Volume IID, Section 5: Public Consultation

Attachment 10: June 7, 2007 AST & Community Committee Meeting: Stakeholder Communication Records and Related Documents

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LIST OF ATTACHMENTS

PROPOSED AGENDA

AST & COMMUNITY COMMITTEE MEETING

Lamont Curling Rink Lounge

Thursday, June 7
6:30 pm to 9:00 pm

TIME	AGENDA ITEM
6:30 pm	**1. Welcome & Introductions** ▪ Review of principles we are using to guide discussions ▪ Review of ground rules ▪ Review of committee's mandate ▪ Review of roles and responsibilities
6:40 pm	**2. May 3 DRAFT Meeting Notes & Purpose of Tonight's Meeting** ▪ Report on May 3 action steps o Facilitation Team (DRAFT notes, ppt, survey feedback, invitation letters, proposed work plan) o Committee Members (websites) ▪ Review of May 3 DRAFT meeting notes ▪ Review of this meeting's purpose ▪ Review of meeting agenda
6:50 pm	**3. Committee Structure & Process Review (standing agenda item)** ▪ Confirm how meeting information (i.e. notes) will be shared with the broader community members ▪ How and when do we make meetings open to the broader community members? ▪ Other?
7:20 pm	**4. Proposed Work Plan Review – Air Related**
8:45 pm	**5. Next Steps** ▪ Committee members task list ▪ Facilitation Team task list ▪ Confirm next meeting dates – July 5 and August 2 ▪ Collectively determine July 5 meeting agenda items ▪ Feedback for Facilitation Team
9:00 pm	**6. Adjourn**

AST & Community Committee Meeting

June 7, 2007

RMC & Associates

Welcome

Principles to guide Committee Meetings:

- Open
- Transparent
- Inclusive
- Respectful
- Foster community members coming together

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Proposed Ground Rules

The following ground rules are proposed to promote a productive and effective working environment:

R Respect: At All Times, For All Participants, By All Participants
E Equality: Everyone's Opinion Counts
S Solutions: Look For Creative Ways To Accomplish Our Objectives
P Participate: Share Your Thoughts Constructively
E Express Yourself: Your Input Will Make A Valuable Contribution
C Commitment: You Have a Stake In a Positive Outcome
T Team: We Are Working Together

Others?

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Committee Mandate

Committee members to act as community conduits / liaisons

- Enhance communication through the sharing of credible information - clarify questions about the proposed project and find effective ways to share information *to create a more informed dialogue in the community*
- Problem-solve / issue resolve when these opportunities present themselves
- Build more positive, go-forward relationships amongst all

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Report on May 3 Action Steps

Facilitation Team

- DRAFT May 3 meeting notes, survey feedback, May 3 power point presentation, DRAFT June 7 agenda, PROPOSED Work Plan – Air Related
- Invitation letters to Mayor Jack Lambert and Fire Chief John Helton

Committee Members

Posting meeting notes on:

- FOLC website
- Town websites
- County website

RMC & Associates

DRAFT May 3 meeting notes review

- John Helton absent with regrets - incorrect
- Other?

Purpose of tonight's meeting

Work Plan – Air Related

- Review and finalize air-related work plan
- Identify the best way to get air-related information out to broader community members

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Agenda Overview

- ✓ Review principles, ground rules, mandate, committee member roles
- ✓ Report on May 3 Action Steps
- ✓ Review DRAFT May 3 meeting notes
- ✓ Review purpose of June 7 meeting

- Review and finalize agenda
- Committee Structure and Process Review
- PROPOSED Work Plan – Air Related
- Next steps

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Agenda Review

- Committee member request to present information to committee members
  - *Committee member response to this request?*
  - *More broadly, how does the committee wish to respond to these types of requests?*

- Other?

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Structure and Process Review

- ✓ Confirm how meeting information (i.e. notes) will be shared with the broader community members
- ✓ What will be the process regarding requests to share information with committee members?

- How and when do we make meetings open to broader community members?
- Other?

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Proposed Work Plan – Air Related

WorleyParsons Komex – Gord Johnson

- Proposed Work Plan – Air Related
- High level summary of results of air studies

Addressing information needs

How do we address community air-related information needs?

- workshops
- newsletters
- information open house
- speaker forums
- white paper
- expert presentations
- other?

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Next steps?

- Committee members' task list
- Facilitation Team task list
- Confirm next meeting dates – July 5 and August 2
- Collectively determine July 5 meeting agenda items
- Feedback for Facilitation Team

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Process Feedback

Bouquets and Bricks - advice to the Facilitation Team?

- How can we improve the process for you?
- What is working well?

Thank you for you participation

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& Associates

AST & Community Committee

PROPOSED Work Plan
Air - related

Review of Air Emissions Assessment Process - July 2007 forum to be determined by Committee

1. Primary potential pollutants being assessed as part of the EIA process

Normal Operations	Upset Conditions
Nitrogen Dioxide *	Sulphur Dioxide
Carbon Monoxide/Carbon Dioxide	
Elemental Sulphur	
Hydrogen Sulphide *	
Sulphur Dioxide *	
Fine Particulate Matter *	
Ozone *	

2. Review the current state of criteria pollutants (background levels) in the study area as determined by the Fort Air Partnership (* - denotes regional data available)

3. Project issues related to air

    a. air emissions of criteria contaminants
    b. acid deposition
    c. ozone formation

4. Review of air emissions and ambient air quality criteria

5. Emissions sources and contaminant concern

    a. liquid sulphur transfer (hydrogen sulphide)
    b. sulphur forming (hydrogen sulphide, elemental sulphur particulate)
    c. sulphur transfer and loading (elemental sulphur)
    d. mobile equipment and boiler (criteria pollutants)

6. Air emissions modeling utilized to determine ground level concentrations of criteria pollutants. Air emissions from sources identified above are modeled to account for a variety of climate conditions using CALPUFF computer model (includes predicted ground level concentrations of criteria pollutants from Project and other regional sources).

