



WCAS General Meeting

Meeting Notes

December 2, 2005

10:45 a.m. – 4:00 p.m.

Main Board Room
Penn West Building, 50th Avenue West
Drayton Valley, AB

In Attendance:

Cecil Anderson	Pembina Agriculture Protection Association
Dave Stewart	Talisman Energy
Adam Stokowski	David Thompson Regional Health Authority
Gwen Wood	EUB
Audrey Kelto	Leduc County
Paul Belanger	Green Foundation
Robert Kitching	Brazeau County
Rick Phaneuf	Alberta Environment
Andy Lamb	Alberta Environment
David Brand	Luscar Limited
Jerry Navarro	TransAlta
Jason Schulz	EPCOR

WCAS:

Bob Scotten	Executive Director
Barbara Johnson	Environmental Engineer

Special Guests:

Warren Kindzierski	Seacor Environmental Ltd.
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Absent with Regrets:

Hercules Georgiadis	Hinton Pulp
Steven Probert	Capital Health
Mike Woods	Weyerhaeuser Ltd.
Mary Griffiths	Pembina Institute of Appropriate Development

ACTION ITEMS

Action Item 1: Barb and Greg to provide Paul Belanger with information regarding power consumption, instrumentation specifications, and meteorological data for the purpose of evaluating the prospect of re-housing Hightower in its historical location with an alternate power source.

Action Item 2: Bob to complete and submit application for the NAPS funding provided for by Alberta Environment.

ONGOING ACTION ITEMS

Ongoing Item 1: Bob to provide a formal letter to Alberta Environment outlining the limitations of accessibility concerning the Athabasca Lookout location in the event that Hightower must relocate.

1. Welcome and Introductions

Cecil Anderson called the meeting to order at 10:45 a.m. Introductions were made and committee members welcomed.

2. Approval of September 23, 2005 Draft Minutes

The meeting notes of the September 23, 2005 meeting were accepted by consensus.

3. Review of the September 23, 2005 Action Items

Action Item 1: Bob to forward a letter of gratitude to Greg Gabert for his past contributions to the WCAS. **Complete.**

Action Item 2: Barb to meet with Dave to discuss WCAS financials. **Complete.** It was reported that Bob and Barb met with Dave to discuss the financial aspects of the Society. Dave shared his ideals and concerns regarding the needs to have Capital Expenditure Planning for future years at the WCAS. It was further reported that the discussions will be carried on and a five-year capital purchase projection will be constructed.

Ongoing Item 1: Bob to provide a formal letter to Alberta Environment outlining the limitations of accessibility concerning the Athabasca Lookout location. **Ongoing.** Bob reported that there is a need to be further discussion concerning new developments in the relocation of the Hightower station. Bob indicated that this would be addressed later under the zone manager's report.

Ongoing Item 2: Bob to follow up on the incorporation of a small region along WCAS boundaries with Clean Air Strategic Alliance (CASA), and the PAMZ. **Complete.**

4. Review of Financial Statements

4.1 Revenue & Expense Statements

Dave Stewart was welcomed as the new WCAS Treasurer replacing Greg Gabert.

Bob circulated a Statement of Revenue and Expenditures as at November 30, 2005. (*Attachment A & B*). The statements indicated that actual expenditures were on line with budget figures with the exception of insurance costs, accounting fees, and unbudgeted contributions to trending analysis undertaken by Dr. Warren Kindzierski. It was agreed that an additional column would be added on the Statement of Revenue and Expenditures to be used for an explanation on any variance of the budget line items in the future.

Bob indicated that surplus funds are expected in the WCAS operating budget as at the 2005 year end. Bob explained that in the past, surplus funds were used to purchase various field supplies, spare equipment, or replacement equipment. Bob asked the Board to consider the purchase of a much needed replacement trailer for the Carrot Creek station (25 K), the purchase of replacement computers for the office (10 K), and the purchase of an additional calibrator with regulator and cylinder gases (10K). After some discussion, the purchase of the calibrator and office computers was approved. Further discussion concerning the replacement trailer for Carrot Creek indicated that there might be an opportunity to utilize the trailer of Hightower. The technical committee brought forward a recommendation that WCAS investigate the use of a newer designed housing facility that would allow for use of wind and solar power energy. The alternate power source would eliminate the need to relocate the Society's historical background station. Successfully implementing the unit would also free up the trailer from Hightower to be used at Carrot Creek. In addition, it was noted that funds might be offered by government agencies that would assist in the costs of constructing/utilizing the structure.

