

**Ambient Air Monitoring Area Eastern Boundary
Verification Passive Monitoring Program**

June 2005

FOCUS

Purpose

The purpose of the Ambient Air Monitoring Area Eastern Boundary Verification Passive Monitoring Program is to verify the suitability of the eastern boundary of the ambient air monitoring area and to document pollutant levels in a 'region' outside of the air monitoring area and downwind of the power plants towards the edge of Edmonton city urban areas.

Table of Contents

Purpose.....	2
Table of Contents.....	3
Background.....	4
Results.....	4
Passive Monitoring Program Site Orientation	5
June 2005 Nitrogen Dioxide Average Concentrations	6
June 2005 Ozone Average Concentrations	8
June 2005 Sulphur Dioxide Average Concentrations.....	10
June 2005 Summary Statistics	12
2004 – 2005 Quarterly Summary Data	13
NO ₂ Quarterly Summary Data.....	13
O ₃ Quarterly Summary Data.....	14
SO ₂ Quarterly Summary Data.....	15

Background

The passive monitoring program includes data collected from a total of 19 passive monitoring stations. A number of the sites collect data for more than one parameter. Of these, 16 sites are used to collect ambient nitrogen dioxide (NO₂) data, 8 sites collect ozone (O₃) data and 11 collect sulphur dioxide (SO₂) data.

Results

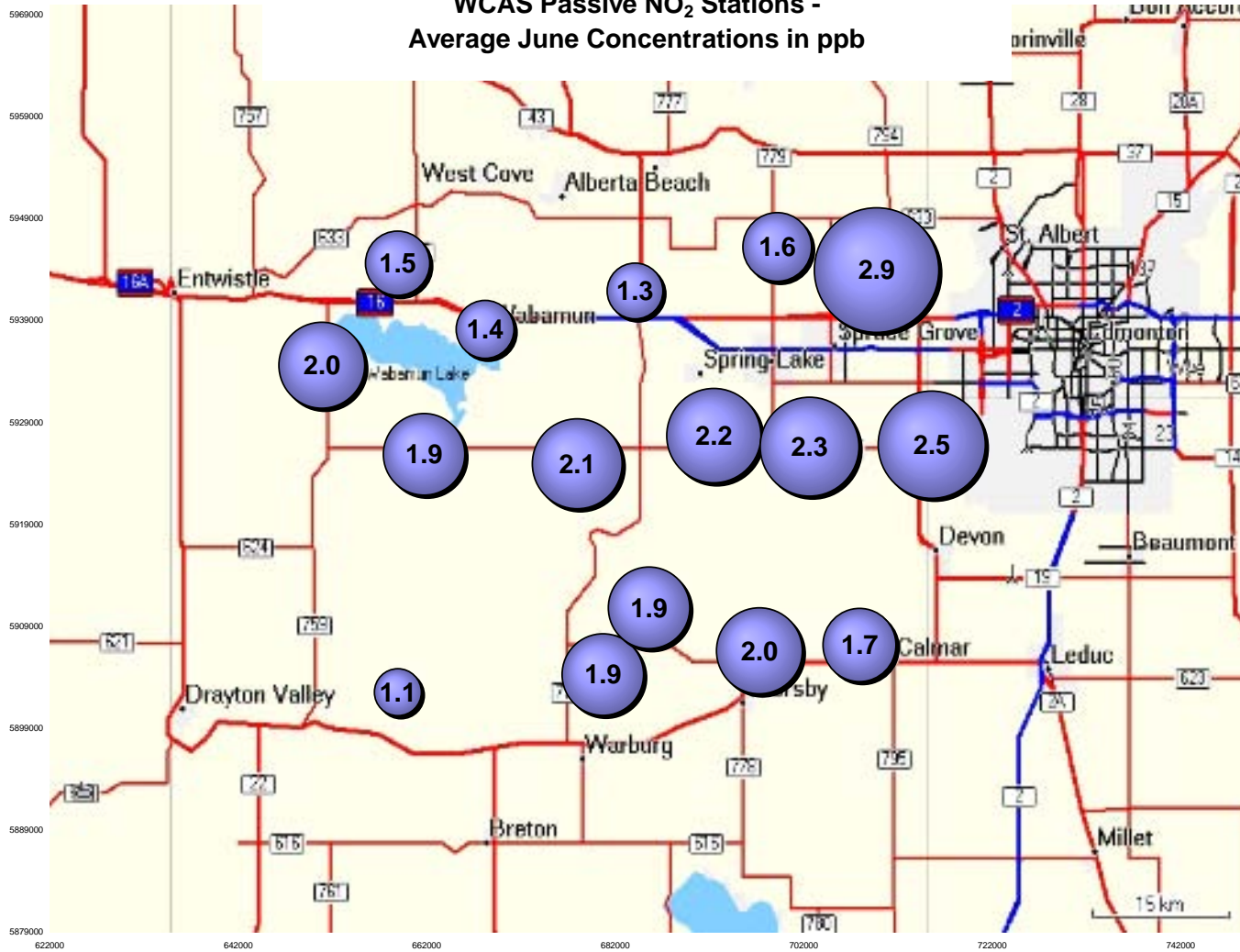
The results reported in this document are presented both as a monthly summary for the month of June, 2005 as well as a running total of the Passive Monitoring Program from January 2004 up to June, 2005.