7. Special considerations associated with Project

a. Canexus plant – chlorate/sulphur compatibility
b. Worst Case Scenario

Review of Air Emissions implications - an August 2007 forum to be determined by Committee

1. Review the criteria pollutants related to public health and safety

2. Review of air emissions and sulphur deposition as it relates to soil and water quality

    a. deposition predictions
    b. background soil and water quality
    c. neutralizing potential
    d. effects
    e. mitigation and monitoring

3. Review of worst case scenarios and emergency response related to air emissions

    a. worst case scenario
    b. air emissions modeling
    c. emergency evacuation zone

4. Review of air emissions as they relate to livestock – former study commissioned by the Province

WorleyParsons Komex

resources & energy

HAZCO

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Proposed Work Plan
Air-related Issues

June 7th Committee Meeting

Gordon J. Johnson

when experience counts

- Summary of Discussion
  - Air Quality Issues
    - Emission of criteria pollutants
    - Acidification caused by sulphur deposition
    - Emissions related to a sulphur fire
  - Review of criteria pollutants
  - Background air quality - Fort Air partnership
  - Air Emissions relative to Ambient Air Quality
  - Emissions Sources
  - Results of Air Emissions Modeling
  - Special Considerations
    - adjacent chlorate plant
    - worst case scenario
    - public and worker health, livestock
    - impacts to water and soil quality

- Criteria pollutants and other compounds relevant to Project
  - hydrogen sulphide
  - sulphur dioxide
  - NOx
  - ozone
  - carbon monoxide
  - fine particulate matter
- Other air emission concerns relevant to Project
  - sulphur dioxide emissions during fires
  - elemental sulphur deposition and acidification potential
  - elemental sulphur emissions and compatibility with chlorate

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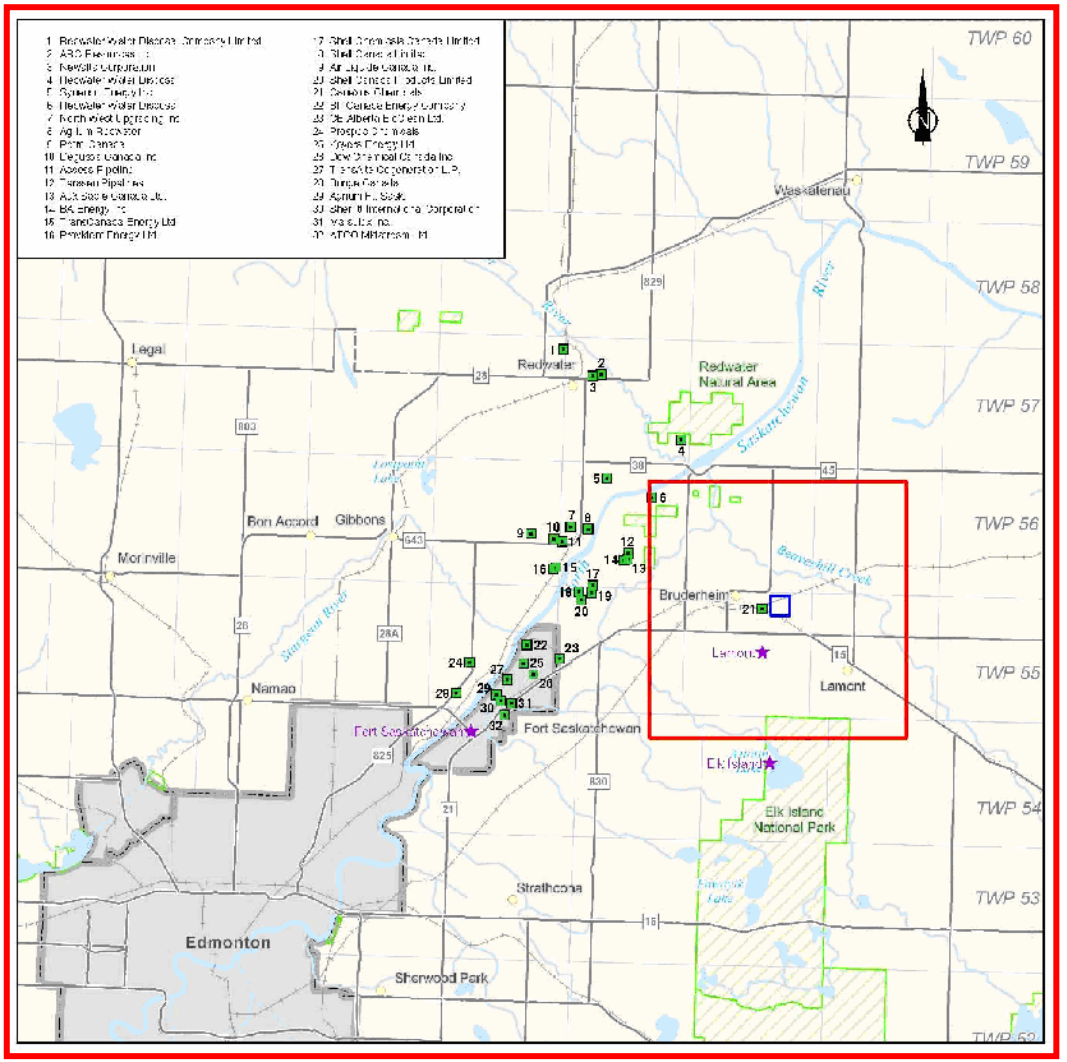
Regional Air Quality



Provincial & Federal Ambient Air Quality Objectives

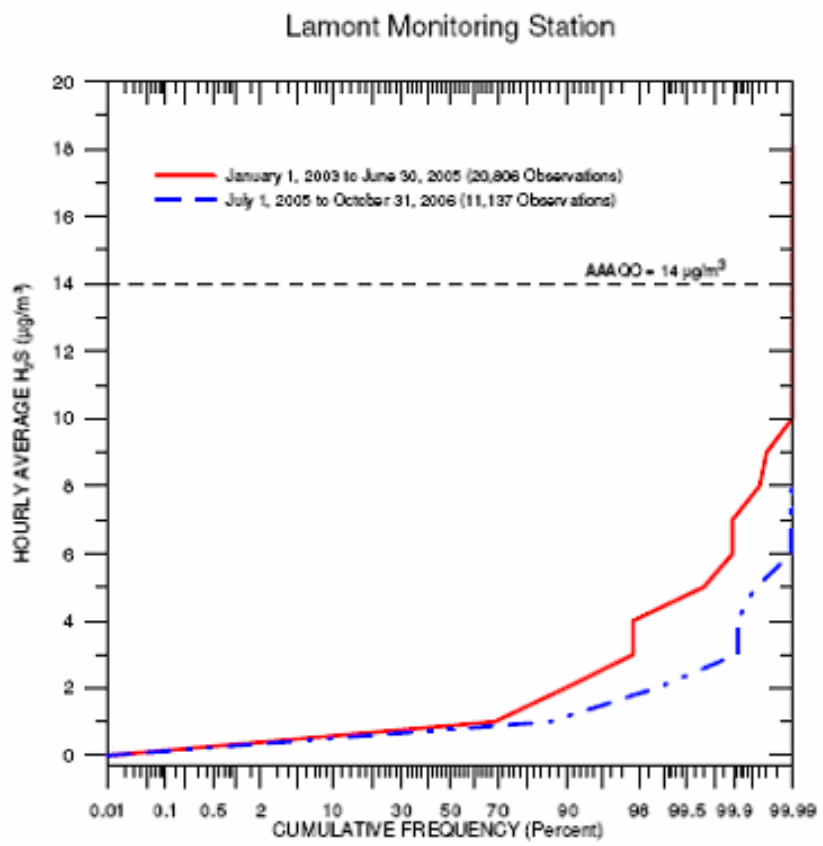
Parameter	AAAQO [1,2]		NAAQO [1,3]			
			Desirable Objective		Acceptable Objective	
	µg/m³	ppm	µg/m³	ppm	µg/m³	ppm
Carbon monoxide						
1-hour maximum	15,000	13.0	15,000	13.0	34,600	30.0
8-hour maximum	6,000	5.0	6,000	5.0	12,700	11.0
Nitrogen dioxide						
1-hour maximum	400	0.21	N/A	N/A	400	0.21
24-hour maximum	200	0.11	N/A	N/A	200	0.11
Annual mean	60	0.032	60	0.032	100	0.05
Ozone						
1-hour maximum	160	0.082	100	0.050	160	0.082
Sulphur dioxide						
1-hour maximum	450	0.17	450	0.17	900	0.34
24-hour maximum	150	0.06	150	0.06	300	0.11
Annual mean	30	0.01	30	0.01	60	0.02
Hydrogen sulphide						
1-hour maximum	14	0.010	N/A	N/A	N/A	N/A
24-hour maximum	4	0.003	N/A	N/A	N/A	N/A

