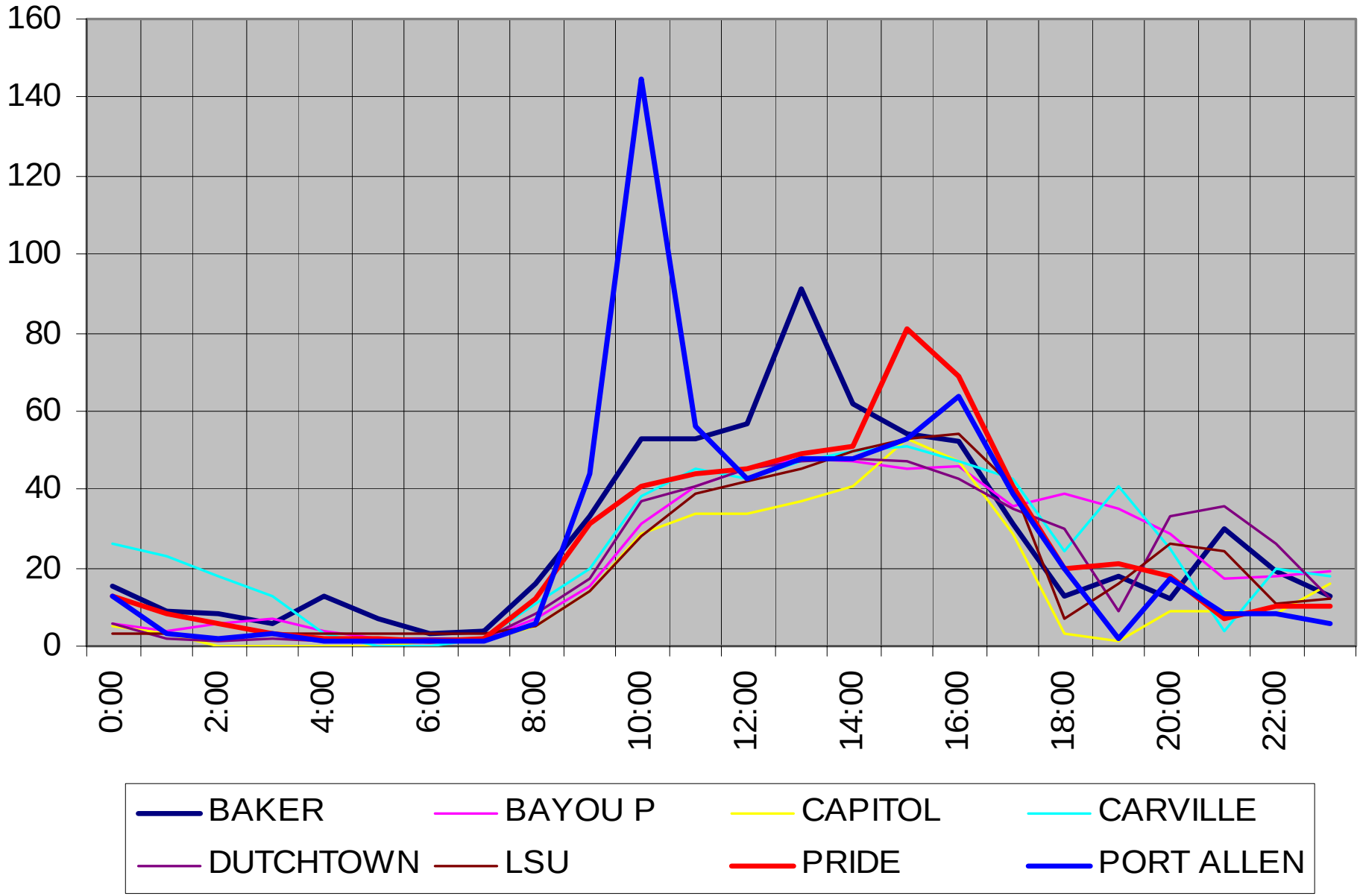
Technical Review Team Meeting
Ozone Episode Jan. 31, 2006

