REVISIONS TO THE STATE IMPLEMENTATION PLAN
FOR THE CONTROL OF OZONE AIR POLLUTION

ATTAINMENT DEMONSTRATION FOR THE
HOUSTON/GALVESTON
OZONE NONATTAINMENT AREA

Appendix E

Future Case Modeling Results

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
PO BOX 13087
AUSTIN, TEXAS 78711-3087

FEBRUARY 20, 1998

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
1	07/12/97	07.base.regular	Same meteorological input data as the UAM-V v1.24 year 1993 base case modeling run (93.base.regular) and projected year 2007 EI data with the lateral boundary conditions and initial conditions extracted from the Texas regional UAM-V v1.24 year 2007 modeling results (COAST coarse 16x6km domain and HGBPA fine grid 4x4km sub-domain)	UAM-V v1.24
2	07/12/97	07.base.regular.000N000V	Case #1 with 0% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
3	07/14/97	07.base.regular.090pN100V	Case #1 with 90% point NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
4	07/14/97	07.base.regular.075pN100V	Case #1 with 75% point NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
5	07/14/97	07.base.regular.050pN100V	Case #1 with 50% point NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
6	07/15/97	07.base.regular.025pN100V	Case #1 with 25% point NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
7	07/15/97	07.base.regular.000pN100V	Case #1 with 0% point NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
8	07/16/97	07.base.regular.100N090V	Case #1 with 100% NOx and 90% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
9	07/16/97	07.base.regular.100N075V	Case #1 with 100% NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
10	07/16/97	07.base.regular.100N050V	Case #1 with 100% NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
11	07/17/97	07.base.regular.100N025V	Case #1 with 100% NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
12	07/17/97	07.base.regular.100N000V	Case #1 with 100% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
13	07/18/97	07.base.regular.095pN095V	Case #1 with 95% point NOx and 95% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
14	07/18/97	07.base.regular.090pN090V	Case #1 with 90% point NOx and 90% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
15	07/20/97	07.base.regular.075pN075V	Case #1 with 75% point NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
16	07/20/97	07.base.regular.050pN050V	Case #1 with 50% point NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
17	07/21/97	07.base.regular.025pN025V	Case #1 with 25% point NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
18	07/21/97	07.base.regular.000pN000V	Case #1 with 0% point NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
19	07/21/97	07.base.regular.095N095V	Case #1 with 95% NOx and 95% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
20	07/22/97	07.base.regular.090N090V	Case #1 with 90% NOx and 90% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
21	07/22/97	07.base.regular.075N075V	Case #1 with 75% NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
22	07/22/97	07.base.regular.050N050V	Case #1 with 50% NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
23	07/23/97	07.base.regular.025N025V	Case #1 with 25% NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
24	07/23/97	07.base.regular.090N100V	Case #1 with 90% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
25	07/23/97	07.base.regular.075N100V	Case #1 with 75% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
26	07/24/97	07.base.regular.050N100V	Case #1 with 50% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
27	07/24/97	07.base.regular.025N100V	Case #1 with 25% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
28	07/24/97	07.base.regular.000N100V	Case #1 with 0% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
29	07/25/97	07.base.regular.075pN050V	Case #1 with 75% point NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
30	07/25/97	07.base.regular.075N050V	Case #1 with 75% NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
31	07/25/97	07.base.regular.075pN025V	Case #1 with 75% point NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
32	07/27/97	07.base.regular.075N025V	Case #1 with 75% NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
33	07/27/97	07.base.regular.075pN000V	Case #1 with 75% point NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
34	07/27/97	07.base.regular.075N000V	Case #1 with 75% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
35	07/28/97	07.base.regular.050pN075V	Case #1 with 50% point NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
36	07/28/97	07.base.regular.050N075V	Case #1 with 50% NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
37	07/28/97	07.base.regular.050pN025V	Case #1 with 50% point NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
38	07/29/97	07.base.regular.050N025V	Case #1 with 50% NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
39	07/30/97	07.base.regular.050pN000V	Case #1 with 50% point NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
40	07/30/97	07.base.regular.050N000V	Case #1 with 50% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
41	07/30/97	07.base.regular.025pN075V	Case #1 with 25% point NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
42	07/30/97	07.base.regular.025N075V	Case #1 with 25% NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
43	07/31/97	07.base.regular.025pN050V	Case #1 with 25% point NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
44	07/31/97	07.base.regular.025N050V	Case #1 with 25% NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
45	07/31/97	07.base.regular.025pN000V	Case #1 with 25% point NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
46	07/31/97	07.base.regular.025N000V	Case #1 with 25% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
47	08/01/97	07.base.regular.000pN075V	Case #1 with 0% point NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
48	08/01/97	07.base.regular.000N075V	Case #1 with 0% NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
49	08/01/97	07.base.regular.000pN050V	Case #1 with 0% point NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