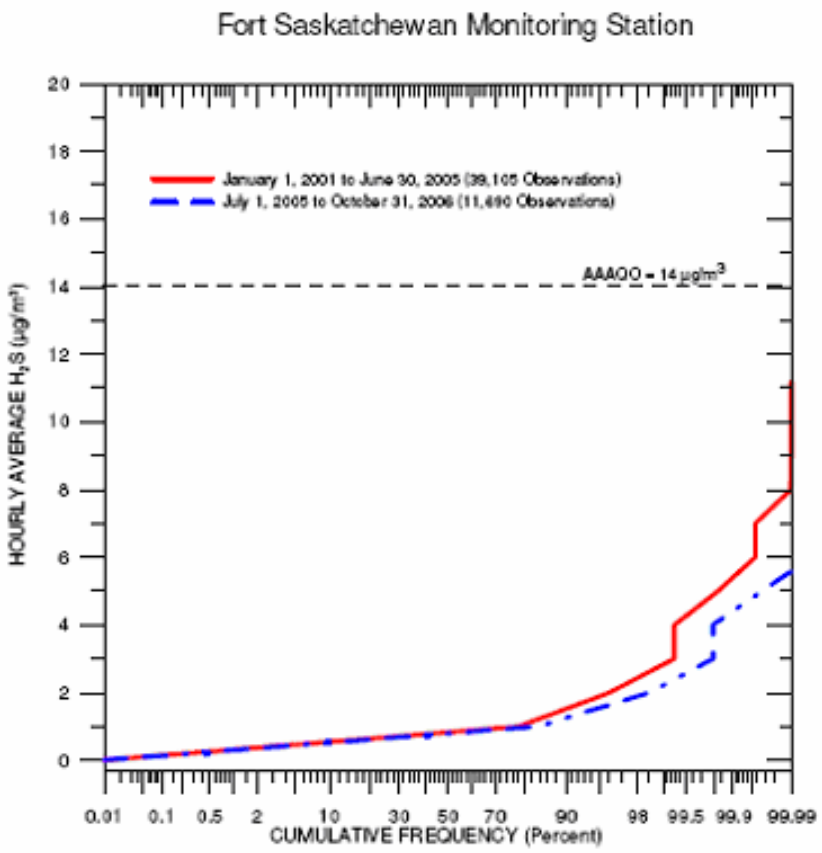
Notes:
[1] Concentrations are given in µg/m³ at 25°C, 101.325 kPa, dry basis and ppm by volume.
[2] AAAQO = Alberta Ambient Air Quality Objective.
[3] NAAQO = National Ambient Air Quality Objective.
N/A – not available.

Canada Wide Standards for Ozone and PM2.5

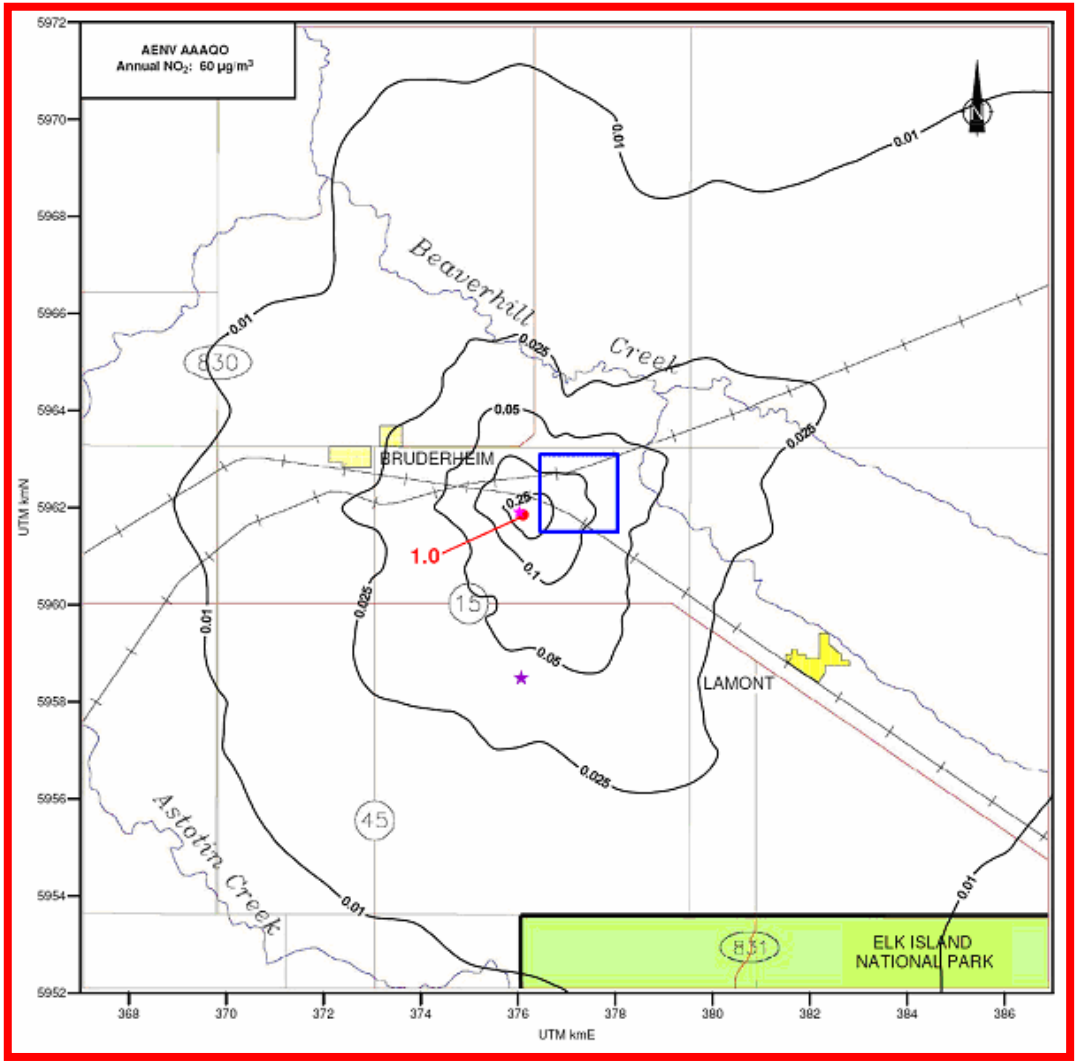
Air Contaminant	Canada-wide Standard
O_3	130 µg/m^3 (65 ppb) averaged over an 8-hour period. Achievement will be based on the fourth highest measurement annually, averaged over three consecutive years30 µg/m^3 averaged over a 24-hour period. Achievement will be based on the 98th percentile ambient measurement annually, averaged over three consecutive years
$PM_{2.5}$	130 µg/m^3 (65 ppb) averaged over an 8-hour period. Achievement will be based on the fourth highest measurement annually, averaged over three consecutive years30 µg/m^3 averaged over a 24-hour period. Achievement will be based on the 98th percentile ambient measurement annually, averaged over three consecutive years