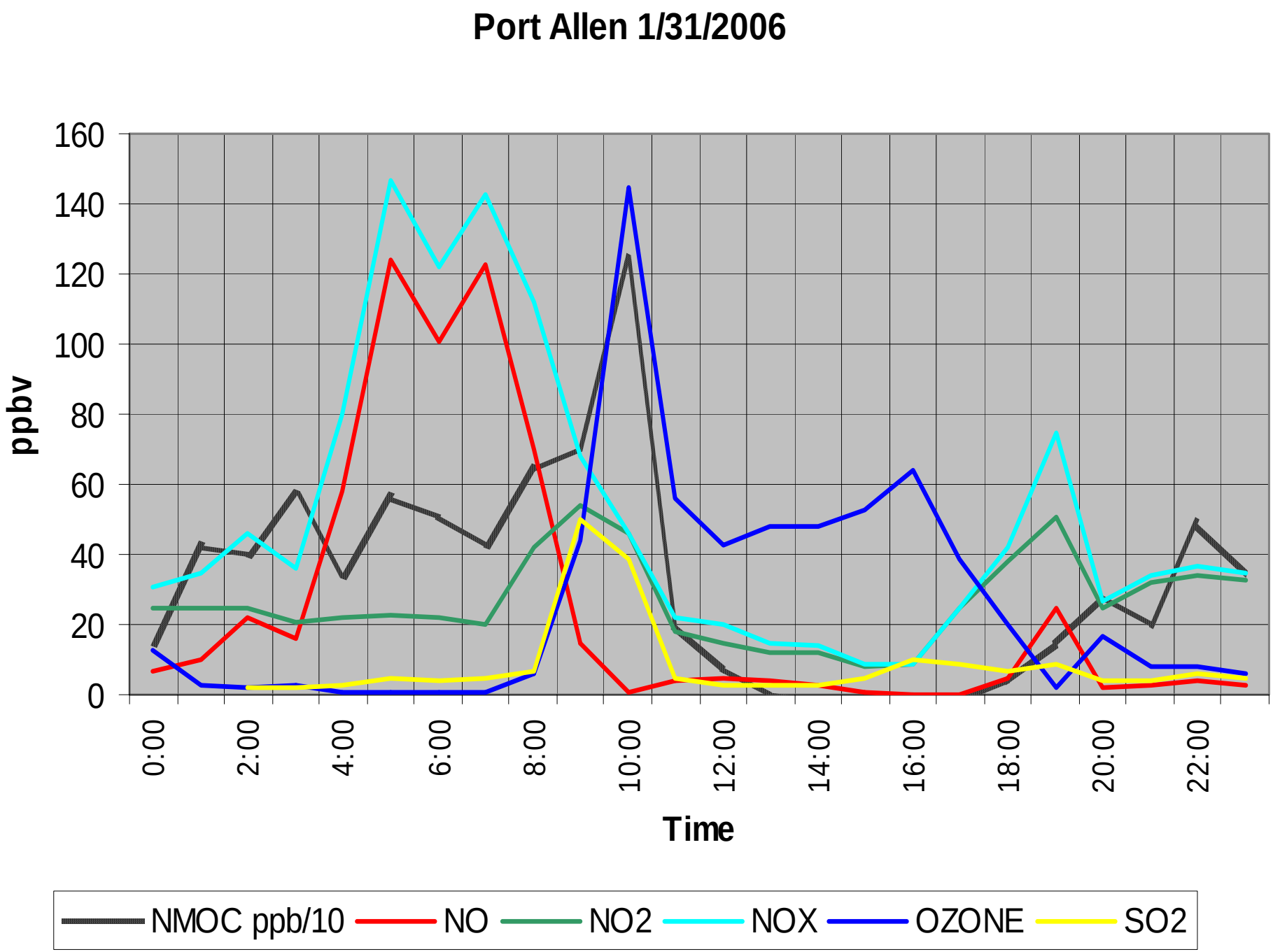
March 16, 2006

Jan 31 High Ozone Day Summary

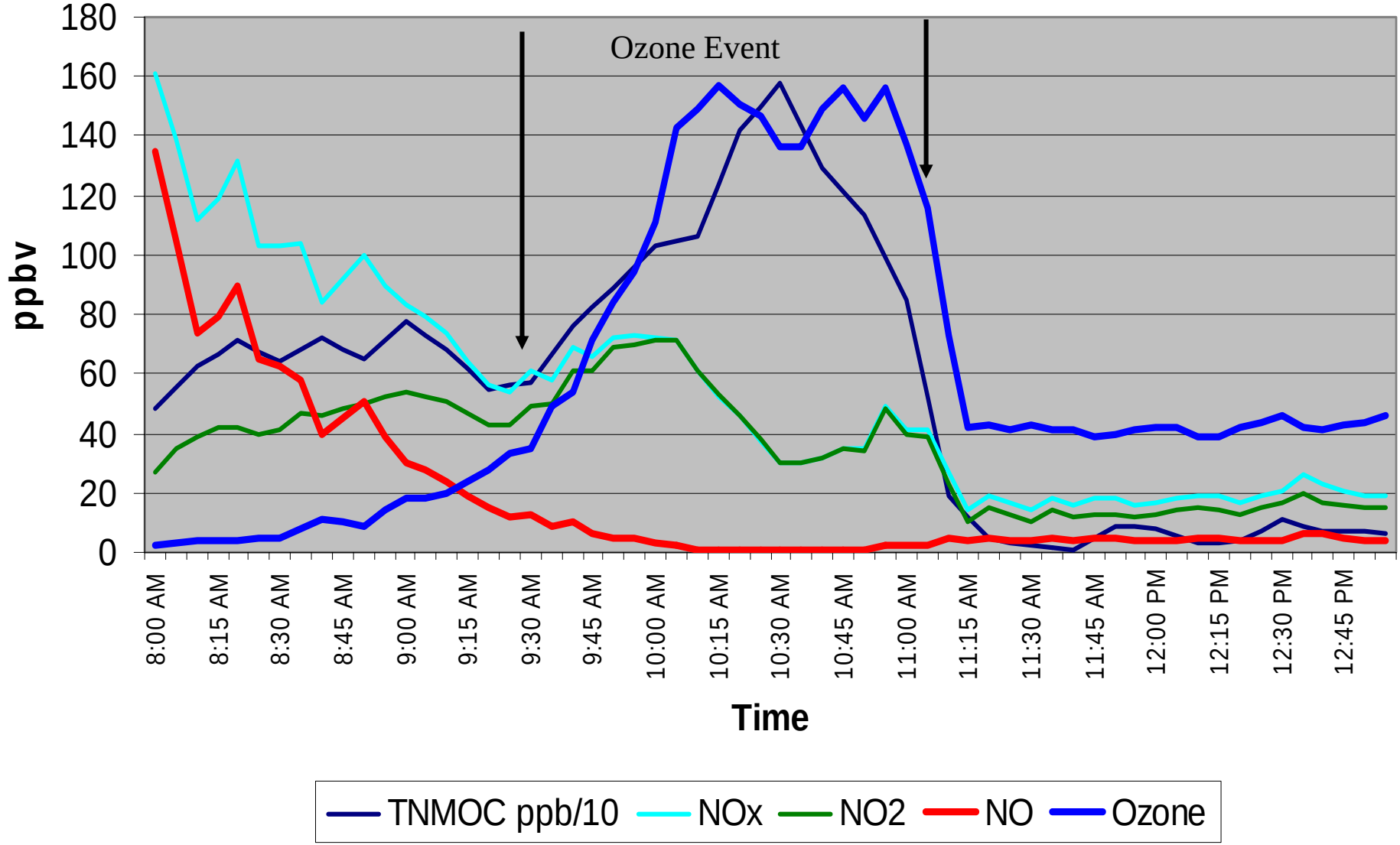
- 1-hr Port Allen 145 ppbv (10 – 11 am)
  - Baker 91 ppbv
  - Pride 81 ppbv
- 8-hr No 8-hour events
  - Port Allen - 62
- 3 VOC strike samples triggered
  - Capitol – 3:30 am
  - Southern – 7:10 am
  - Port Allen – 10:40 am
- Very high NOx levels (mostly NO)