50	08/01/97	07.base.regular.000N050V	Case #1 with 0% NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
51	08/03/97	07.base.regular.000pN025V	Case #1 with 0% point NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
52	08/03/97	07.base.regular.000N025V	Case #1 with 0% NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
53	08/07/97	07.base.coast_cut_bc.000N000V	Case #1 with 0% NOx and 0% VOC anthropogenic emissions in COAST domain and the BCs and IC extracted from the Texas regional UAM-V v1.24 modeling with 0% NOx and 0% VOC anthropogenic emissions inside COAST sub-domain	UAM-V v1.24
54	08/15/97	07.base.nonatt_rural.025pN100V	Case #1 with 25% point NOx and 100% VOC anthropogenic emissions in HGBPA nonattainment rural areas	UAM-V v1.24
55	08/15/97	07.base.nonatt_rural.050pN100V	Case #1 with 50% point NOx and 100% VOC anthropogenic emissions in HGBPA nonattainment rural areas	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
56	08/15/97	07.base.nonatt_rural.075pN100V	Case #1 with 75% point NOx and 100% VOC anthropogenic emissions in HGBPA nonattainment rural areas	UAM-V v1.24
57	08/18/97	07.base.nonatt_rural.025pN025V	Case #1 with 25% point NOx and 25% VOC anthropogenic emissions in HGBPA nonattainment rural areas	UAM-V v1.24
58	08/18/97	07.base.nonatt_rural.050pN025V	Case #1 with 50% point NOx and 25% VOC anthropogenic emissions in HGBPA nonattainment rural areas	UAM-V v1.24
59	08/18/97	07.base.nonatt_rural.075pN025V	Case #1 with 75% point NOx and 25% VOC anthropogenic emissions in HGBPA nonattainment rural areas	UAM-V v1.24
60	08/18/97	07.base.nonatt_rural.100N025V	Case #1 with 100% NOx and 25% VOC anthropogenic emissions in HGBPA nonattainment rural area	UAM-V v1.24
61	08/21/97	07.base.regular.075maN100V	Case #1 with 75% mobile and area NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
62	08/22/97	07.base.regular.050maN100V	Case #1 with 50% mobile and area NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
63	08/22/97	07.base.regular.025maN100V	Case #1 with 25% mobile and area NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
64	08/22/97	07.base.regular.000maN100V	Case #1 with 0% mobile and area NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
65	08/26/97	07.base.regular.075mN100V	Case #1 with 75% mobile NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
66	08/26/97	07.base.regular.050mN100V	Case #1 with 50% mobile NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
67	08/26/97	07.base.regular.025mN100V	Case #1 with 25% mobile NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
68	08/26/97	07.base.regular.000mN100V	Case #1 with 0% mobile NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
69	08/27/97	07.base.regular.075aN100V	Case #1 with 75% area NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
70	08/27/97	07.base.regular.050aN100V	Case #1 with 50% area NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
71	08/27/97	07.base.regular.025aN100V	Case #1 with 25% area NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
72	08/28/97	07.base.regular.000aN100V	Case #1 with 0% area NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
73	09/05/97	07.base.ship_indus.075pN100V	Case #1 with 75% point NOx and 100% VOC anthropogenic emissions in Houston ship channel and industrial area	UAM-V v1.24
74	09/05/97	07.base.ship_indus.050pN100V	Case #1 with 50% point NOx and 100% VOC anthropogenic emissions in Houston ship channel and industrial area	UAM-V v1.24
75	09/05/97	07.base.ship_indus.025pN100V	Case #1 with 25% point NOx and 100% VOC anthropogenic emissions in Houston ship channel and industrial area	UAM-V v1.24
76	09/05/97	07.base.ship_indus.000pN100V	Case #1 with 0% point NOx and 100% VOC anthropogenic emissions in Houston ship channel and industrial area	UAM-V v1.24
77	08/15/97	07.base.nonatt_rural.000pN100V	Case #1 with 0% point NOx and 100% VOC anthropogenic emissions in HGBPA nonattainment rural areas	UAM-V v1.24
78	09/15/97	07.base.bpa_indus.075pN100V	Case #1 with 75% point NOx and 100% VOC anthropogenic emissions in BPA urban and industrial area	UAM-V v1.24
79	09/15/97	07.base.bpa_indus.050pN100V	Case #1 with 50% point NOx and 100% VOC anthropogenic emissions in BPA urban and industrial area	UAM-V v1.24
80	09/15/97	07.base.bpa_indus.025pN100V	Case #1 with 25% point NOx and 100% VOC anthropogenic emissions in BPA urban and industrial area	UAM-V v1.24
81	09/15/97	07.base.bpa_indus.000pN100V	Case #1 with 0% point NOx and 100% VOC anthropogenic emissions in BPA urban and industrial area	UAM-V v1.24
82	09/16/97	07.base.ship_indus.100N075pV	Case #1 with 100% NOx and 75% point VOC anthropogenic emissions in Houston ship channel and industrial area	UAM-V v1.24
83	09/16/97	07.base.ship_indus.100N050pV	Case #1 with 100% NOx and 50% point VOC anthropogenic emissions in Houston ship channel and industrial area	UAM-V v1.24
84	09/16/97	07.base.ship_indus.100N025pV	Case #1 with 100% NOx and 25% point VOC anthropogenic emissions in Houston ship channel and industrial area	UAM-V v1.24
85	09/16/97	07.base.ship_indus.100N000pV	Case #1 with 100% NOx and 0% point VOC anthropogenic emissions in Houston ship channel and industrial area	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
86	09/16/97	07.base.bpa_indus.100N075pV	Case #1 with 100% NOx and 75% point VOC anthropogenic emissions in BPA industrial area	UAM-V v1.24
87	09/16/97	07.base.bpa_indus.100N050pV	Case #1 with 100% NOx and 50% point VOC anthropogenic emissions in BPA industrial area	UAM-V v1.24
88	09/17/97	07.base.bpa_indus.100N025pV	Case #1 with 100% NOx and 25% point VOC anthropogenic emissions in BPA industrial area	UAM-V v1.24
89	09/17/97	07.base.bpa_indus.100N000pV	Case #1 with 100% NOx and 0% point VOC anthropogenic emissions in BPA industrial area	UAM-V v1.24
90	09/19/97	07.base.texas_city.100N075pV	Case #1 with 100% NOx and 75% point VOC anthropogenic emissions in Texas City industrial area	UAM-V v1.24
91	09/19/97	07.base.texas_city.100N050pV	Case #1 with 100% NOx and 50% point VOC anthropogenic emissions in Texas City industrial area	UAM-V v1.24
92	09/19/97	07.base.texas_city.100N000pV	Case #1 with 100% NOx and 0% point VOC anthropogenic emissions in Texas City industrial area	UAM-V v1.24