Example Air Quality – H_2S

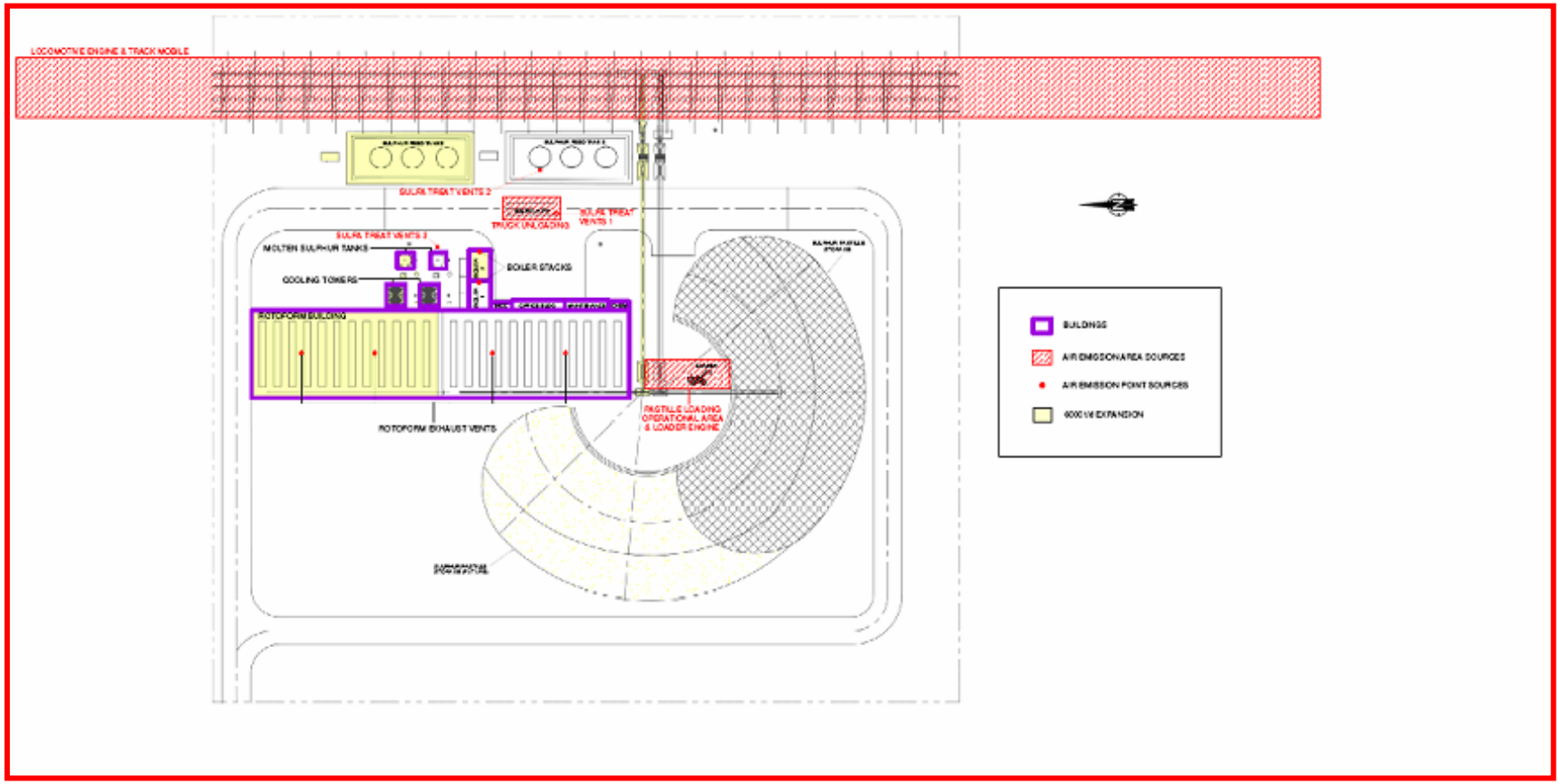




Predicted Background Ground Level Concentrations



Emissions Sources – Plot Plan



Emissions Sources - Table

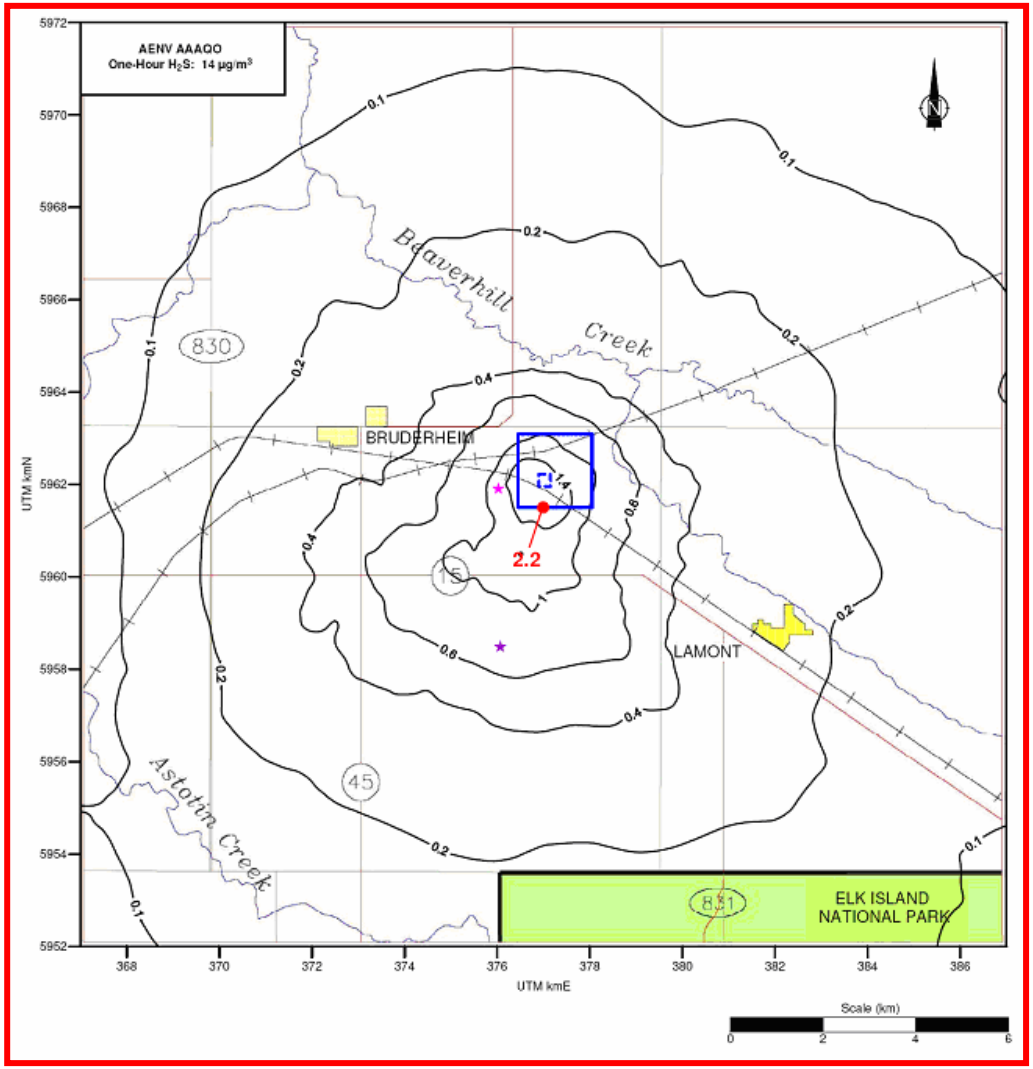
Parameter		Rotoform Stack #1	Rotoform Stack #2	Rotoform Stack #3	Rotoform Stack #4	Boiler #1 150 HP	Boiler #2 150 HP
Stack height (m)		18.3	18.3	18.3	18.3	16.76	16.76
Stack diameter (m)		0.390	0.390	0.390	0.390	0.406	0.406
Exit temperature	°C	36	36	36	36	228	228
	K	309	309	309	309	501	501
Exit velocity (m s^{-1})		16.7	16.7	16.7	16.7	7.5	7.5
Actual exhaust volume flow rate (m^3 h^{-1})		7,170	7,170	7,170	7,170	3,523	3,523
Exhaust mass flow rate (kg s^{-1})		2.10	2.10	2.10	2.10	0.69	0.69