1/31/2006 Hourly Ozone

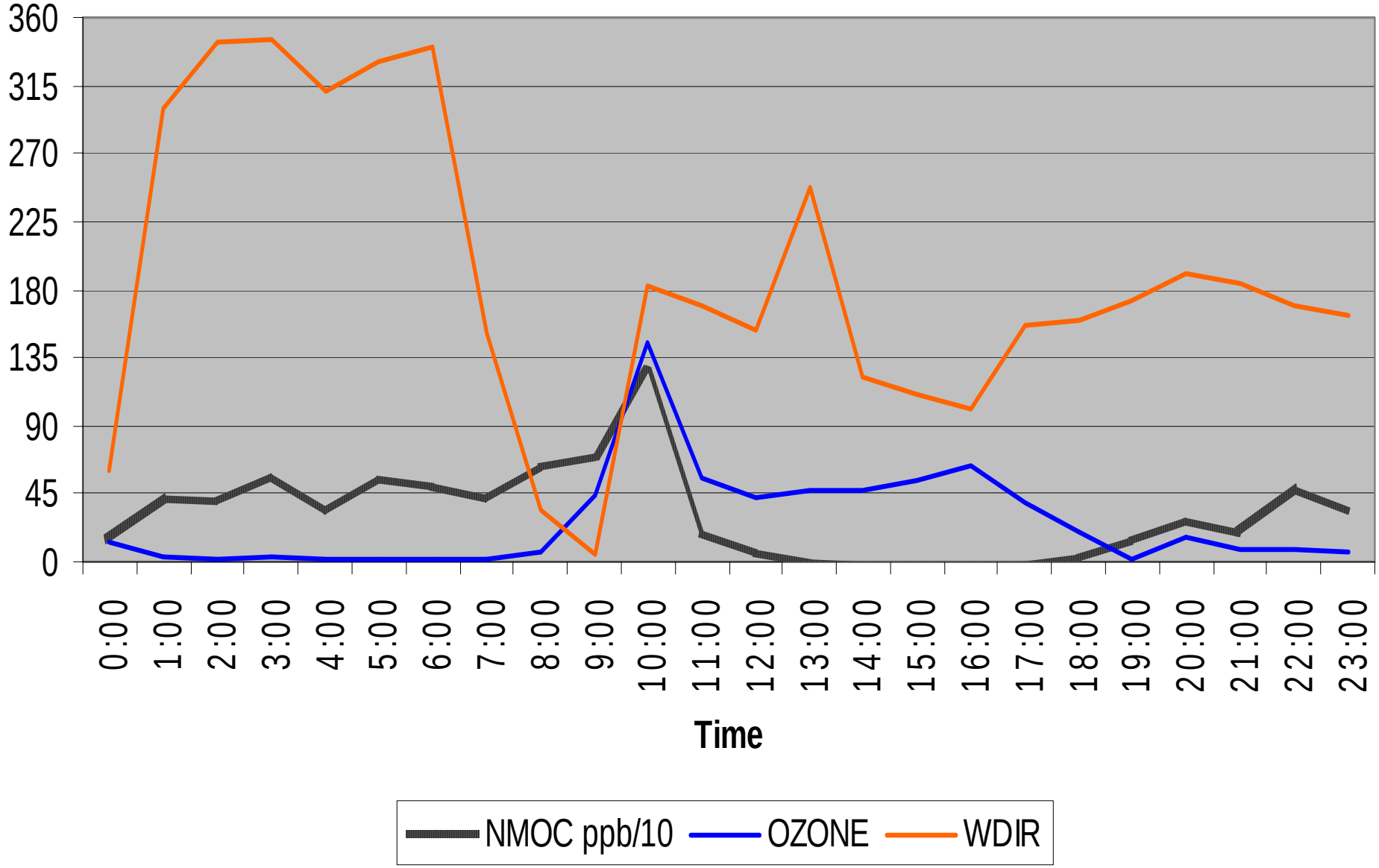



Port Allen 1/31/2006
ppbv
160
140
120
100
80
60
40
20
0
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Time
NMOC ppb/10
NO
NO2
NOX
OZONE
SO2