The Board further agreed to pay Paul Belanger \$4.5K to begin the preliminary assessment as to whether the housing package could in fact be used at the original Hightower site. Paul asked Barb to provide meteorological data for the past year, records of power consumption, and also asked Greg to provide specifications on the analytic equipment. Paul then resigned his position as alternate director for the NGO sector of the Board of Directors to negate any conflict of interest.

4.2 2006 Budget Approval

Next, Bob presented 2006 Draft Budgets (*Attachment C & D*) for Board approval. Bob indicated that some increases over last years budget included expenditure in areas of accounting and legal fees due to the additional set of books required for tracking purposes of the utility companies activities, increased costs associated with insurance coverage, a new line item for grants or donations, an increase in honorarium costs for cooperative land use, and increases in the contractors costs to reflect a three percent cost of living increase and the rising cost of fuel. The Board approved the draft 2006 proposed budget.

Action Item 1: Barb and Greg to provide Paul Belanger with information regarding power consumption, instrumentation specifications, and meteorological data for the purpose of evaluating the prospect of re-housing Hightower in its historical location with an alternate power source.

5. Zone Manager's Report

5.1 Hightower Ridge Station Update

As discussed previously, the Board approved the technical committee's recommendation to hire an independent contractor to investigate the design and implementation of a housing unit that would utilize an alternate power source and thereby alleviate the need to relocate the Hightower station.

5.2 TAU/EPCOR Update

Bob indicated that he had attended a number of meetings with TAU/EPCOR/Axys Environmental concerning the continuous and passive network-monitoring program. It was agreed that Dr. Kindzierski of Seacor Environmental Ltd. would take over the administration of bio-monitoring program including the handling of samples, and the payment of accounts that had been previously attended to by WCAS.

5.3 NAPS Funding

Rick indicated that a grant application would need to be completed to secure the Naps funding and he believed the deadline for such was December 9, 2005. Bob agreed to have the application completed and submitted on time.

Action Item 2: Bob to complete and submit application for the NAPS funding provided for by Alberta Environment.

5.4 Communications Update

Bob reported that the WCAS website upgrade has been going well and should be up by the New Year. It was also noted that the latest WCAS newsletter had been printed and is ready for circulation. In addition, Bob reported making a presentation to the Warburg Surface Rights committee and also co-chairing the Oct 23, 24, and 25 CASA Airshed conference. Bob reported that the conference was a huge success.

5.5 Nisku Sour Drill Activities Update

Discussions concerning the drilling activity slated in the Drayton Valley area indicated that Ad-hoc committees are planning to design a network proposal for H₂S monitoring intended for public review. Cecil reported that interest groups continue to work with the various oil companies in the concerns of the public and have had some successes. Bob offered to provide any presentations to the public or interest groups upon request.

6. Air Monitoring Update

6.1 Uptime Efficiencies, Exceedence Reports

Barb reported that uptime efficiencies for the WCAS network were 98.5 and 98.3 percent for the months of September and October, respectively.

Barb also reported that there were a number of one-hour Alberta Guideline exceedences over the two-month period with respect to the TRS parameter at the Hinton station. It was noted that 10 exceedences occurred in September and 14 in October. The maximum one-hour concentration in September was 15 ppm and in October was 29 ppm. It was also noted that in each of these months there were two exceedences of 24-hour average Alberta Guideline's. The maximums were 4 ppm in September and 8 ppm in October.

6.2 Data Request Updates

Barb reported the following requests for data during the months of September and October:

Samed Sanei of Geological Survey of Canada requested precipitation data from the Genesee site for the use in a project concerning mercury deposition.

Brian Wiens of Environment Canada requested all 5-minute data of all stations and parameters for the months of August and September. The data was to be used in conjunction with the Prairie 2005 project.

Dick Purveen from the University of Alberta requested all hourly and daily averages from the Breton site since the commissioning of the station (April 2005). The averages were to be compared to existing data collected by the Breton Agriculture Study committee.