93	09/20/97	07.base.texas_city.100N025pV	Case #1 with 100% NOx and 25% point VOC anthropogenic emissions in Texas City industrial area	UAM-V v1.24
94	09/22/97	07.base.regular.015uN100V	Case #1 with 15% utility NOx and 100% VOC anthropogenic emissions in entire COAST domain	UAM-V v1.24
95	09/23/97	07.base.houston.100N075mV	Case #1 with 100% NOx and 75% mobile VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
96	09/23/97	07.base.houston.100N050mV	Case #1 with 100% NOx and 50% mobile VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
97	09/23/97	07.base.houston.100N025mV	Case #1 with 100% NOx and 25% mobile VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
98	09/23/97	07.base.houston.100N000mV	Case #1 with 100% NOx and 0% mobile VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
99	09/24/97	07.base.houston.075mN100V	Case #1 with 75% mobile NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
100	09/24/97	07.base.houston.050mN100V	Case #1 with 50% mobile NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
101	09/24/97	07.base.houston.025mN100V	Case #1 with 25% mobile NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
102	09/24/97	07.base.houston.000mN100V	Case #1 with 0% mobile NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
103	09/25/97	07.base.houston.100N075aV	Case #1 with 100% NOx and 75% area VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
104	09/25/97	07.base.houston.100N050aV	Case #1 with 100% NOx and 50% area VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
105	09/25/97	07.base.houston.100N025aV	Case #1 with 100% NOx and 25% area VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
106	09/25/97	07.base.houston.100N000aV	Case #1 with 100% NOx and 0% area VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
107	09/25/97	07.base.houston.075aN100V	Case #1 with 75% area NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
108	09/25/97	07.base.houston.050aN100V	Case #1 with 50% area NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
109	09/26/97	07.base.houston.025aN100V	Case #1 with 25% area NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
110	09/26/97	07.base.houston.000aN100V	Case #1 with 0% area NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
111	09/26/97	07.base.houston.075maN100V	Case #1 with 75% mobile NOx, 75% area NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
112	09/26/97	07.base.houston.050maN100V	Case #1 with 50% mobile NOx, 75% area NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
113	09/26/97	07.base.houston.025maN100V	Case #1 with 25% mobile NOx, 75% area NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
114	09/26/97	07.base.houston.000maN100V	Case #1 with 0% mobile NOx, 75% area NOx and 100% VOC anthropogenic emissions in Houston urban core area	UAM-V v1.24
115	09/29/97	07.base.hg_nonatt.075N100V	Case #1 with 75% NOx and 100% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
116	09/29/97	07.base.hg_nonatt.050N100V	Case #1 with 50% NOx and 100% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
117	09/29/97	07.base.hg_nonatt.025N100V	Case #1 with 25% NOx and 100% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
118	09/30/97	07.base.hg_nonatt.000N100V	Case #1 with 0% NOx and 100% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
119	09/30/97	07.base.hg_nonatt.100N075V	Case #1 with 100% NOx and 75% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
120	09/30/97	07.base.hg_nonatt.100N050V	Case #1 with 100% NOx and 50% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
121	09/30/97	07.base.hg_nonatt.100N025V	Case #1 with 100% NOx and 25% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
122	10/01/97	07.base.hg_nonatt.100N000V	Case #1 with 100% NOx and 0% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
123	10/01/97	07.base.bpa_nonatt.075N100V	Case #1 with 75% NOx and 100% VOC anthropogenic emissions in BPA nonattainment area	UAM-V v1.24
124	10/01/97	07.base.bpa_nonatt.050N100V	Case #1 with 50% NOx and 100% VOC anthropogenic emissions in BPA nonattainment area	UAM-V v1.24
125	10/01/97	07.base.bpa_nonatt.025N100V	Case #1 with 25% NOx and 100% VOC anthropogenic emissions in BPA nonattainment area	UAM-V v1.24
126	10/02/97	07.base.bpa_nonatt.000N100V	Case #1 with 0% NOx and 100% VOC anthropogenic emissions in BPA nonattainment area	UAM-V v1.24
127	10/02/97	07.base.hg_nonatt.075N075V	Case #1 with 75% NOx and 75% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
128	10/02/97	07.base.hg_nonatt.050N050V	Case #1 with 50% NOx and 50% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
129	10/03/97	07.base.hg_nonatt.025N025V	Case #1 with 25% NOx and 25% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
130	10/03/97	07.base.hg_nonatt.000N000V	Case #1 with 0% NOx and 0% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
131	10/03/97	07.base.bpa_nonatt.075N075V	Case #1 with 75% NOx and 75% VOC anthropogenic emissions in BPA nonattainment area	UAM-V v1.24
132	10/03/97	07.base.bpa_nonatt.050N050V	Case #1 with 50% NOx and 50% VOC anthropogenic emissions in BPA nonattainment area	UAM-V v1.24
133	10/03/97	07.base.bpa_nonatt.025N025V	Case #1 with 25% NOx and 25% VOC anthropogenic emissions in BPA nonattainment area	UAM-V v1.24
134	10/03/97	07.base.bpa_nonatt.000N000V	Case #1 with 0% NOx and 0% VOC anthropogenic emissions in BPA nonattainment area	UAM-V v1.24
135	10/06/97	07.base.coast-j-g-h.015uN100V	Case #1 with 15% utility NOx and 100% VOC anthropogenic emissions anthropogenic emissions in COAST domain except Jefferson, Galveston, and Harris Counties	UAM-V v1.24
136	10/07/97	07.alt_i.regular.100N100V	Case #1 with alternative I EI. Alternative I EI Adjustment Factors: SOURCE: Point Mobile Area Biogenic VOC: 1.25 2.00 1.30 0.30 NOX: 0.75 0.80 0.25 1.00	UAM-V v1.24
137	10/07/97	07.alt_i.regular.075N100V	Case #136 (alternative I EI) with 75% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
138	10/07/97	07.alt_i.regular.050N100V	Case #1 (alternative I EI) with 50% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
139	10/07/97	07.alt_i.regular.025N13600V	Case #136 (alternative I EI) with 25% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