Port Allen 1/31/2006
5-min Data



Port Allen 1/31/2006



Logger Name : CAPITOL
Logger Id : CS
Parameter : NMOC
Units : PPMC

Date Time 010M	Minute 00	10	20	30	40	50
01/31/06 00:00	.00	.00	.01	.01	.09	.00
01/31/06 01:00	.00	.11	.02	.02	.00	.06
01/31/06 02:00	.00	.38	.96	.71	.51	.51
01/31/06 03:00	.28	.45	**1.68h**	**2.00h**	**3.93h**	**5.12h**
01/31/06 04:00	**4.66h**	**4.18h**	**3.30h**	**3.21h**	**3.01h**	**2.87h**
01/31/06 05:00	**3.23h**	**3.44h**	**3.37h**	**3.21h**	**2.82h**	**2.73h**
01/31/06 06:00	**2.99h**	**3.40h**	**2.71h**	**2.50h**	**2.25h**	**1.80h**
01/31/06 07:00	**1.46**	**1.53h**	.89	.83	**1.25**	.60
01/31/06 08:00	.64	.68	.48	.44	.35	.38
01/31/06 09:00	.32	.22	.08	.04	.06	.07
01/31/06 10:00	.00	.00	.00	.00	.00	.00
01/31/06 11:00	.00	.00	.00	.00	.00	.00

Louisiana Department of Environmental Quality
Air Toxics Laboratory
2/6/2006

Sample Analysis Report - EPA Method For the Determination of Ozone Precursors in Ambient Air

Sample ID #:	AJ03938	**Analyst:**	HFL	**Canister ID:**	G1120
Date Collected:	1/31/2006	**Sample Collector:**		J_WIESEPAPE	**Analysis Date:** 2/6/2006
Initial Pressure:	17.9	**Dilution Factor:**	1		
Sampling Point:	CAN_CAP	**Date in Lab:**	1/31/2006		
Sample Comments:					
Sample Duration:	.42	**Sample Start Hour:**		3:30	

Analysis Method: **Gas Chromatograph separation with Flame Ionization Detector.**

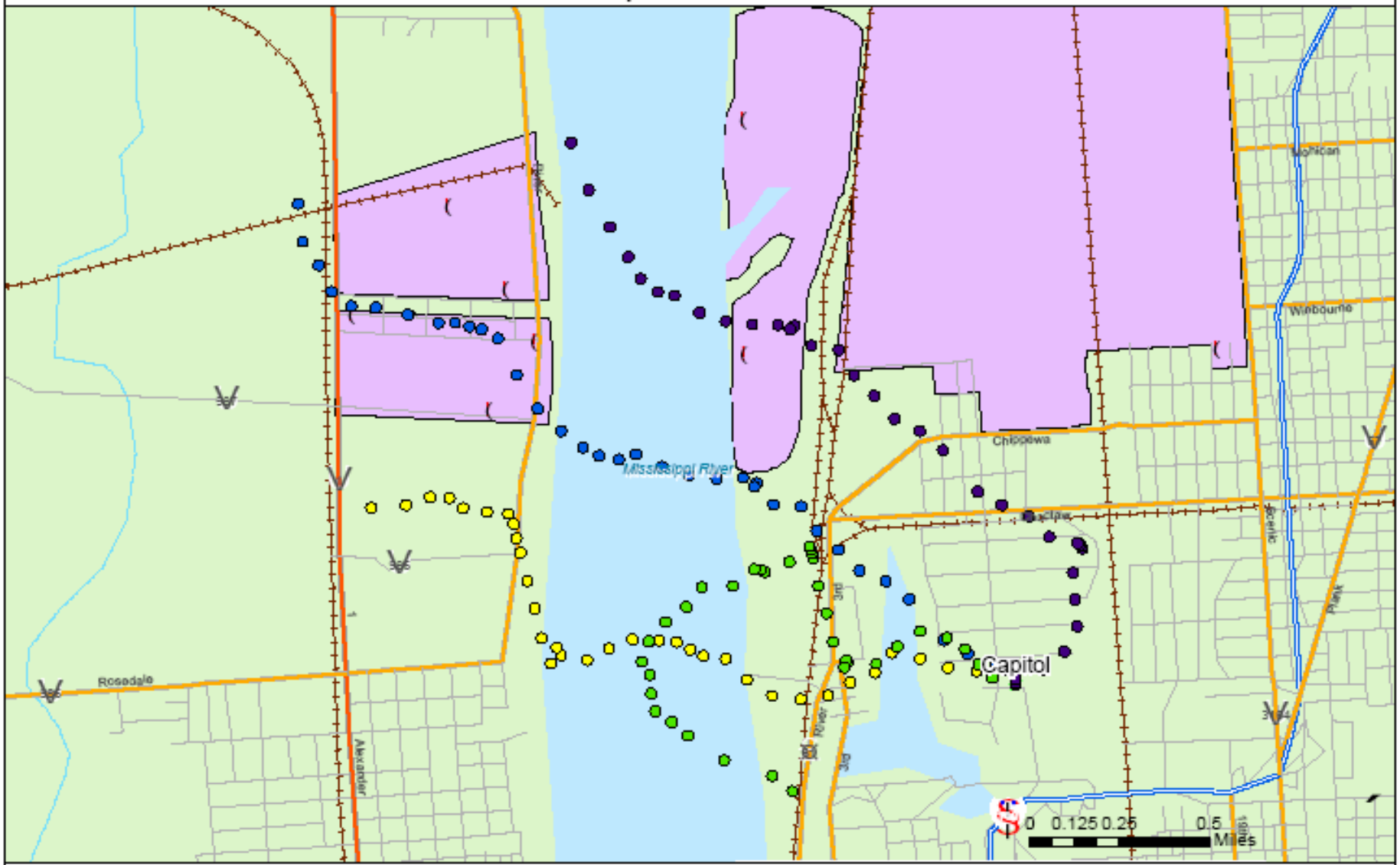
Concentrations in parts per billion carbon (ppbc) or methane equivalence