Emission rates (g s^{-1})	CO	-	-	-	-	0.123	0.123
	H_2S	0.012	0.012	0.012	0.012	-	-
	NO_x [a]	-	-	-	-	0.101	0.101
	$PM_{2.5}$	0.105	0.105	0.105	0.105	0.011	0.011
	SO_2	-	-	-	-	0.001	0.001

Predicted Ground Level Concentrations - Table

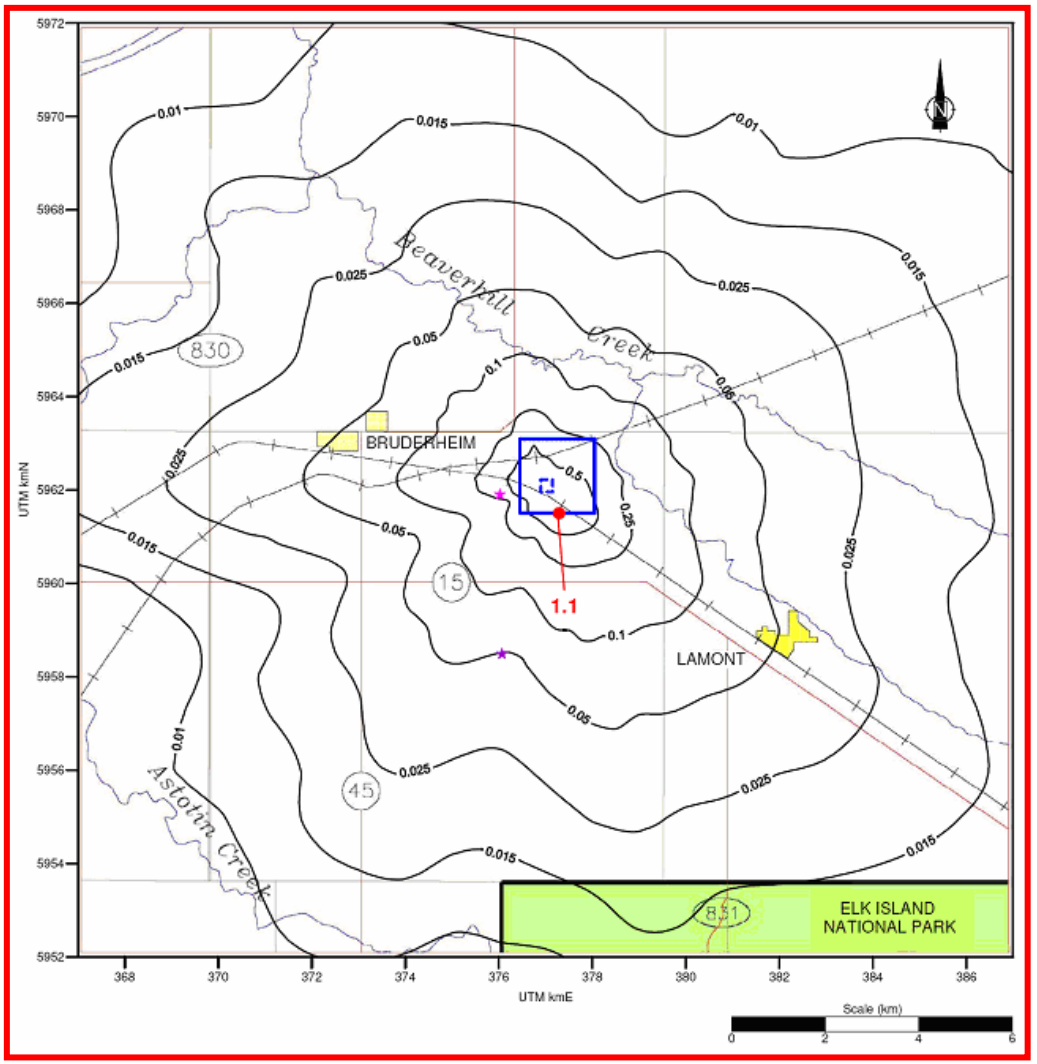
Air Contaminant	Averaging Period	Maximum Predicted Ground-level Concentration (µg/m^3)	AAAQO (µg/m^3)
CO	One-hour	238.00	15,000
	8-hour	51.40	6,000
H_2S	One-hour	2.20	14
	24-hour	1.00	4
NO_2	One-hour	209.00	400
	24-hour	39.00	200
	Annual	2.20	60
$PM_{2.5}$	24-hour	6.00	30*
SO_2	One-hour	19.40	450
	24-hour	0.60	150
	Annual	0.03	30

Note:
* CWS based on 98th percentile ambient measurement annually, averaged over three consecutive years.