The June, 2005 summary includes the values reported at the various passive stations for the three parameters in graphical form as well as utilizing tables. A final overall summary table reporting the average values for the three monitored parameters has been included for the month of June. The June data has also been presented in a site-by-site format for the reader as well.

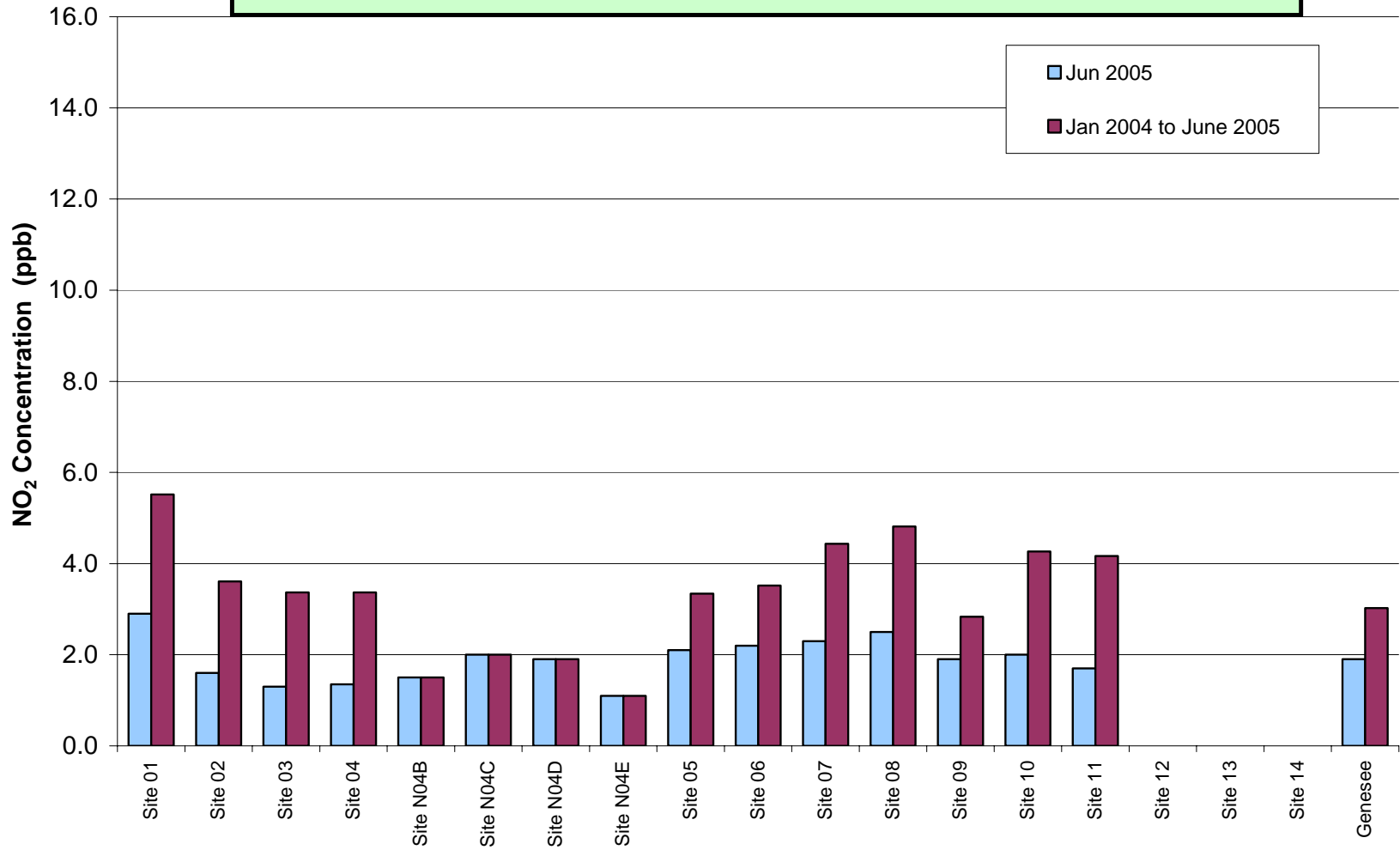
The 2004-2005 summary includes all the data collected between January 2004 and June 2005 and it also includes the overall average of the values recorded at the different sites during this time period.