Acetylene	5.04	**3-methylhexane**	9.02
Ethylene	17.40	**2,2,4-trimethylpentane**	15.98
Ethane	55.56	**n-Heptane**	7.97
Propylene	31.91	**Methylcyclohexane**	5.60
Propane	124.77	**2,3,4-trimethylpentane**	4.06
Isobutane	120.11	**Toluene**	29.87
1-butene	22.49	**2-methylheptane**	1.99
n-Butane	**588.57**	**3-methylheptane**	1.79
trans-2-Butene	77.14	**n-Octane**	3.56
cis-2-Butene	102.69	**Ethylbenzene**	2.38
2-methylbutane	**646.69**	**m/p Xylene**	8.84
1-Pentene	56.29	**Styrene**	0.89
n-Pentane	**167.61**	**o Xylene**	3.16
Isoprene	3.86	**n-Nonane**	0.93
trans-2-Pentene	104.54	**Cumene**	0.40
cis-2-Pentene	56.91	**n-propylbenzene**	0.59
2,2-dimethylbutane	6.15	**m-ethyltoluene**	2.14
Cyclopentane	9.62	**p-ethyltoluene**	0.80
2,3-dimethylbutane	24.56	**1,3,5-trimethylbenzene**	1.01
2-methylpentane	80.35	**o-ethyltoluene**	0.73
3-methylpentane	73.62	**1,2,4-trimethylbenzene**	7.30
1-Hexene	5.07	**n-Decane**	0.96
n-Hexane	**194.69**	**1,2,3-trimethylbenzene**	1.07
Methylcyclopentane	64.08	**m-diethylbenzene**	0.37
2,4-dimethylpentane	6.05	**p-diethylbenzene**	0.67
Benzene	16.79	**n-Undecane**	1.44
Cyclohexane	11.05	**1,3-butadiene**	27.46
2-methylhexane	9.58	**Total NMOC (ppbc)**	**3380.00**
2,3-dimethylpentane	4.30		

Backward Trajectory

Capitol Monitor

31 January 2006 03:30 to 06:30



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Map Number: 200604036
Map Date: 002/03/2006
Projection: UTM, NAD 83
Source: LDOTD; LDEQ; ESRI

- AOC Monitoring Sites
- LDEQ Ambient Monitoring Sites
- BC 20060131 0330 3hr
- BC 20060131 0430 3hr
- AOC Facility Outline
- 5 Parish Non-attainment Area
- BC 20060131 0530 3hr
- BC 20060131 0630 3hr

Logger Name : Southern University
Logger Id : SU
Parameter : NMOC
Units : PPMC

Date	Time 010M	0	10	20	30	Minute 40	50
1/31/2006	0:00	.01	-0.01	0.09	-0.01	-0.01	0.49
1/31/2006	1:00	0.17	0.46	0.03	0.08	0.43	0.23
1/31/2006	2:00	0.39	0.81	0.65	0.63	0.62	0.74
1/31/2006	3:00	0.65	0.69	1.22	1.08	0.94	0.97
1/31/2006	4:00	0.95	0.96	1.17	0.95	0.92	1.07
1/31/2006	5:00	1.42	1.25	0.88	0.89	0.82	0.76
1/31/2006	6:00	0.82	0.8	0.88	**1.02**	**1.05**	**1.22**
1/31/2006	7:00	**1.58h**	**2.01h**	**1.99h**	**1.87h**	**1.68h**	0.91
1/31/2006	8:00	0.60	0.42	0.48	0.32	0.31	0.37
1/31/2006	9:00	0.44	0.51	0.46	0.42	1.35	2.07h
1/31/2006	10:00	.14	0.33	-0.01	-0.01	-0.01	-0.01
1/31/2006	11:00	.01	0.05	0.02	-0.01	0.03	-0.01
1/31/2006	12:00	.01	-0.01	-0.01	0.06	0.14	0.04