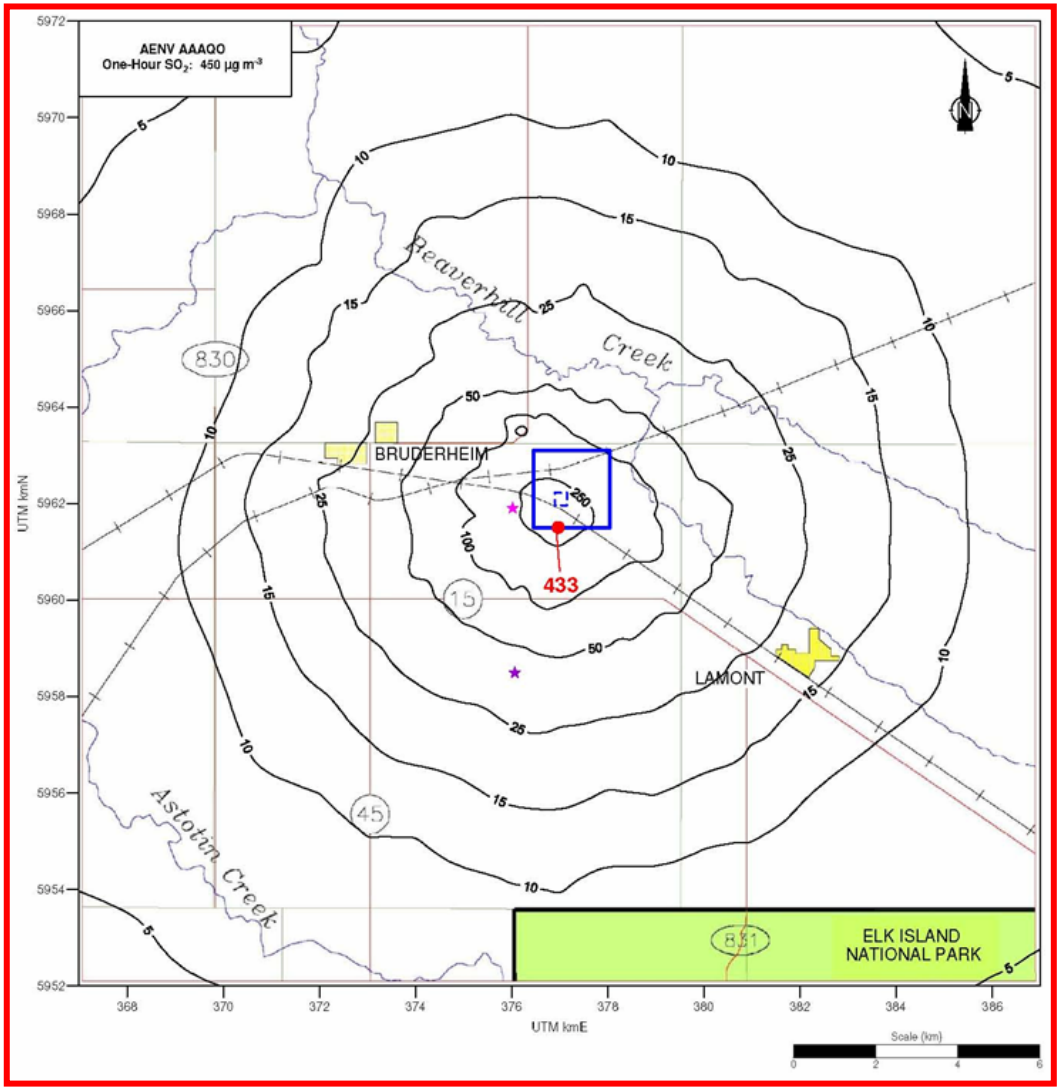
Predicted Ground Level Concentrations - Example



Predicted Ground Level Concentrations – With Background Sources



SO_2 During Upset Conditions



Human Health Table Summary of Concentration Ratios for Acute Inhalation Assessment

Chemicals of Potential Concern	Averaging Time	Concentration Ratios (unitless)		
		Baseline	Application	CEA
CO	1-hour	0.4	0.4	0.4
	8-hour	0.6	0.6	0.6
H_2S	1-hour	0.1	0.1	0.1
NO_2	1-hour	0.3	0.8	0.8
	24-hour	0.3	0.5	0.5
SO_2	10-minute	0.4	0.5	0.5
	1-hour	0.3	0.3	0.3
	24-hour	0.2	0.2	0.2
$PM_{2.5}$	24-hour	0.7	0.9	0.9
Mixtures				
Respiratory irritants	1-hour	0.7	**1.2**	**1.2**
	24-hour	0.5	0.7	0.7