140	10/08/97	07.alt_i.regular.000N13600V	Case #136 (alternative I EI) with 0% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
141	10/08/97	07.alt_i.regular.13600N075V	Case #136 (alternative I EI) with 13600% NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
142	10/08/97	07.alt_i.regular.13600N050V	Case #136 (alternative I EI) with 13600% NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
143	10/09/97	07.alt_i.regular.13600N025V	Case #136 (alternative I EI) with 13600% NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
144	10/09/97	07.alt_i.regular.13600N000V	Case #136 (alternative I EI) with 13600% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
145	10/09/97	07.alt_i.regular.075N075V	Case #136 (alternative I EI) with 75% NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
146	10/09/97	07.alt_i.regular.050N050V	Case #136 (alternative I EI) with 50% NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
147	10/10/97	07.alt_i.regular.025N025V	Case #136 (alternative I EI) with 25% NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
148	10/10/97	07.alt_i.regular.000N000V	Case #136 (alternative I EI) with 0% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
149	10/10/97	07.alt_ii.regular.100N100V	Case #1 with alternative II EI. Alternative II EI Adjustment Factors: SOURCE: Point Mobile Area Rural Biogenic Rural Biogenic VOC: 1.25 2.00 1.30 0.60 1.00 NOX: 0.75 0.80 0.25 1.00 1.00	UAM-V v1.24
150	10/10/97	07.alt_ii.regular.075N100V	Case #149 (alternative II EI) with 75% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
151	10/11/97	07.alt_ii.regular.050N100V	Case #149 (alternative II EI) with 50% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
152	10/12/97	07.alt_ii.regular.025N100V	Case #149 (alternative II EI) with 25% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
153	10/10/97	07.alt_ii.regular.000N100V	Case #149 (alternative II EI) with 0% NOx and 100% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
154	10/10/97	07.alt_ii.regular.100N075V	Case #149 (alternative II EI) with 100% NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
155	10/11/97	07.alt_ii.regular.100N050V	Case #149 (alternative II EI) with 100% NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
156	10/10/97	07.alt_ii.regular.100N025V	Case #149 (alternative I EI) with 100% NOx and 25% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
157	10/11/97	07.alt_ii.regular.100N000V	Case #149 (alternative I EI) with 100% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
158	10/10/97	07.alt_ii.regular.000N000V	Case #149 (alternative I EI) with 0% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
159	10/13/97	07.alt_ii.regular.075N075V	Case #149 (alternative I EI) with 75% NOx and 75% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
160	10/13/97	07.alt_ii.regular.050N050V	Case #149 (alternative I EI) with 50% NOx and 50% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
161	10/13/97	07.alt_ii.regular.000N000V	Case #149 (alternative I EI) with 0% NOx and 0% VOC anthropogenic emissions in COAST domain	UAM-V v1.24
162	10/21/97	07.base.hg_nonatt.035N100V	Case #1 with 35% NOx and 100% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
163	10/21/97	07.base.hg_nonatt.030N100V	Case #1 with 30% NOx and 100% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
164	10/21/97	07.base.hg_nonatt.020N100V	Case #1 with 20% NOx and 100% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
165	10/21/97	07.base.hg_nonatt.015N100V	Case #1 with 15% NOx and 100% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
166	10/27/97	07.base.hg_nonatt.090N090V	Case #1 with 90% NOx and 90% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
167	10/28/97	07.base.hg_nonatt.075N090V	Case #1 with 75% NOx and 90% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
168	10/29/97	07.base.hg_nonatt.085N085V	Case #1 with 85% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
169	10/29/97	07.base.hg_nonatt.075N085V	Case #1 with 75% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
170	10/30/97	07.base.hg_nonatt.080N085V	Case #1 with 80% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
171	10/30/97	07.base.hg_nonatt.070N085V	Case #1 with 70% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
172	11/03/97	07.base.hg_nonatt.065N085V	Case #1 with 65% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
173	11/03/97	07.base.hg_nonatt.060N085V	Case #1 with 60% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
174	11/04/97	07.base.hg_nonatt.080N080V	Case #1 with 80% NOx and 80% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
175	11/04/97	07.base.hg_nonatt.075N080V	Case #1 with 75% NOx and 80% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
176	11/04/97	07.base.hg_nonatt.070N080V	Case #1 with 70% NOx and 80% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
177	11/05/97	07.base.hg_nonatt.050N085V	Case #1 with 50% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
178	11/07/97	07.base.hg_nonatt.045N085V	Case #1 with 45% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
179	11/07/97	07.base.hg_nonatt.040N085V	Case #1 with 40% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
180	11/08/97	07.base.hg_nonatt.030N085V	Case #1 with 30% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
181	11/08/97	07.base.hg_nonatt.025N085V	Case #1 with 25% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
182	11/10/97	07.base.hg_nonatt.035N085V	Case #1 with 35% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
183	11/10/97	07.base.hg_nonatt.020N085V	Case #1 with 20% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
184	11/12/97	07.base.hg_nonatt.055N085V	Case #1 with 55% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
185	11/13/97	07.base.out_bpa_nonatt.000N000V	Case #1 with 0% NOx and 0% VOC anthropogenic emissions outside BPA nonattainment area and EPA standard background values for BCs and IC.	UAM-V v1.24
186	11/17/97	07.base.hg_nonatt.015N085V	Case #1 with 15% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
187	11/17/97	07.base.hg_nonatt.010N085V	Case #1 with 10% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
188	11/17/97	07.base.hg_nonatt.005N085V	Case #1 with 5% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24