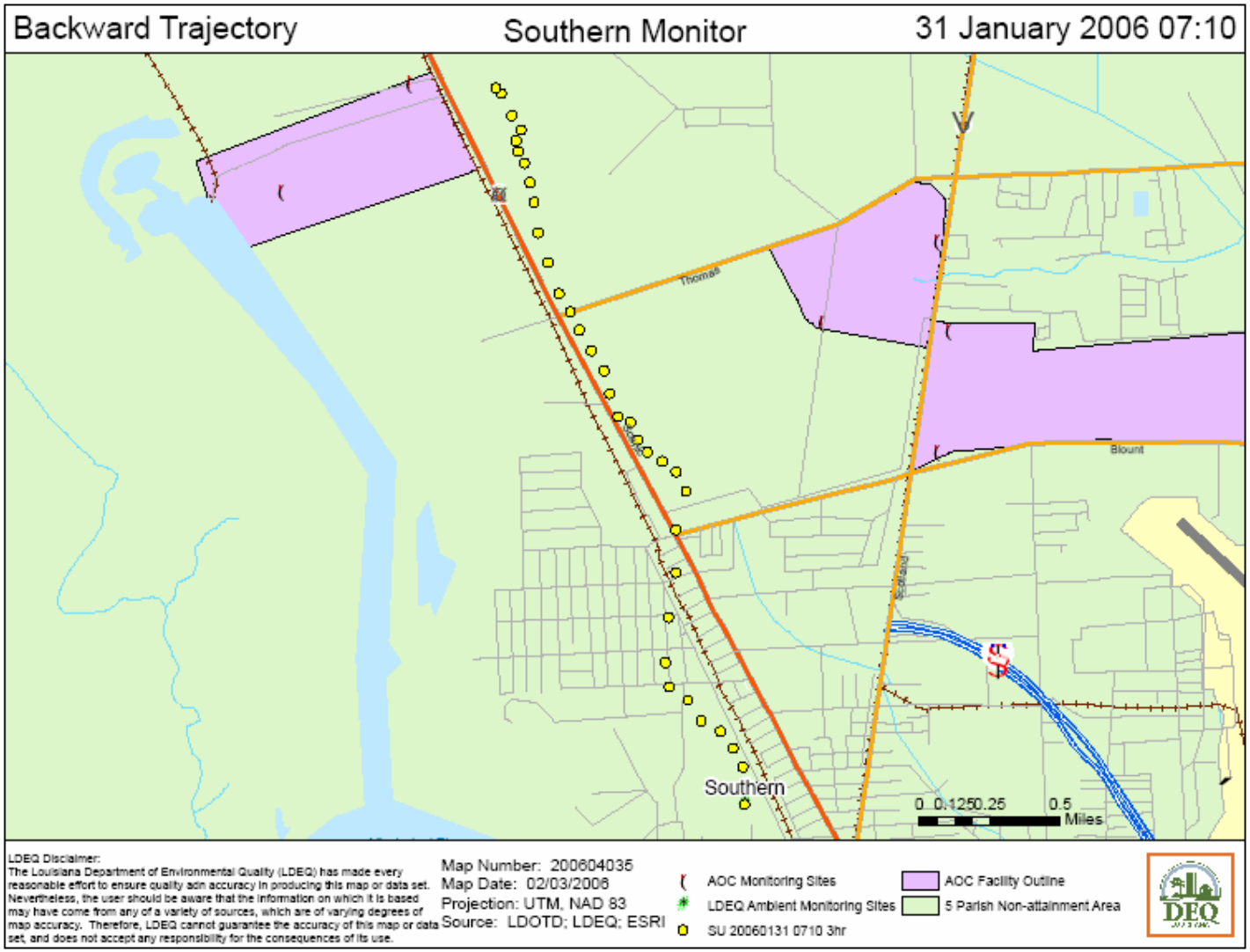
Sample Analysis Report - EPA Method For the Determination of Ozone Precursors in Ambient Air

Sample ID #:	AJ03944	**Analyst:**	HFL	**Canister ID:**	G1206
Date Collected:	1/31/2006	**Sample Collector:**		G_JENKINS	**Analysis Date:** 2/6/2006
Initial Pressure:	18.6	**Dilution Factor:**	1		
Sampling Point:	CAN_SUB	**Date in Lab:**	2/1/2006		
Sample Comments:					
Sample Duration:	.42	**Sample Start Hour:**		7:10	

Analysis Method: **Gas Chromatograph separation with Flame Ionization Detector.**

