 1 rec.

APPENDIX I
FISH & FISH HABITAT PHOTO LOG



Photo 1: Representative photo of the downstream fish habitat assessment point for Dung Cove inlet.



Photo 2: Representative photo of the crossing point fish habitat assessment point for Dung Cove inlet.



Photo 3: Representative photo of the upstream fish habitat assessment point for Dung Cove inlet.



Photo 4: Representative photo of the downstream fish habitat assessment point in Betty's Cove Brook.



Photo 5: Representative photo of the crossing point fish habitat assessment point in Betty's Cove Brook.



Photo 6: Representative photo of the upstream fish habitat assessment point in Betty's Cove Brook.



Photo 7: Representative photo of the trapping location in Pond 1.



Photo 8: Representative photo of a mummichog (*Fundulus hetericlitus*) captured in a minnow trap in Pond 1.



Photo 9: Representative photo of the trapping location in Pond 2.



Photo 10: Representative photo of a mummichog captured in a minnow trap in Pond 2.



Photo 11: Representative photo of the electrofishing reach in Dung Cove inlet.



Photo 12: Representative photo of a Brook trout (*Salvelinus fontinalis*) captured while electrofishing Dung Cove inlet.



Photo 13: Representative photo of an American eel (*Anguilla rostrata*) captured while electrofishing Dung Cove inlet.



Photo 14: Representative photo of the electrofishing reach in Betty's Cove Brook.



Photo 15: Representative photo of a Brook trout captured while electrofishing Betty's Cove Brook.



Photo 16: Representative photo of an American eel (*Anguilla rostrata*) captured while electrofishing Betty's Cove Brook