June 2005 Nitrogen Dioxide Average Concentrations

WCAS Passive NO₂ Stations -
Average June Concentrations in ppb

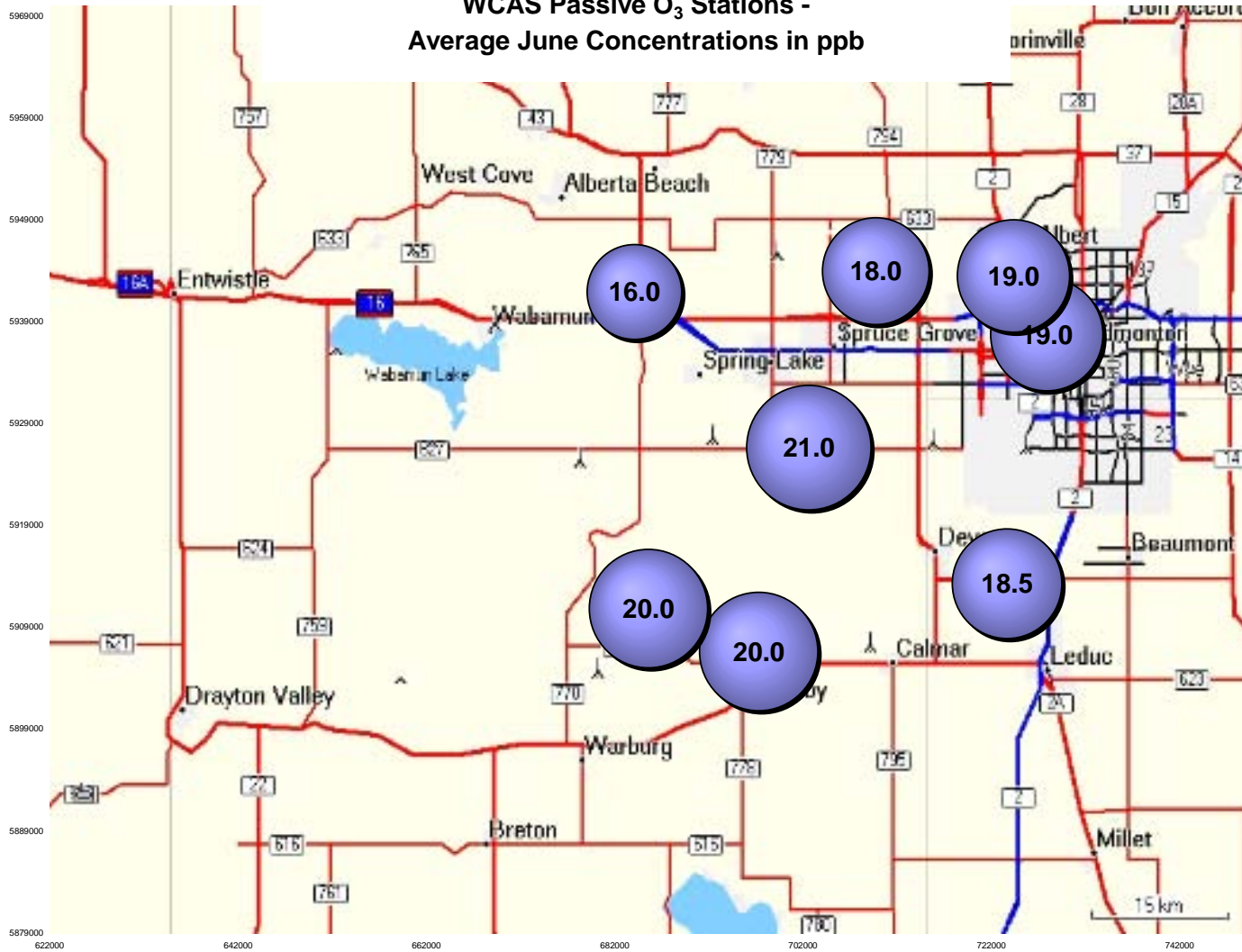


Alberta Ambient Air Quality Guidelines - Annual NO₂ Guideline is 32 ppb

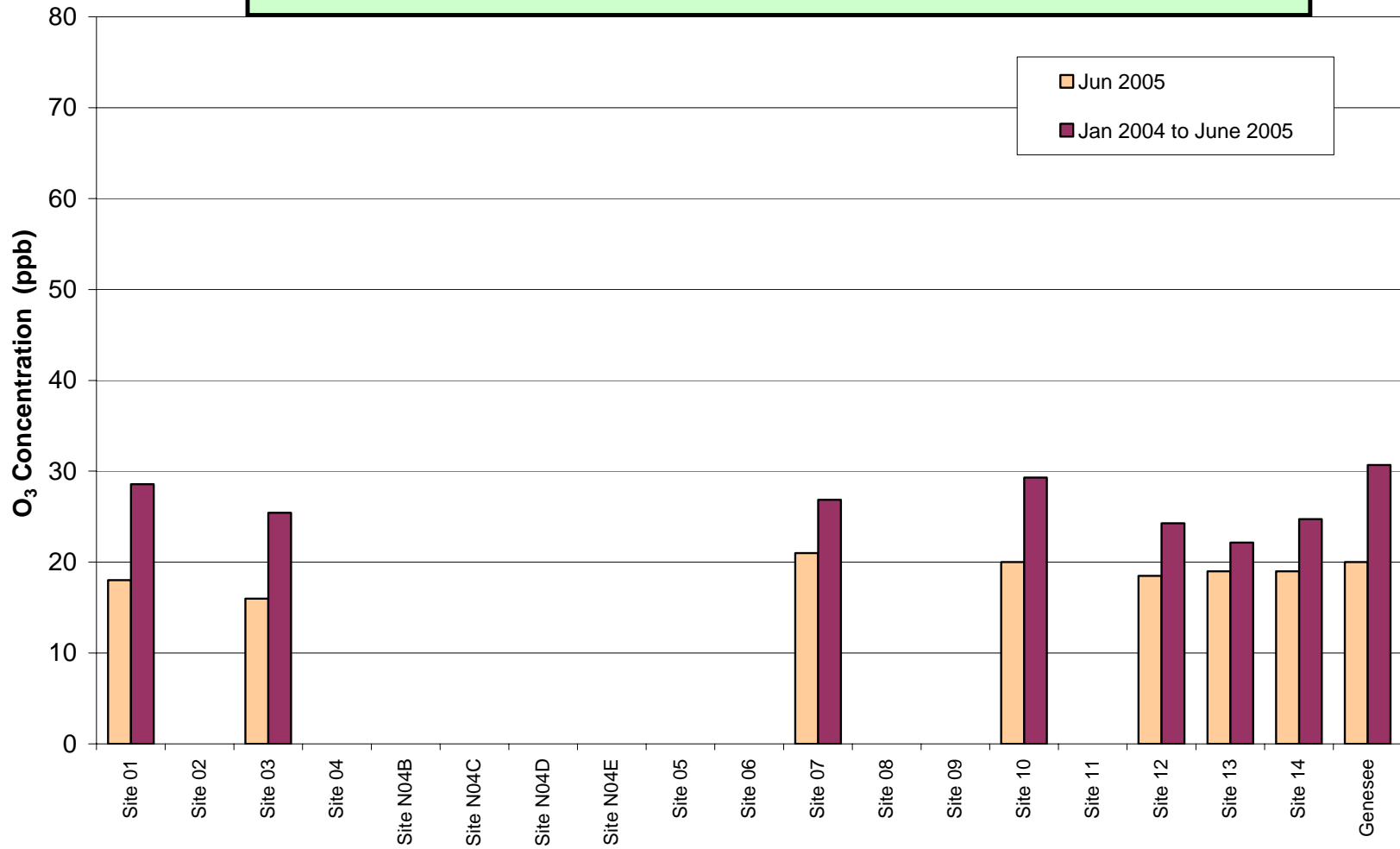