7. Other Business

7.1 Special Guest – Dr. Warren Kindzierski

Dr. Kindzierski provided Board members with a presentation entitled "Ambient Air Quality – Getting More Out of Air Quality Monitoring". The presentation is attached. (*Attachment E*)

7.2 Other Business

Board members discussed and approved a one thousand dollar bonus for the contractors Barb Johnson, Greg Swain, Jeff McClintock, and Bryan Moore. The bonus was in appreciation of their dedication and hard work over the 2005 year.

In addition, it was decided that Board members would review the salaries of Barb and the technologists in the New Year.

8. Next Meeting

The next meeting date March 1, 2006.

The meeting ended at approximately 4:00 p.m.

Attachment A

West Central Airshed Society
 Statement of Revenue & Expenditures
 As at November 30, 2005

	Year-to-Date			Total Budget For Year	Balance in Budget
	Actual	Budget	Variance		
FUNDING					
Budgeted Membership Fees	805,396			768,260	-37,136
Network Cost Sharing	535			535	0
Hinton Pulp Operations Agreement	14,352			14,352	0
TOTAL FUNDING	820,283			783,147	-37,136
Less: GST portion of Funding	-52,724			-50,295	2,429
2005 Revenue	767,559			732,852	-34,707
Adjustments - AEUB Correction	40,261				
Revenue: Interest Income	1,957				
Less: Estimated Non Collectibles				-40,452	-40,452
FUNDING, NET OF GST	809,777			692,400	-117,377
OFFICE & ADMINISTRATION					
Administration Salaries	77,916	77,917	0	85,000	7,084
Temporary Administrative Assistant	1,275	2,292	1,017	2,500	1,225
Accounting & Legal	3,932	3,000	-932	3,000	-932
Bank & Credit Card Charges	842	917	75	1,000	158
Bank Loan Interest	9,112	13,750	4,638	15,000	5,888
Honorarium & Board Expenses	1,477	8,250	6,773	9,000	7,523
Other Meeting Expenses	438	1,833	1,395	2,000	1,562
Computer Software & Accessories	1,069	1,833	765	2,000	931
Communications Expense	21,820	33,917	12,097	37,000	15,180
Insurance	20,586	16,042	-4,544	17,500	-3,086
Office Equipment Rental	5,767	5,958	192	6,500	733
Office Rental	9,375	10,000	625	10,000	625
Office Supplies & Postage	3,770	4,000	230	4,000	230
Tel Fax & Internet	8,801	8,708	-92	9,500	699
Grants, Donations, & Contributions	17,500	0	-17,500	0	-17,500
Miscellaneous Expense	0	458	458	500	500
TOTAL OFFICE & ADMIN EXPENSES	183,678	188,875	5,197	204,500	20,822
AMBIENT AIR MONITORING					
Utilities Expense	17,317	15,583	-1,733	17,000	-317
Contractor Expense	128,430	133,833	5,403	146,000	17,570
Chemical Analysis	4,682	18,333	13,651	20,000	15,318
QA/QC Expense	50,324	55,000	4,676	60,000	9,676
Site Maintenance & Development	550	4,583	4,033	5,000	4,450
Data Network Support & Software	5,091	6,000	909	6,000	909
Technical Workshops	1,128	4,583	3,455	5,000	3,872
Station Trailer Rental	1,980	2,017	37	2,200	220
Equipment Repair & Service	3,099	4,583	1,484	5,000	1,901
Equipment Loans Payable	84,700	84,700	0	92,400	7,700
Portable Trailer Expense	0	2,750	2,750	3,000	3,000
Field Supplies	12,108	18,333	6,225	20,000	7,892
Accommodations & Meals	2,098	5,500	3,402	6,000	3,902
TOTAL AAM EXPENSES	311,507	355,800	44,293	387,600	76,093
AGRICULTURE EXPENSE					
Operations Contractor	47,140	59,583	12,443	65,000	17,860
Soil Sampling & Analysis	2,595	5,000	2,405	5,000	2,405
Miscellaneous Expenses	1,800	6,000	4,200	6,000	4,200
TOTAL AGRICULTURE EXPENSE	51,535	70,583	19,048	76,000	24,465
HONORARIUMS					
Land & Co-op Honorariums	2,600	2,200	-400	2,300	-300
TOTAL HONORARIUM EXPENSE	2,600	2,200	-400	2,300	-300
ASSET ACCOUNTS					
Reclamation Trust Fund	2,000	2,000	0	2,000	0
WCAS Contingency Account	20,000	20,000	0	20,000	0
TOTAL ASSET ACCOUNTS	22,000	22,000	0	22,000	0
TOTAL EXPENSE	571,320	639,458	68,138	692,400	121,080
SURPLUS (DEFICIT)	238,457			0	