Concentrations in parts per billion carbon (ppbc) or methane equivalence

Acetylene	23.07	**3-methylhexane**	17.67
Ethylene	62.93	**2,2,4-trimethylpentane**	39.98
Ethane	39.46	**n-Heptane**	20.89
Propylene	15.89	**Methylcyclohexane**	23.04
Propane	55.62	**2,3,4-trimethylpentane**	10.64
Isobutane	**84.65**	**Toluene**	62.96
1-butene	14.70	**2-methylheptane**	9.34
n-Butane	**493.60**	**3-methylheptane**	6.61
trans-2-Butene	18.22	**n-Octane**	16.01
cis-2-Butene	12.36	**Ethylbenzene**	11.02
2-methylbutane	**289.23**	**m/p Xylene**	41.45
1-Pentene	10.45	**Styrene**	2.61
n-Pentane	**104.89**	**o Xylene**	13.68
Isoprene	1.83	**n-Nonane**	11.74
trans-2-Pentene	28.48	**Cumene**	2.40
cis-2-Pentene	13.12	**n-propylbenzene**	3.32
2,2-dimethylbutane	5.91	**m-ethyltoluene**	10.28
Cyclopentane	8.58	**p-ethyltoluene**	4.25
2,3-dimethylbutane	20.16	**1,3,5-trimethylbenzene**	4.95
2-methylpentane	57.02	**o-ethyltoluene**	4.41
3-methylpentane	36.68	**1,2,4-trimethylbenzene**	22.39
1-Hexene	4.96	**n-Decane**	4.95
n-Hexane	46.31	**1,2,3-trimethylbenzene**	3.49
Methylcyclopentane	28.42	**m-diethylbenzene**	1.87
2,4-dimethylpentane	7.11	**p-diethylbenzene**	2.36
Benzene	25.79	**n-Undecane**	.10
Cyclohexane	12.82	**1,3-butadiene**	2.66
2-methylhexane	15.53	**Total NMOC (ppbc)**	**2278.00**
2,3-dimethylpentane	8.58		


Backward Trajectory
Southern Monitor
31 January 2006 07:10
Thomas
Blount
Southern
0 0.1250.25 0.5
Miles
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Map Number: 200604035
Map Date: 02/03/2006
Projection: UTM, NAD 83
Source: LDOTD; LDEQ; ESRI
AOC Monitoring Sites
LDEQ Ambient Monitoring Sites
SU 20060131 0710 3hr
AOC Facility Outline
5 Parish Non-attainment Area
DEQ

Logger Name : PRTALLEN
Logger Id : PA
Parameter : NMOC
Units : PPMC

Time			Minute			
Date	010M	00	10	20	30	40	50
01/31/06	00:00	-.03	-.03	.01	.07	.31	.56
01/31/06	01:00	1.27	.57	.28	.12	.10	.17
01/31/06	02:00	.56	.69	.34	.25	.25	.35
01/31/06	03:00	.48	.61	.75	.51	.47	.60
01/31/06	04:00	.32	.35	.36	.22	.25	.52
01/31/06	05:00	.45	.38	.40	.66	.78	.66
01/31/06	06:00	.65	.78	.56	.38	.32	.38
01/31/06	07:00	.39	.42	.42	.35	.42	.56
01/31/06	08:00	.48	.63	.71	.64	.72	.65
01/31/06	09:00	.78	.68	.55	.57	.76	.89
01/31/06	10:00	**1.03**	**1.06**	**1.42**	**1.58h**	**1.29**	**1.13**
01/31/06	11:00	.85	.19P	.05	.02	.01	.09
01/31/06	12:00	.08	.03	.04	.11	.07	.07

Louisiana Department of Environmental Quality
Air Toxics Laboratory

2/2/2006

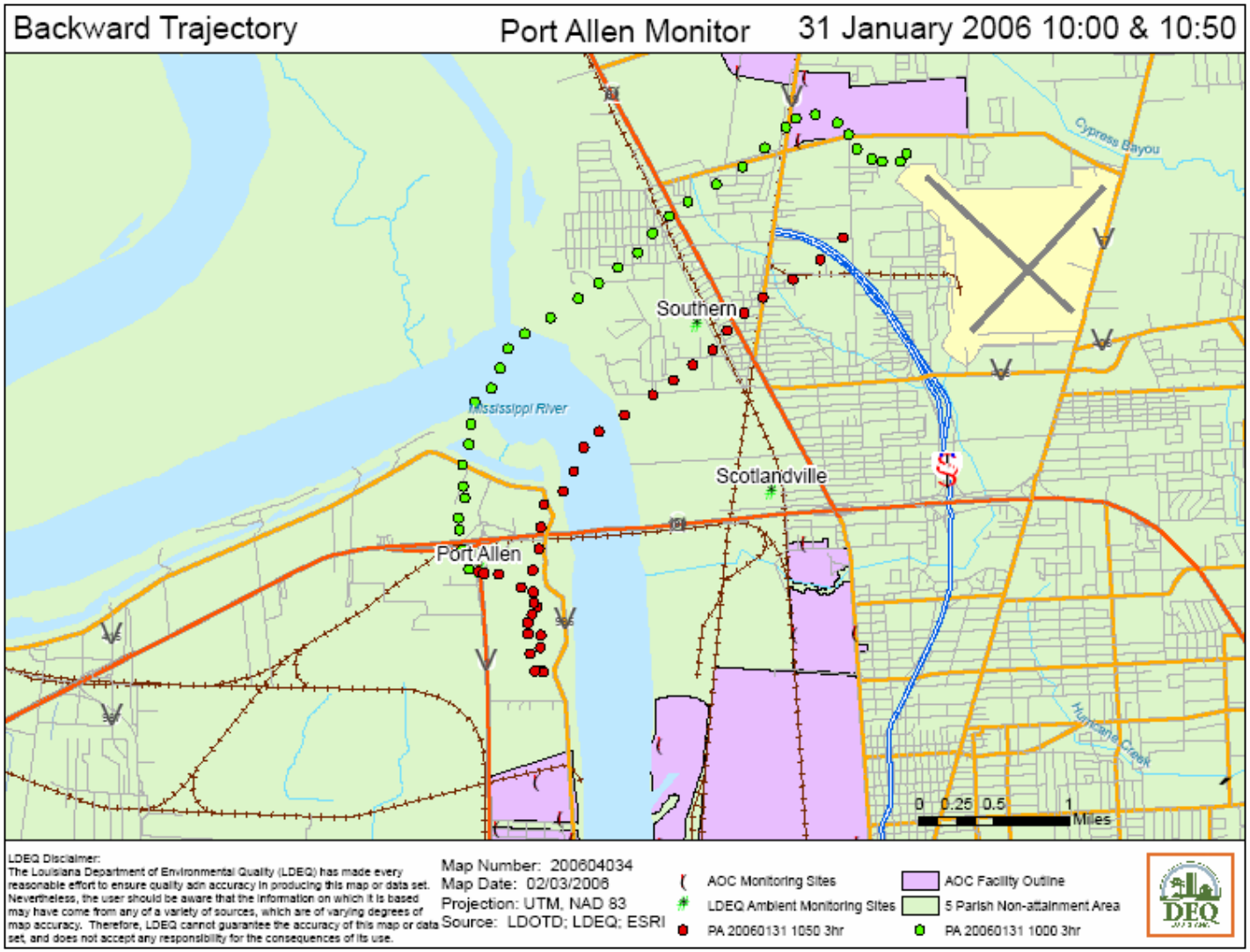
Sample Analysis Report - EPA Method For the Determination of Ozone Precursors in Ambient Air