June 2005 Ozone Average Concentrations

WCAS Passive O₃ Stations -
Average June Concentrations in ppb

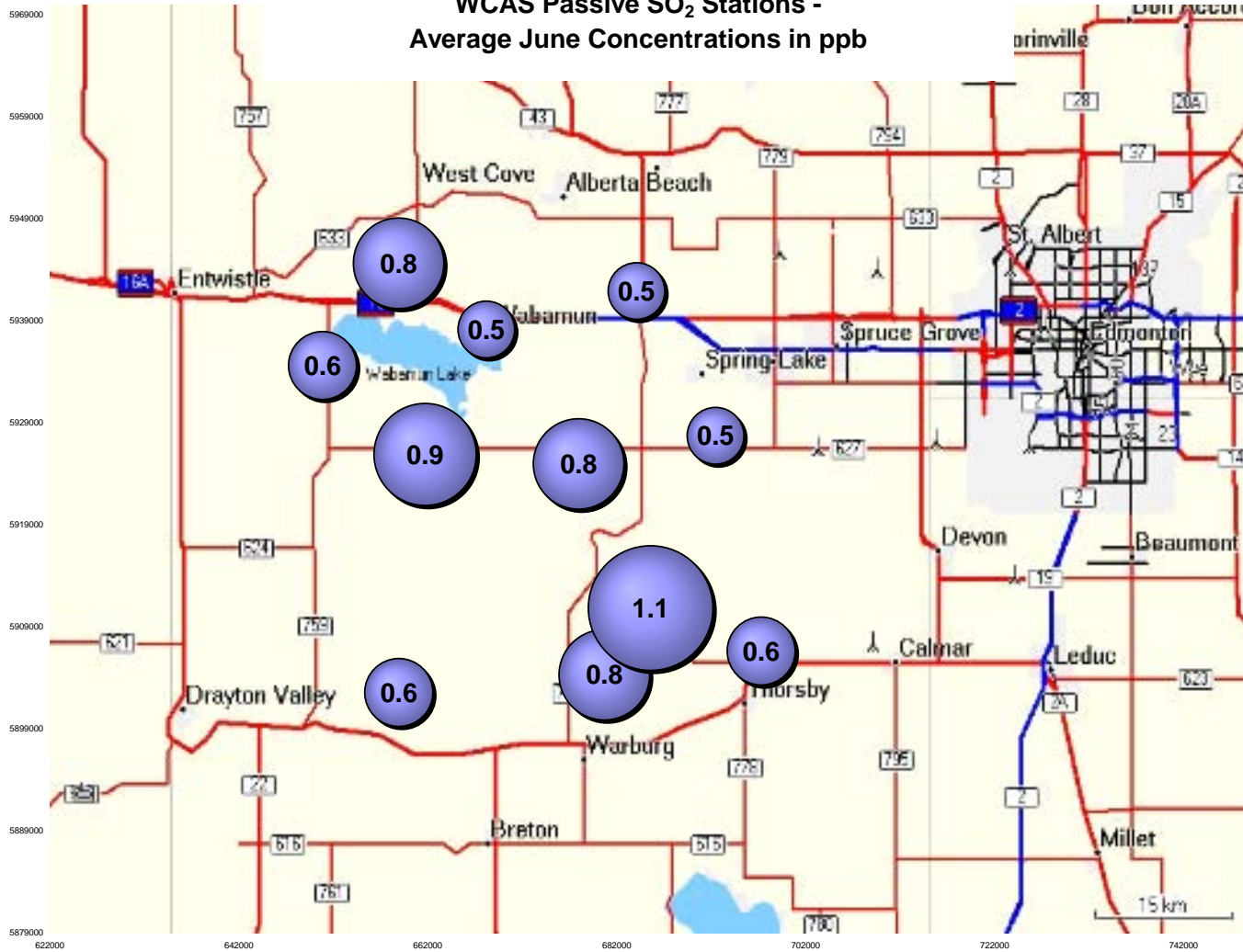


Alberta Ambient Air Quality Guidelines - No Annual O₃ Guideline

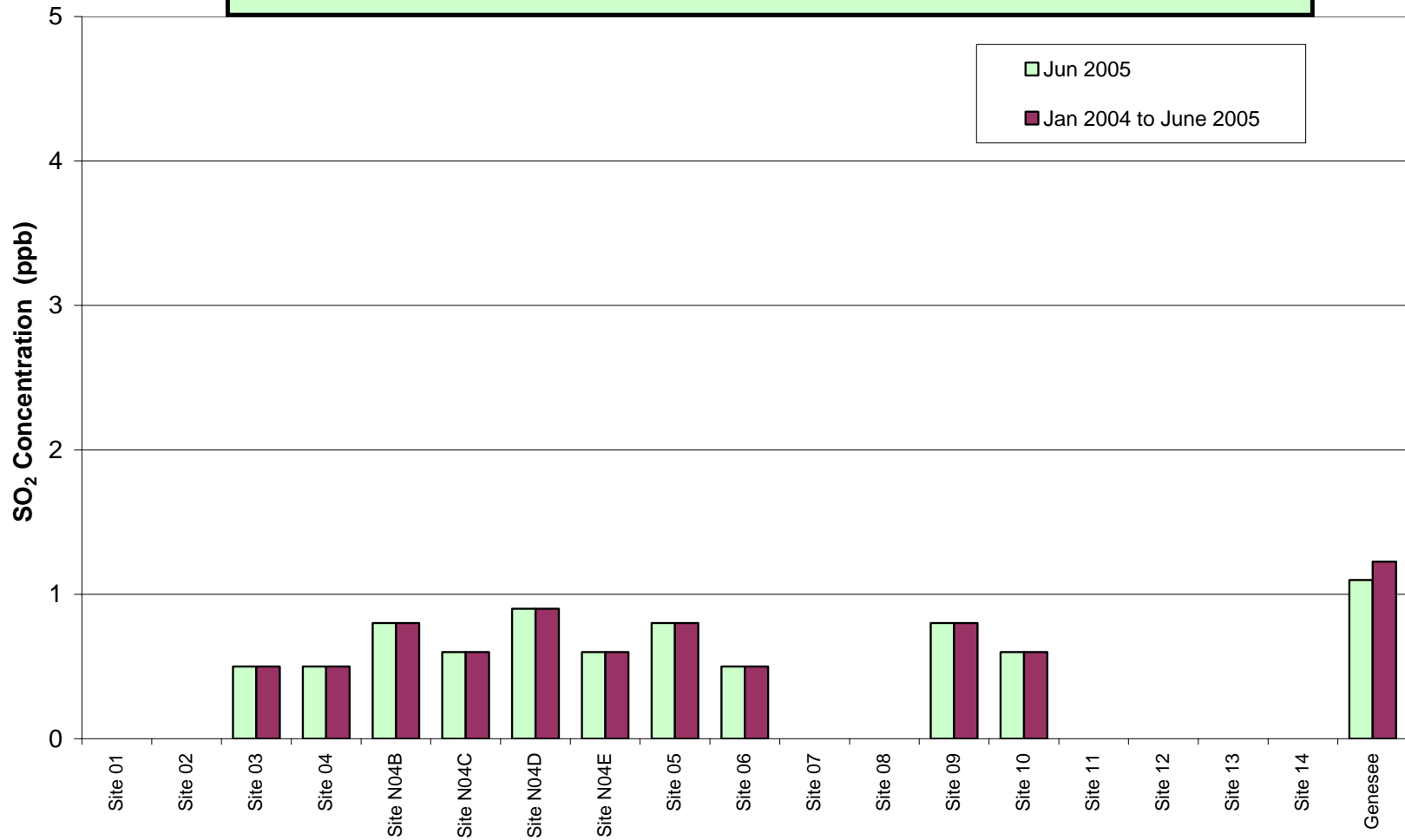


June 2005 Sulphur Dioxide Average Concentrations

WCAS Passive SO₂ Stations -
Average June Concentrations in ppb



Alberta Ambient Air Quality Guidelines - Annual SO₂ Guideline is 11 ppb



June 2005 Summary Statistics

Stats	Nitrogen Dioxide	Ozone	Sulphur Dioxide
	NO ₂	O ₃	SO ₂
	ppb	ppb	ppb
Passive Summary for June 2005 (WCAS Zone)			
Mean	1.9	18.9	0.7
Standard Deviation	0.5	1.5	0.2
Minimum	1.1	16.0	0.5
	Site N04E (#8)	Site 03 (#3)	Site 03 (#3)
Maximum	2.9	21.0	1.1
	Site 01 (#1)	Site 07 (#12)	Genesee (#21)