Attachment B

West Central Airshed Society - EPCOR/TRANSALTA
 Statement of Revenue & Expenditures
 As at November 30, 2005

	Year-to-Date			Total Budget For Year	Balance in Budget
	Actual to Date	Budget	Variance		
FUNDING					
Epcor Operating Agreement	67472			68309	837
TransAlta Operating Agreement	185666			204927	19261
TOTAL FUNDING	253,138			273,236	20,098
EXPENDITURES					
Office & Administration	5575	7792	2217	8500	2925
QA/QC Data Reporting	5,575	7,792	2,217	8,500	2,925
TOTAL OFFICE & ADMIN EXPENSES					
AMBIENT AIR MONITORING					
AAM Equip Loan Payments & Interest	120323	122650	2327	133800	13477
Utilities Expense	9164	11000	1836	12000	2836
Contractor Expense	54741	60042	5301	65500	10759
Chemical Analysis Passive Program	21096	22308	1212	24336	3240
Site Maintenance	1540	4583	3043	5000	3460
Insurance	10412	8342	-2070	9100	-1312
DAS Licensing Fee	909	2000	1091	2000	1091
Field Supplies	7152	11000	3848	12000	4848
TOTAL AMBIENT AIR MONITORING	225,337	241,925	16,588	263,736	38,399
HONORARIUMS					
Land Honorariums	1000	1000	0	1000	0
TOTAL HONORARIUMS	1,000	1,000	0	1,000	0
TOTAL EXPENSE	231,912	250,716	18,804	273,236	41,324
SURPLUS (DEFICIT)	21,226			0	

Attachment C

2006 WCAS DRAFT BUDGET

<u>REVENUE</u>	
Membership Fees	\$725,973
Network cost Sharing	500
Weldwood Operating Agreement	14,352
TOTAL 2006 FORECASTED REVENUE	\$740,825
<u>EXPENSES</u>	
OFFICE & ADMINISTRATION	
Administration Expenses	\$ 85,000
Office Support	2,500
Accounting & Legal	4,000
Bank & Credit Card Charges	1,125
Bank Loan Interest	15,000
Board Expenses & Meetings	9,000
Other Meeting Expense	2,000
Miscellaneous Expense	500
Website Development & Maintenance	7,000
Communication Expense	30,000
Computer Software & Accessories	2,000
Insurance	25,000
Office Equipment Rental	6,500
Office Rental	10,000
Office Supplies	6,000
Tel, Fax, Internet	10,000
Grants, Donations, & Contributions	15,000
TOTAL OFFICE & ADMIN EXPENSE	\$230,625
AMBIENT AIR MONITORING	
Utilities Expense	20,000
Contractor Expense	156,000
Contractor Expense: Fuel Expense	10,000
Chemical Analysis	10,800
QA/QC Expense	69,000
Site Maintenance & Development	5,000
Technical Workshops	5,000
Trailer Rental	0
Equipment Repair & Rental	5,000
Data Network Support & Software & Licensing Agreement	7,000
Portable Trailer Expense	3,000
Bank Loans Payable	92,400
Field Supplies	20,000
Accommodations & Meals	6,000
TOTAL AAM EXPENSE BUDGET	\$409,200
AGRICULTURE EXPENSE	
Science Advisory Contractors	
Diagnostic Contractors	
Operations Contractor	65,000
Miscellaneous Expense	6,000
Soil Sampling & Analysis	5,000
TOTAL AGRICULTURE EXPENSE BUDGET	\$76,000
HONORARIUMS	
Land & Co-op Honorariums	3,000
TOTAL HONORARIUM BUDGET	\$3,000
ASSET ACCOUNTS	
Reclamation Trust Fund	2,000
WCAS Contingency Account	20,000
TOTAL ASSET ACCOUNT BUDGETS	\$22,000
TOTAL BUDGET PROPOSAL	\$ 740,825
	<u>-2006-</u>