Sample ID #:	AJ03925	**Analyst:**	HFL	**Canister ID:**	S1446
Date Collected:	1/31/2006	**Sample Collector:**		G JENKINS	**Analysis Date:** 2/1/2006
Initial Pressure:	20.5	**Dilution Factor:**	1		
Sampling Point:	CAN_PAL	**Date in Lab:**	2/1/2006		
Sample Comments:					
Sample Duration:	0.42	**Sample Start Hour:**	10:40		

Analysis Method: **Gas Chromatograph separation with Flame Ionization Detector.**

Concentrations in parts per billion carbon (ppbc) or methane equivalence

Acetylene	5.84	**3-methylhexane**	1.81
Ethylene	39.74	**2,2,4-trimethylpentane**	5.09
Ethane	41.07	**n-Heptane**	1.92
Propylene	**733.93**	**Methylcyclohexane**	1.72
Propane	**98.26**	**2,3,4-trimethylpentane**	1.31
Isobutane	25.39	**Toluene**	10.99
1-butene	5.08	**2-methylheptane**	0.92
n-Butane	71.03	**3-methylheptane**	0.68
trans-2-Butene	not detected	**n-Octane**	1.34
cis-2-Butene	2.84	**Ethylbenzene**	1.36
2-methylbutane	38.21	**m/p Xylene**	5.14
1-Pentene	1.87	**Styrene**	1.29
n-Pentane	20.17	**o Xylene**	2.90
Isoprene	0.33	n-**Nonane**	1.10
trans-2-Pentene	0.78	**Cumene**	0.40
cis-2-Pentene	0.73	**n-propylbenzene**	0.43
2,2-dimethylbutane	1.86	**m-ethyltoluene**	1.34
Cyclopentane	3.35	**p-ethyltoluene**	0.92
2,3-dimethylbutane	3.34	**1,3,5-trimethylbenzene**	0.62
2-methylpentane	13.34	**o-ethyltoluene**	0.64
3-methylpentane	10.80	**1,2,4-trimethylbenzene**	4.90
1-Hexene	0.62	**n-Decane**	0.72
n-Hexane	16.62	**1,2,3-trimethylbenzene**	1.13
Methylcyclopentane	6.53	**m-diethylbenzene**	0.34
2,4-dimethylpentane	1.07	**p-diethylbenzene**	1.91
Benzene	12.65	**n-Undecane**	0.55
Cyclohexane	2.70	**1,3-butadiene**	2.71
2-methylhexane	1.78	**Total NMOC (ppbc)**	**1396.00**
2,3-dimethylpentane	0.96		


Backward Trajectory
Port Allen Monitor
31 January 2006 10:00 & 10:50
Southern
Scotlandville
Port Allen
Mississippi River
Cypress Bayou
Hurricane Creek
0 0.25 0.5 1
Miles
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Map Number: 200604034
Map Date: 02/03/2006
Projection: UTM, NAD 83
Source: LDOTD; LDEQ; ESRI
AOC Monitoring Sites
LDEQ Ambient Monitoring Sites
PA 20060131 1050 3hr
AOC Facility Outline
5 Parish Non-attainment Area
PA 20060131 1000 3hr
DEQ

Conclusions

- Very high am NO levels across the area
- Low temperature (60), Low wind speeds & low cloud cover
- Wind reversal prevented dispersion & kept pollutants in the area
- Presence of HRVOC (propylene) generated a rapid increase of ozone in spite of low temperatures.