West Central Airshed Society - WCAS Passive Stations for June 2005							
Number	Station Name	NO ₂ ppb	O ₃ ppb	SO ₂ ppb		Easting	Northing
1	Site 01	2.9	18.0		12 U	312431	5943979
2	Site 02	1.6			12 U	301884	5946251
3	Site 03	1.3	16.0	0.5	11 U	684104	5941938
4	Site 04	1.4		0.5	11 U	668199	5938172
5	Site N04B	1.5		0.8	11 U	658913	5944652
6	Site N04C	2.0		0.6	11 U	650865	5934641
7	Site N04D	1.9		0.9	11 U	661718	5925916
8	Site N04E	1.1		0.6	11 U	658931	5902569
9	Site 05	2.1		0.8	11 U	677965	5924978
10	Site 06	2.2		0.5	11 U	692456	5927734
11	Site 07 (upto Jun 04)				12 U	305125	5926744
12	Site 07	2.3	21.0		12 U	305323	5926656
13	Site 08	2.5			12 U	318285	5926859
14	Site 09	1.9		0.8	11 U	680682	5904315
15	Site 10	2.0	20.0	0.6	12 U	299985	5906641
16	Site 11	1.7			12 U	310609	5907211
17	Site 12 (up to Jun04)				12 U	328530	5926092
18	Site 12		18.5		12 U	326363	5913301
19	Site 13		19.0		12 U	330590	5937751
20	Site 14		19.0		12 U	327054	5943513
21	Genesee	1.9	20.0	1.1	11 U	685594	5910843

Stats:							
Mean		1.9	18.9	0.7			
Standard Deviation		0.5	1.5	0.2			
Minimum		1.1				8	Site N04E
Maximum		2.9				1	Site 01
Minimum			16.0			3	Site 03
Maximum			21.0			12	Site 07
Minimum				0.5		3	Site 03
Maximum				1.1		21	Genesee

2004 – 2005 Quarterly Summary Data

NO₂ Quarterly Summary Data

Power Plant	Out In days	30-Dec	10-Feb	4-Mar	10-Apr	8-May	8-May	6-Jun	8-Jul	7-Aug	30-Aug	2-Oct	10-Oct	30-Oct	27-Nov	28-Dec	28-Dec	2-Feb	26-Feb	26-Feb	26-Mar	30-Apr	21-May	1-Jul	2004 to Date Average	
		42	23	37	28	29	32	30	23	33	20	28	31	36	24	28	35	21	41							
	Site	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2005	2005	2005	2005	2005	2005	2005	2005		
		January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June							
NO ₂	1	8.7	10.0	4.4	2.4	4.0	3.5	1.9	2.3	3.9	6.9	9.3	8.1	8.3	7.9	5.6	3.6	5.6	2.9						5.5	
	2	5.9	7.3	4.6	1.7	1.9	2.1	2.2	2.0	2.5	4.7	5.5	4.6	6.1	3.7	3.5	2.4	2.6	1.6						3.6	
	3	5.4	7.4	3.5	2.0	1.6	1.7	1.3	1.4	1.7	4.2	4.2	5.3	6.0	5.1	3.7	2.5	2.4	1.3						3.4	
	4	5.6	6.5	3.9	2.0	1.6	1.5	1.8	2.2	2.5	4.1	5.2	4.1	5.5	3.9	3.0	2.2	3.7	1.4						3.4	
	4B																								1.5	1.5
	4C																								2.0	2.0
	4D																								1.9	1.9
	4E																								1.1	1.1
	5	5.1	6.0	4.0	2.3	0.7	2.0	2.3	1.8	2.6	4.6	4.7	5.0	5.5	2.8	2.9	2.4	3.4	2.1						3.3	
	6	5.9	6.4	4.1	2.0	2.8	2.5	1.8	1.9	2.8	5	4.6	4.2	5.6	3.5	2.5	2.3	3.1	2.2						3.5	
	7a	5.5	7.7	4.1	2.3	2.5	3.3																		4.2	
	7b							2.5	3.1	3.5	6.3	6.4	5.4	7.7	5.5	3.9	3.2	3.4	2.3						4.4	
	8	6.7	10.0	4.5	2.0	3.3	2.8	2.4	2.2	3.5	5.8	6.6	6.4	8.6	7.8	5.0	3.3	3.2	2.5						4.8	
	9	4.1	5.3	2.9	2.2	2.4	2.6	1.6	1.4	1.9	3.4	3.0	3.9	4.2	2.3	1.8	3.1	3.1	1.9						2.8	
10	7.5	8.2	4.2	2.1	2.7	2.1	2.6	2.0	2.3	4.8	7.6	5.8	7.1	4.9	3.6	3.4	3.8	2.0						4.3		
11	6.7	7.4	4.3	2.2	3.1	1.6		2.3	3	5.1	5.6	5.3	7.2	5.1	3.5	3.0	3.7	1.7						4.2		
12a																										
12b																										
13																										
14																										
Genesee						2.4	2.1	2.1	4.2	5.2	4.3	2.9	2.7	2.4	2.9	3.2	1.9								3.0	
D1a		5.3	5.4	4.3	2.0	2.6	2.1	1.8	2.1	3.6	3.4	5.6	4.9	5.6	3.9	1.7	3.4	2.4	1.2							
D2a		6.5	5.3	4.2	2.1	2.2	2.1	1.8	1.9	4.1	3.4	5.4	5.1	5.6	3.8	1.8	2.6	2.8	1.5							
D1b								2.7																		
D2b								2.1																		
		19.3%	0.7%	3.3%	6.9%	18.3%	2.8%	2.1%	12.5%	13.0%	0.0%	3.6%	4.0%	0.0%	2.6%	5.7%	26.7%	15.4%	22.2%							