List of COAST UAM Year 2007 Modeling Runs for September 6-11, 1993 Episode				
#	Date	Run Name	Description	UAM
189	11/17/97	07.base.hg_nonatt.000N085V	Case #1 with 0% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
190	11/18/97	07.alt_i.hg_nonatt.050N085V	Case #136 with 50% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
200	11/18/97	07.alt_i.hg_nonatt.040N085V	Case #136 with 40% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
201	11/18/97	07.alt_i.hg_nonatt.020N085V	Case #136 with 20% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
202	11/19/97	07.alt_i.hg_nonatt.030N085V	Case #136 with 30% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
203	11/19/97	07.alt_ii.hg_nonatt.050N085V	Case #149 with 50% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
204	11/19/97	07.alt_ii.hg_nonatt.040N085V	Case #149 with 40% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
205	11/19/97	07.alt_ii.hg_nonatt.030N085V	Case #149 with 30% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
206	11/19/97	07.alt_ii.hg_nonatt.020N085V	Case #149 with 20% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
207	12/26/97	07.otag_5c.hg_nonatt.050N085V	Case #149 with BCs and IC extracted from the Texas regional UAM-V year 2007 modeling with OTAG 5c emissions controls, OTAG 5c emissions controls outside HG nonattainment area, and 50% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
208	12/26/97	07.otag_5c.hg_nonatt.040N085V	Case #207 with 40% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
209	12/26/97	07.otag_5c.hg_nonatt.030N085V	Case #207 with 30% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24
208	12/26/97	07.otag_5c.hg_nonatt.020N085V	Case #207 with 20% NOx and 85% VOC anthropogenic emissions in HG nonattainment area	UAM-V v1.24