2006 WCAS - EPCOR/TRANSALTA DRAFT BUDGET

2006	Annual	Monthly Invoice	
		EPCOR	TransAlta
Loan Payment + Interest	133,800.00	33,450.00	100,350.00
Insurance	10,500.00	2,625.00	7,875.00
Technicians incl \$2000 meals etc	70,000.00	17,500.00	52,500.00
QA/QC Reporting	8,500.00	2,125.00	6,375.00
Utilities Expense	12,000.00	3,000.00	9,000.00
DAS Licencing Fees	2,000.00	500.00	1,500.00
Honorarium Expense	1,000.00	250.00	750.00
Site Maintenance	5,000.00	1,250.00	3,750.00
Field Supplies	12,000.00	3,000.00	9,000.00
Subtotal	254,800.00	63,700.00	191,100.00
Membership Fee (incl GST)	135,504.38	21,400.00	114,104.38
Total	390,304.38	85,100.00	305,204.38

Monthly Invoice	
EPCOR	TransAlta
2,787.50	8,362.50
218.75	656.25
1,458.33	4,375.00
177.08	531.25
250.00	750.00
41.67	125.00
20.83	62.50
104.17	312.50
250.00	750.00
5,308.33	15,925.00
1,783.33	9,508.70
7,091.67	25,433.70

Attachment E

Ambient Air Quality – Getting More out of Air Quality Monitoring Data



Warren Kindzierski, Ph.D., P.Eng.
Dept. Civil & Environ. Engng.
University of Alberta

WCAS Board Meeting
Drayton Valley, AB
December 2, 2005

Outline

- Background
- Air quality monitoring
 - example of trend analysis
- Source apportionment/trajjectory analysis
 - examples
- Update on WCAS trend analysis study

Scientific Approaches for Understanding Ambient Air Quality

- Emission inventories.
- Air dispersion modeling.
- Air monitoring and evaluation of air monitoring data.^Δ
- Source apportionment.^Δ

1. Air Quality Monitoring

Purposes:

- Determine current state of air quality.
- Understand deviation from natural background levels.
- Make comparisons to other regions.
- Track changes in air quality over time (trends).*

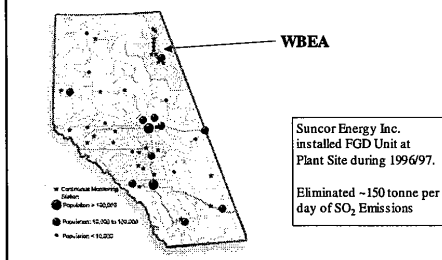
Purpose of Trend Analysis

- Main purpose – link observed changes in air quality to impacts of population and economic changes over time.
- Measure progress in achieving goals and assess benefits of air quality management programs over time.
- Demonstrate maintenance of air quality guidelines through analysis of past air quality behavior.

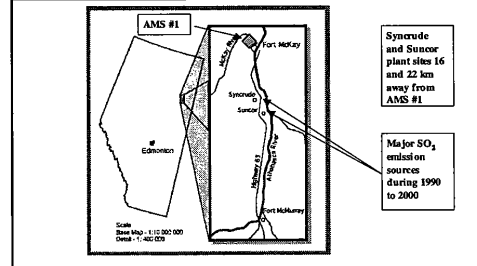
Data Management Systems

- Electronic formats a necessity for long-term access to monitoring data.
- Systems required by US EPA for compliance monitoring:*
 - open format
 - allows on-line uploading of intermittent data (from labs) and continuous data (from analyzers)
 - programmed to provide basic data analyses (QA/QC, data summaries) for periodic reporting requirements
 - allows users on-line access to generate data summary requests

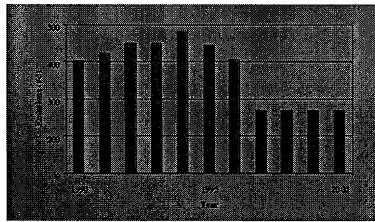
Example of SO₂ Trends – Wood Buffalo Environmental Association (WBEA)



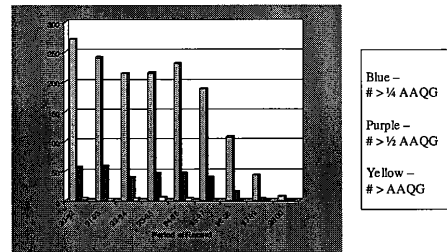
Proximity of Fort McKay Monitoring Station (AMS #1) to major SO₂ Emission Sources