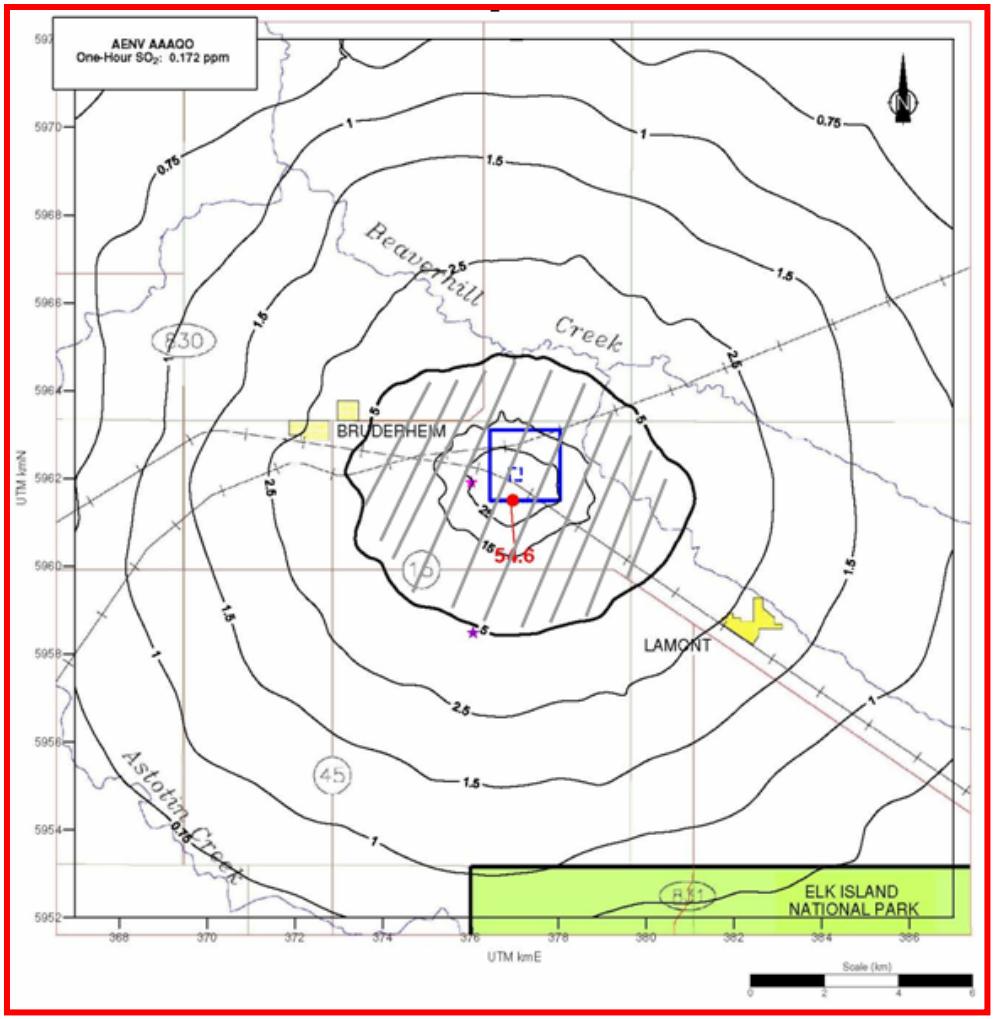
Human Health

Summary of Concentration Ratios for the Chronic Inhalation Assessment

Calabrese 1991	Averaging Time	Concentration Ratios (unitless)		
		Baseline	Application	CEA
H_2S	Annual	0.2	0.4	0.4
NO_2	Annual	0.1	0.3	0.3
SO_2	Annual	0.1	0.2	0.2
Respiratory irritants	Annual	0.4	0.9	0.9

Worst Case Scenario

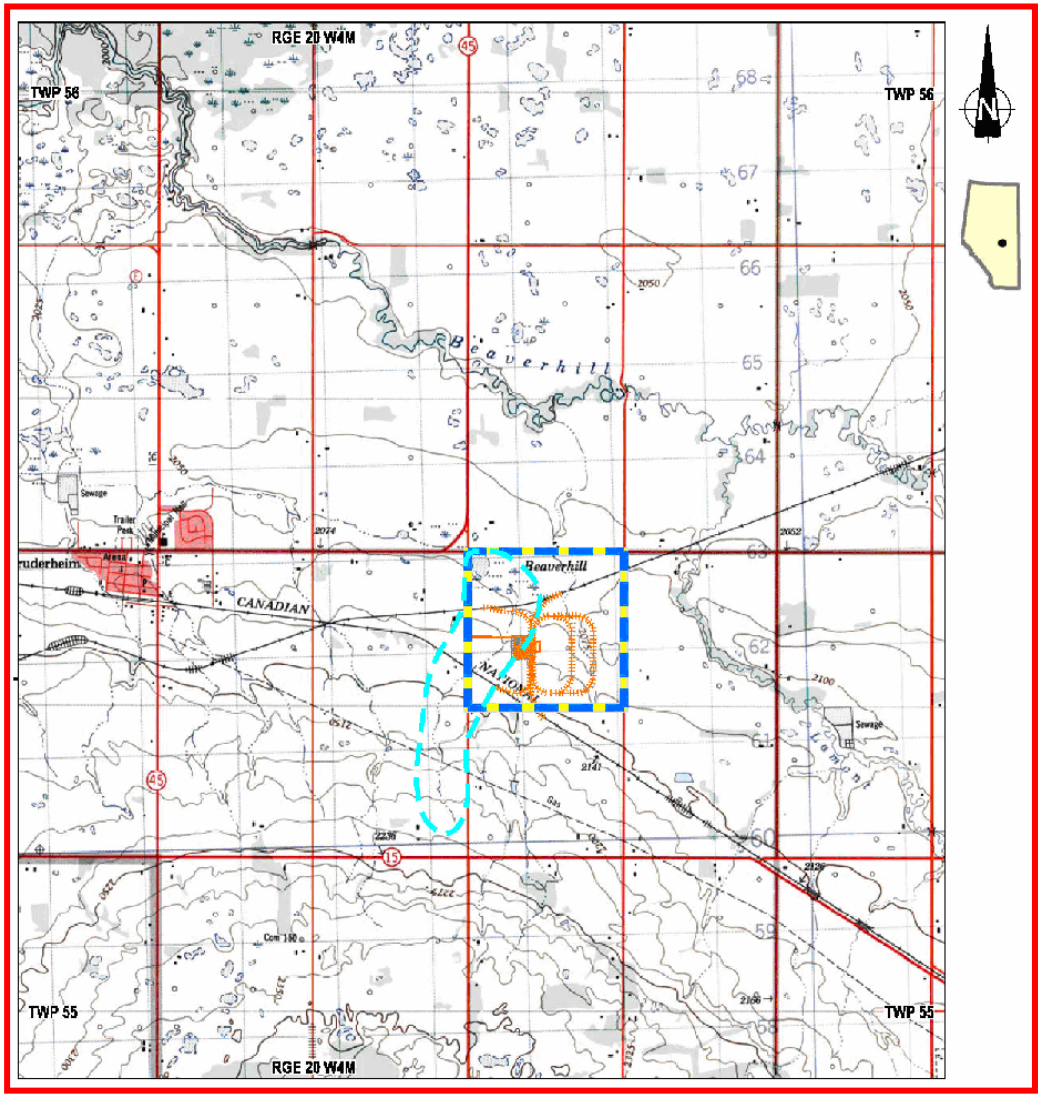
Evacuation Zone



The Site		Highways	
Principal Development Area (PDA)		Railways	
Canexus Sodium Chlorate Plant		National Park	
Rivers and Streams		Towns and Settlements	
Lamont Continuous Air Monitoring Station		Call Out Zone for Worst-case Scenario – SO_2 Release of 5 ppm (EUB ID 2001-5)	