Summary of Urban Airshed Modeling Results for Houston-Galveston April, 1998 Attainment Demonstration

October 20, 1997

J. H. Smith, Ph.D.

T.N.R.C.C.
Air Quality Planning
and Assessment

Background on the Coastal Oxidant Assessment for Southeast Texas (COAST) Modeling

- The upper Texas coast is characterized by a complex mixture of emissions and highly complex coastal meteorological patterns.
- The 1993 COAST intensive field study included enhanced meteorological and air quality monitoring, advanced emissions inventory methodologies.
- Modeling for COAST was conducted using an advanced prognostic meteorological model (SAIMM) and the variable-grid version of Urban Airshed Model (UAM-V).
- Of four COAST episodes initially modeled, best performance achieved with September 8-11, 1993 episode. All exceedance days meet EPA performance criteria.
- September 8-11 episode will be used for April, 1998 attainment demonstration.
- Emissions inventory projected to 2007 using econometric forecasts; adopted controls on VOC sources are applied to projections.
- Future-year boundary conditions established through multi-state regional modeling.
- SIP modeling staff have conducted over 150 six-day simulations to test various NO_X, VOC, and combined NO_X & VOC reductions, applied domain-wide and in specific geographic areas.

Episode Selection and Model Performance

- Originally modeled four episodes incorporating results of the COAST field study:

  - October 23-25, 1992
  - August 16-20, 1993
  - August 31-September 2, 1993
  - September 6-11, 1993

- Model could not successfully replicate observed data for either October 23-25, 1992, or August 16-20, 1993 episode.

- August 31-September 2, 1993 episode was selected primarily for Beaumont. (Houston-Galveston area peak ozone was 164 ppb on Sept. 1, well below design value of 210 ppb).

- September 6-11, 1993 episode had four consecutive exceedance days in Houston-Galveston, with high ozone in Beaumont-Port Arthur (one exceedance day).

- Model performance meets EPA criteria for both areas for four days of interest:

Houston-Galveston Model Performance Summary

Episode Day	Measured Peak O_3	Modeled Peak O_3	Δ Peak (15-20%)	Relative Bias (5-15%)	Gross Error (30-35%)
September 8, 1993	214	176	-18%	2%	24%
September 9, 1993	195	177	-9%	4%	26%
September 10, 1993	162	179	10%	-10%	23%
September 11, 1993	189	187	-1%	-2%	21%

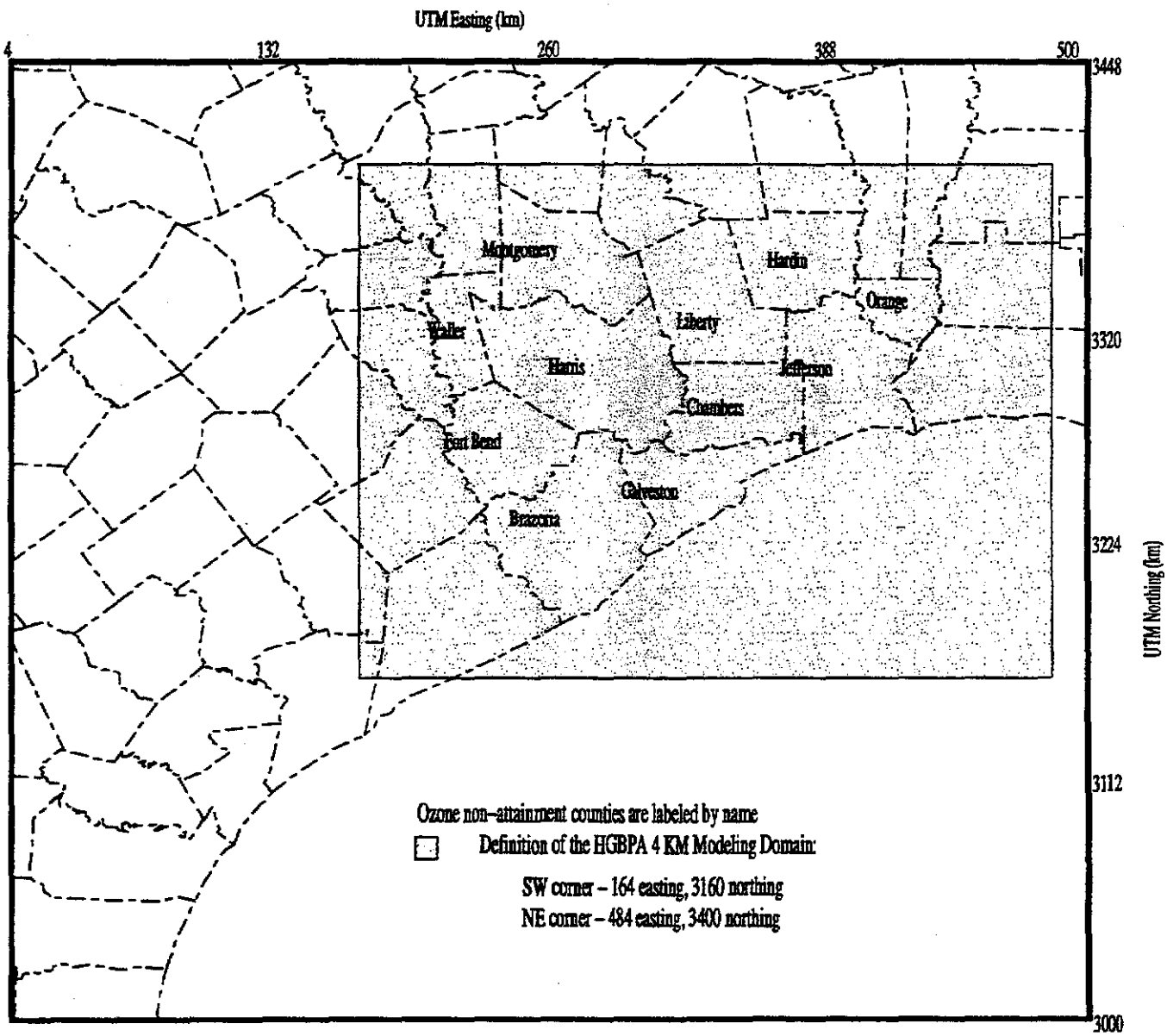
Beaumont-Port Arthur Model Performance Summary