Historical SO₂ Emission Rates in Oil Sands Region Between 1990 and 2000 [tonne/day]



Frequency of hourly SO₂ levels > Benchmarks for 3-year Rolling Periods, 1990 to 2000



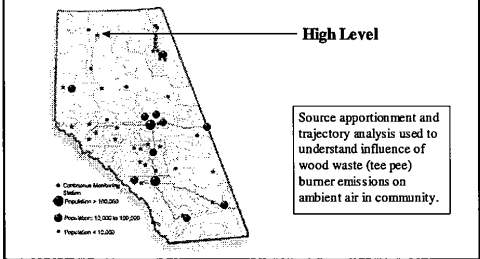
2. Source Apportionment

- Also called receptor modeling.
- Used to understand contribution of development activities to makeup of ambient air (tells you what is causing air pollution).
- Uses observed levels of chemical species in ambient air (metals, ions, VOCs).

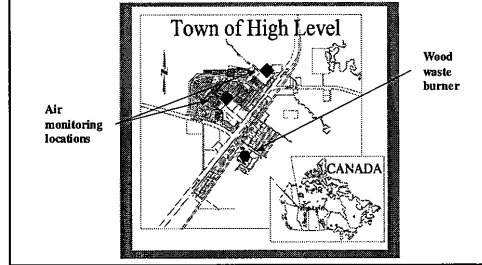
Trajectory Analysis

- Used to reveal link between measured air pollutant levels and meteorological activity:
 - also helps to identify origins of air pollutants
- Observing where air masses came from and sources at these locations.
- Used to confirm source apportionment findings.

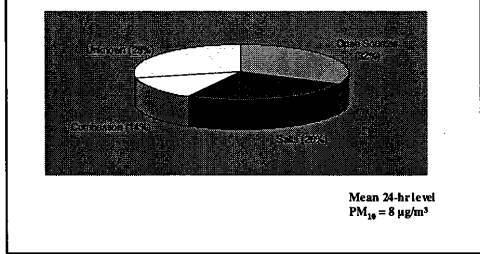
Example – High Level, AB



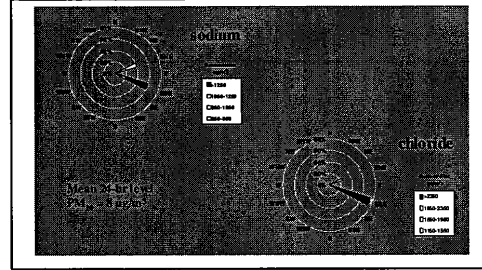
PM₁₀ Sampling Program in High Level

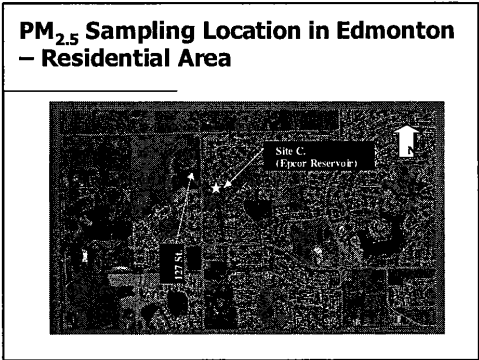
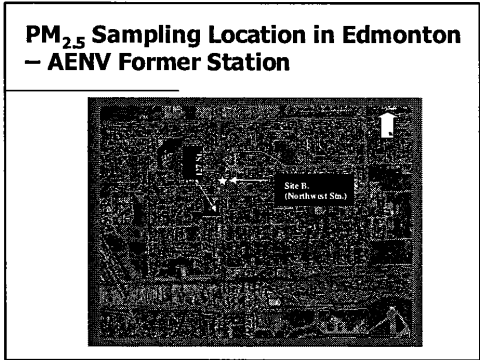
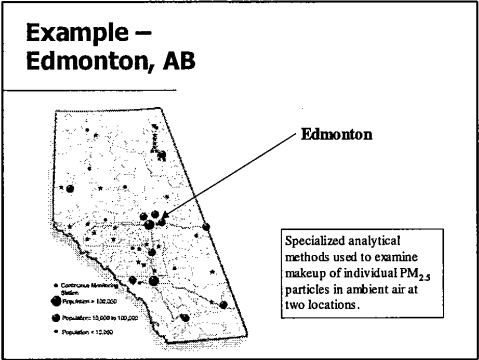
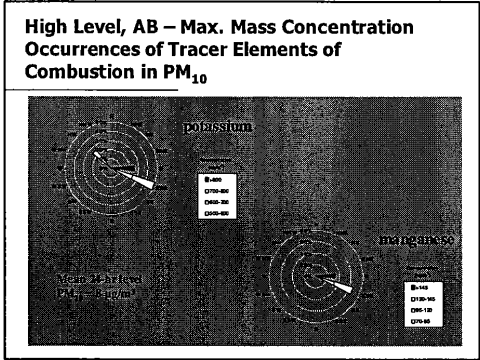