O₃ Quarterly Summary Data

Power Plant	Out In days	30-Dec	10-Feb	4-Mar	10-Apr	8-May	6-Jun	8-Jul	7-Aug	30-Aug	10-Oct	30-Oct	27-Nov	28-Dec	2-Feb	26-Feb	26-Mar	26-Mar	30-Apr	30-Apr	21-May	21-May	2004 to Date Average	
		10-Feb	4-Mar	10-Apr	8-May	6-Jun	8-Jul	7-Aug	30-Aug	2-Oct	30-Oct	27-Nov	28-Dec	2-Feb	26-Feb	26-Mar	30-Apr	21-May	1-Jul					
Site		2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2005	2005	2005	2005	2005	2005	2005	2005		
		January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June					
O ₃	1	27.3	40.1	38.4	35.8	33.5	26.2	23.0	15.3	16.0	25.0	23.0	24.0	27.0	36.0	43.0	35.0	28.0	18.0				28.6	
	2	31.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	28.4	35.8	36.5	32.5	27.1	25.7	20.6	13.4	14.0	23.0	17.0	21.0	21.0	30.0	39.0	30.0	27.0	16.0				25.4	
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	4C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	4D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	4E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	7a	29.8	44.5	37.1	38.2	32.0	31.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.5
	7b	-	-	-	-	-	-	-	26.3	19.1	14.0	29.0	22.0	25.0	24.0	33.0	39.0	38.0	32.0	21.0				26.9
	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	31.1	39.1	35.4	40.0	35.4	28.1	22.6	18.1	14.0	26.0	22.0	24.0	27.0	35.0	43.0	36.0	31.0	20.0					29.3	
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12a	26.2	38.5	39.2	37.5	31.8	32.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34.2	
12b	-	-	-	-	-	-	-	28.7	15.5	14.5	27.0	16.0	22.0	23.0	30.0	38.0	29.0	29.0	18.5				24.3	
13	19.1	24.5	29.5	34.1	30.0	27.4	29.9	21.0	12.0	14.0	14.0	11.0	14.0	13.0	17.0	26.0	28.0	29.0	19.0				22.1	
14	22.3	33.2	29.3	35.0	30.9	29.2	22.4	15.5	12.0	19.5	15.0	20.0	19.5	27.0	37.0	29.0	29.0	19.0					24.7	
Genesee						31.4	25.1	16.9	-	-	-	-	-	-	43.0	41.0	35.0	33.0	20.0				30.7	
D1a	30.2	38.9	37.0	39.1	32.7	28.5	27.3	17.6	16.0	21.0	11.0	-	-	19.0	31.0	36.0	37.0	27.0	19.0					
D2a	26.5	39.2	41.5	37.3	31.3	34.5	25.3	18.7	-	18.0	11.0	-	-	20.0	29.0	38.0	39.0	27.0	18.0					
D1b									16.0															
D2b									13.0															
		13.2%	0.7%	11.5%	4.6%	4.4%	19.1%	7.5%	6.1%		15.4%	0.0%		5.1%	6.7%	5.4%	5.3%	0.0%	5.4%					