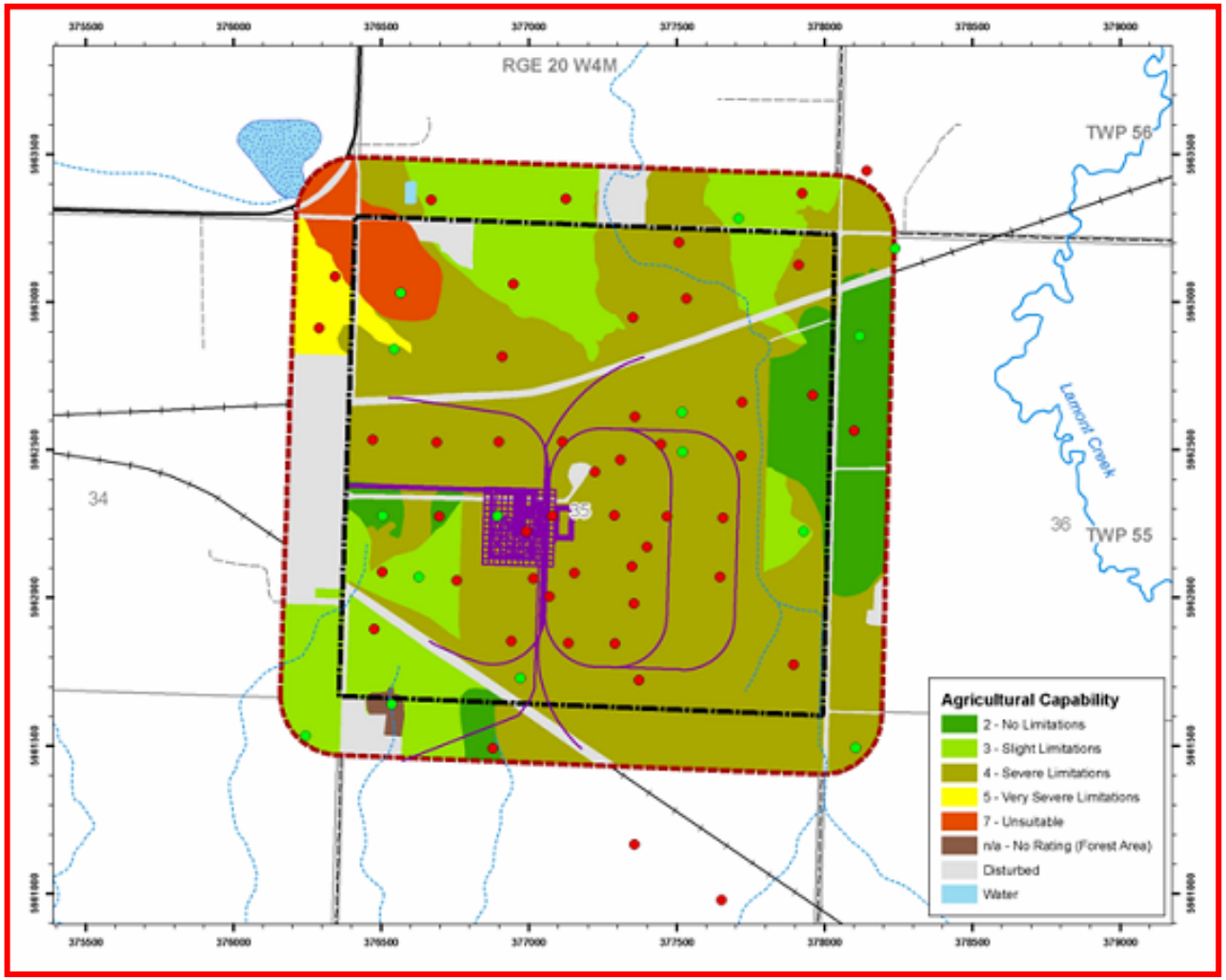
Surface Water Issues

- *slight reduction in flow (<3%)*
- *no significant water quality concerns*

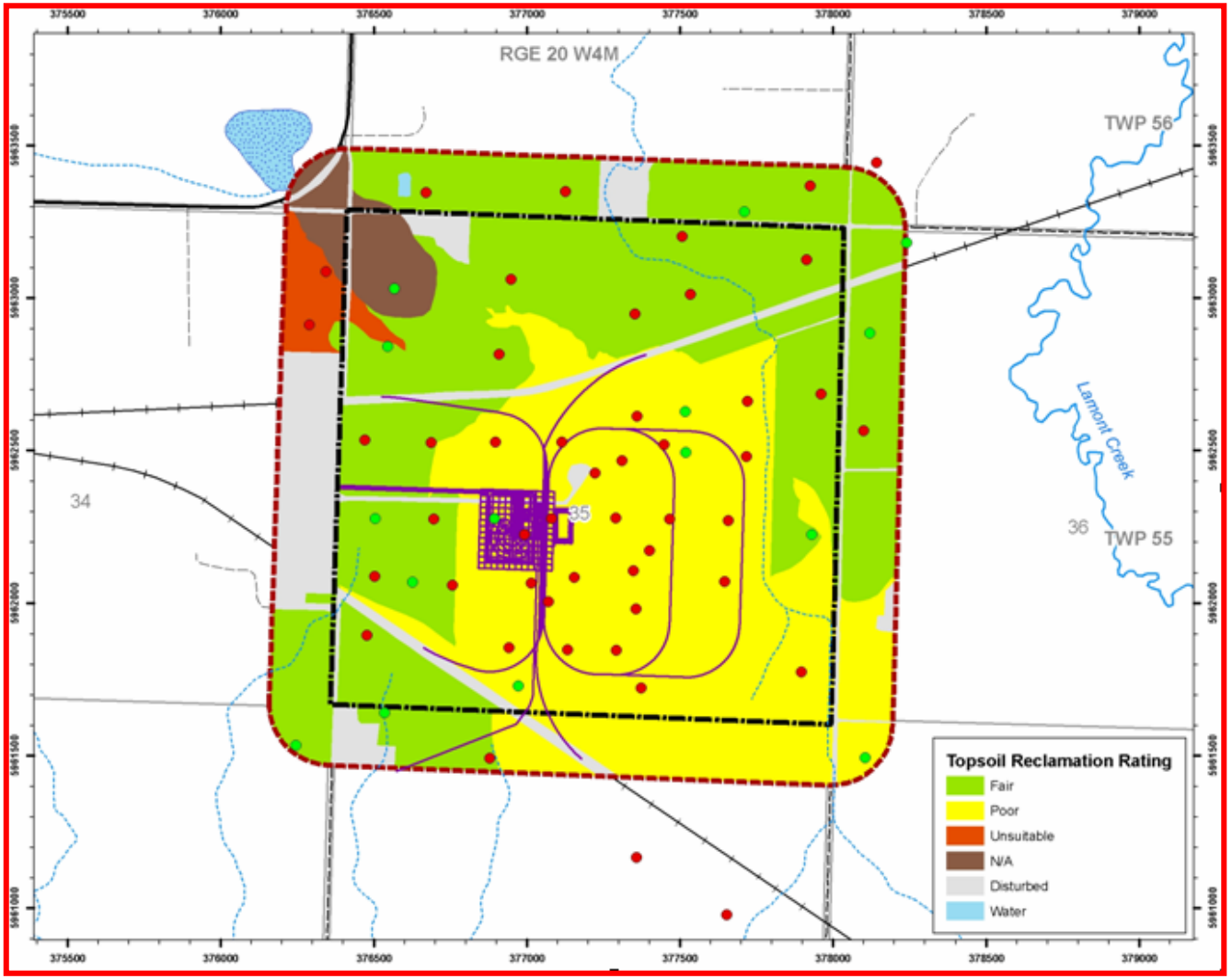


Soil Issues

- Acidification constrained to development area plus ~200 m
- Reclamation challenges
- Marginal agricultural capability



Topsoil Reclamation Suitability in the LSA



Chlorate/Sulphur Compatibility Tests

- A series of five tests are being completed to assess chlorate/sulphur compatibility versus that of common airborne substances