High Level – Origins of PM₁₀ based on Source Apportionment



High Level, AB – Max. Mass Concentration Occurrences of Tracer Elements for Road Salts in PM₁₀

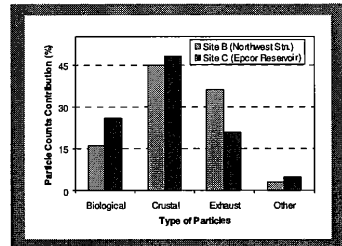




PM_{2.5} Particle classifications in Edmonton – AENV Former Station

Particles	December	July	Aug	Sept	Oct	Nov
Time	non-sources					
Biological	Feces	1	24	14	0	0
	Fibrous	2	0	2	0	0
	Other	77	47	31	27	8
Crustal	Clay	56	41	103	63	83
	S.Fine	2	27	24	26	26
	Calcium	3	3	4	16	18
	Salt	3	0	2	9	18
	Fe-sub	1	1	0	0	7
Exhaust (Vehicular/Industrial)	Combustion	2	18	27	31	40
	Oil display	30	75	90	55	45
	Sulfur	0	0	2	0	0
Other	Sulfur	0	0	0	0	5
	Precession	1	7	0	0	0
	Rust	0	3	19	9	0
Total	Magnesium	0	0	1	0	0

Edmonton – Origins of PM_{2.5} based on Individual Particle Classifications

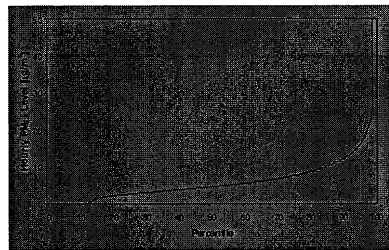


Mean 24-hr level PM_{2.5} = 9 µg/m³ (July thru November)

Update on WCAS Trend Analysis Study

- Analyze trends at Carrot Creek and Tomahawk air monitoring stations.
- Looking at data between 1997 and 2004:
 - screen data
 - develop data distributions
 - select benchmarks based on data distributions
 - perform statistical testing:
 - regression analysis & Mann-Kendal/Sen's test using significance level (p) = 0.05

Typical Example of Annual Cumulative Frequency "Data Distribution" for PM_{2.5}



Preliminary Results – Presence of Significant Trend in O₃ Concentrations

O ₃	%ile	Carrot Creek	Tomahawk
	50 th	No	No
	65 th	No	No
	80 th	No	No
	90 th	No	No
	95 th	No	No
	98 th	No	No

Preliminary Results – Presence of Significant Trend in PM_{2.5} Concentrations

PM _{2.5}	%ile	Carrot Creek	Tomahawk
	50 th	Yes ↑ (?)	No
	65 th	No	No
	80 th	No	No
	90 th	No	No
	95 th	No	Yes ↑ (?)
	98 th	No	Yes ↑ (?)

Preliminary Results – Presence of Significant Trend in SO₂ Concentrations

SO ₂	%ile	Carrot Creek	Tomahawk
	50 th	No	No
	65 th	(?)	(?)
	80 th	Yes ↓	Yes ↓
	90 th	Yes ↓	Yes ↓
	95 th	Yes ↓	Yes ↓
	98 th	No	No

Preliminary Results – Presence of Significant Trend in NO₂ Concentrations

NO ₂	%ile	Carrot Creek	Tomahawk
	50 th		No (? ↓)
	65 th		No (? ↓)
	80 th		No (? ↓)
	90 th		No (? ↓)
	95 th		No (? ↓)
	98 th		No

Questions?