Episode Day	Measured Peak O_3	Modeled Peak O_3	Δ Peak (15-20%)	Relative Bias (5-15%)	Gross Error (30-35%)
September 8, 1993	113	165	47%	12%	20%
September 9, 1993	110	140	28%	2%	14%
September 10, 1993	141	162	15%	-2%	14%
September 11, 1993	116	158	36%	>1%	18%

Characteristics of September 6-11, 1993 Modeling Episode

- Fairly typical summer episode for Houston, Beaumont. Does not represent flow reversal events like August 17-20 episode.

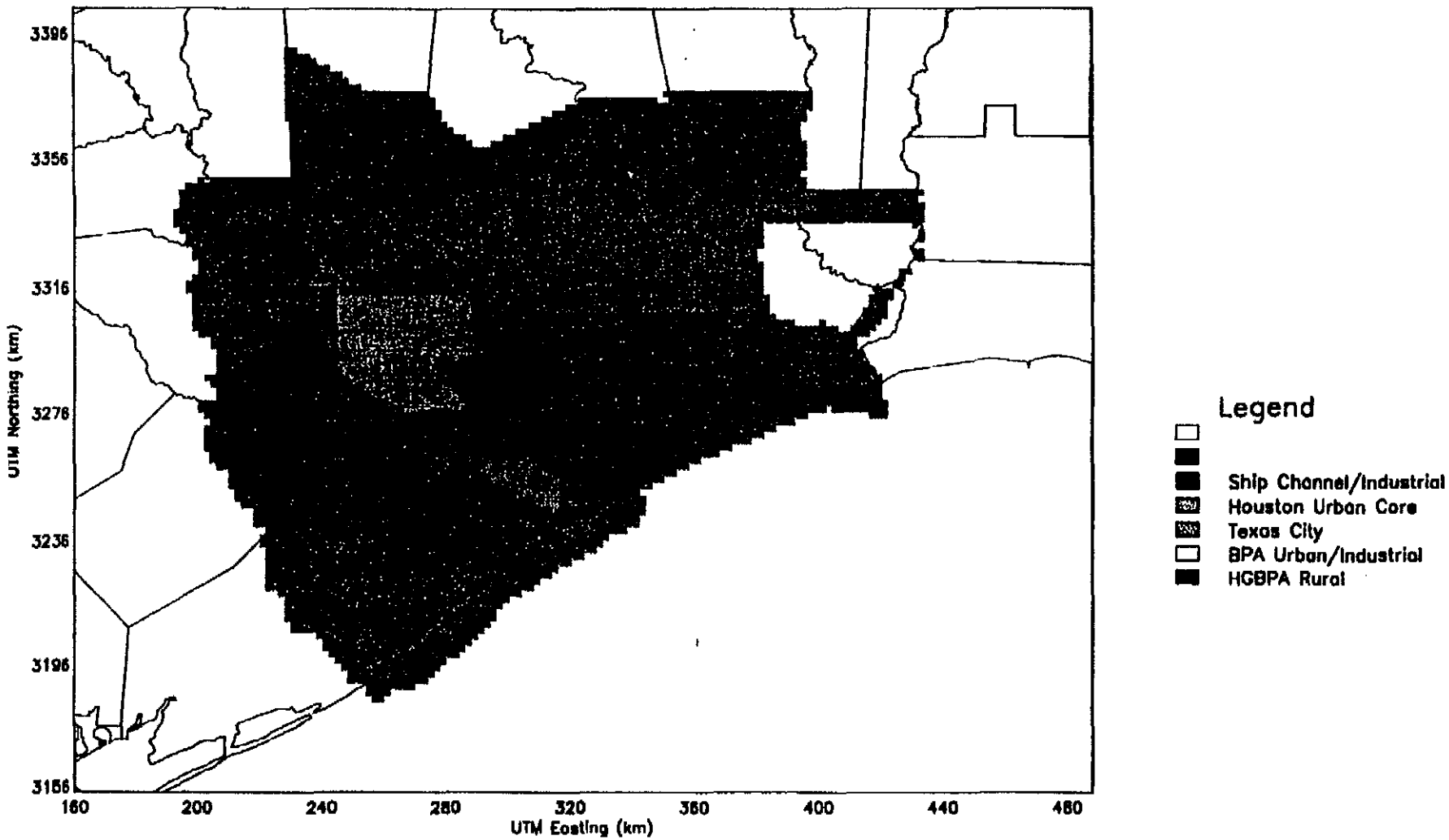
COAST Modeling Domain



These coordinates are projected in UTM zone 15;

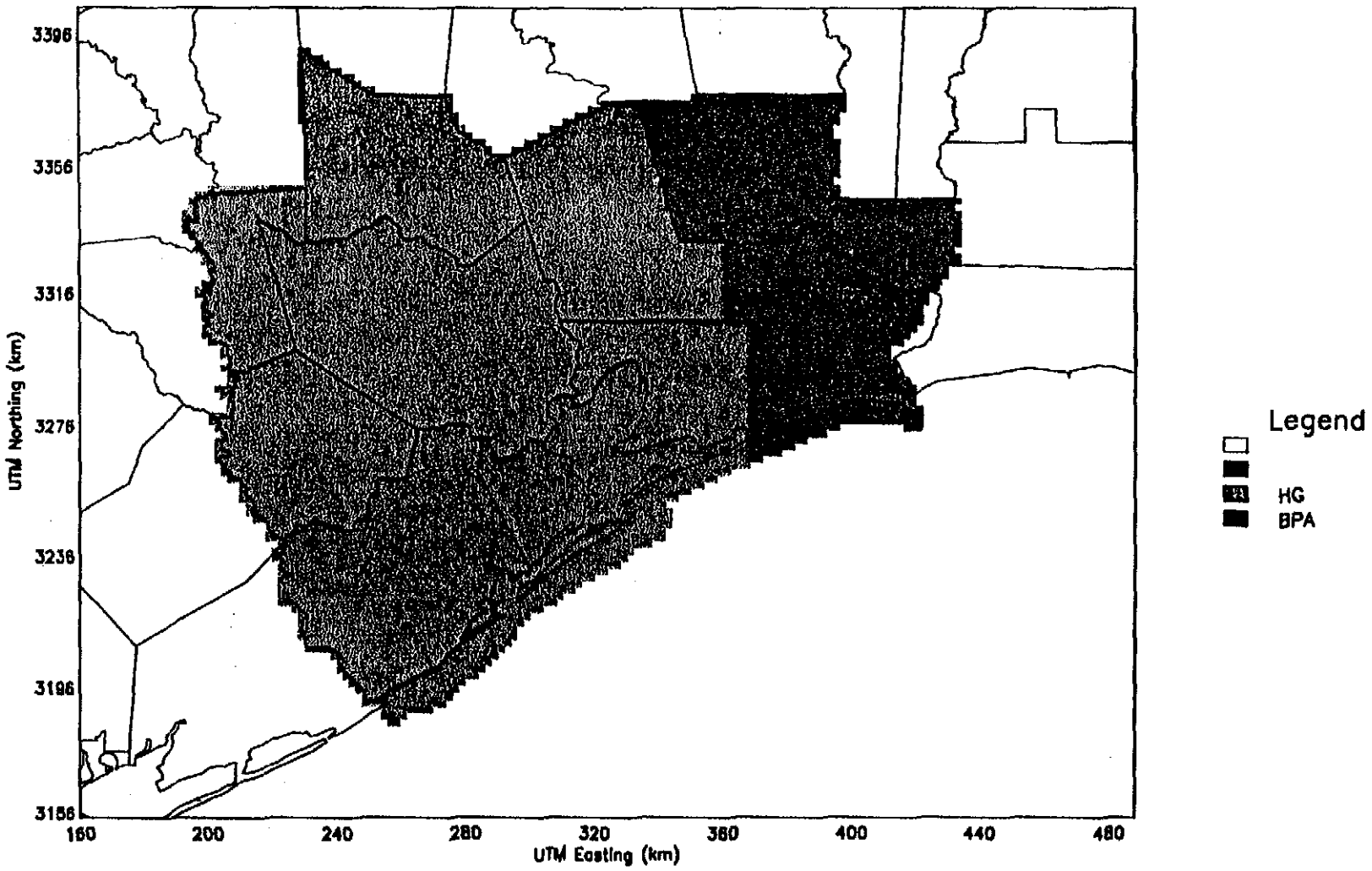
The unit of measurement is kilometer

Emission Control Zones



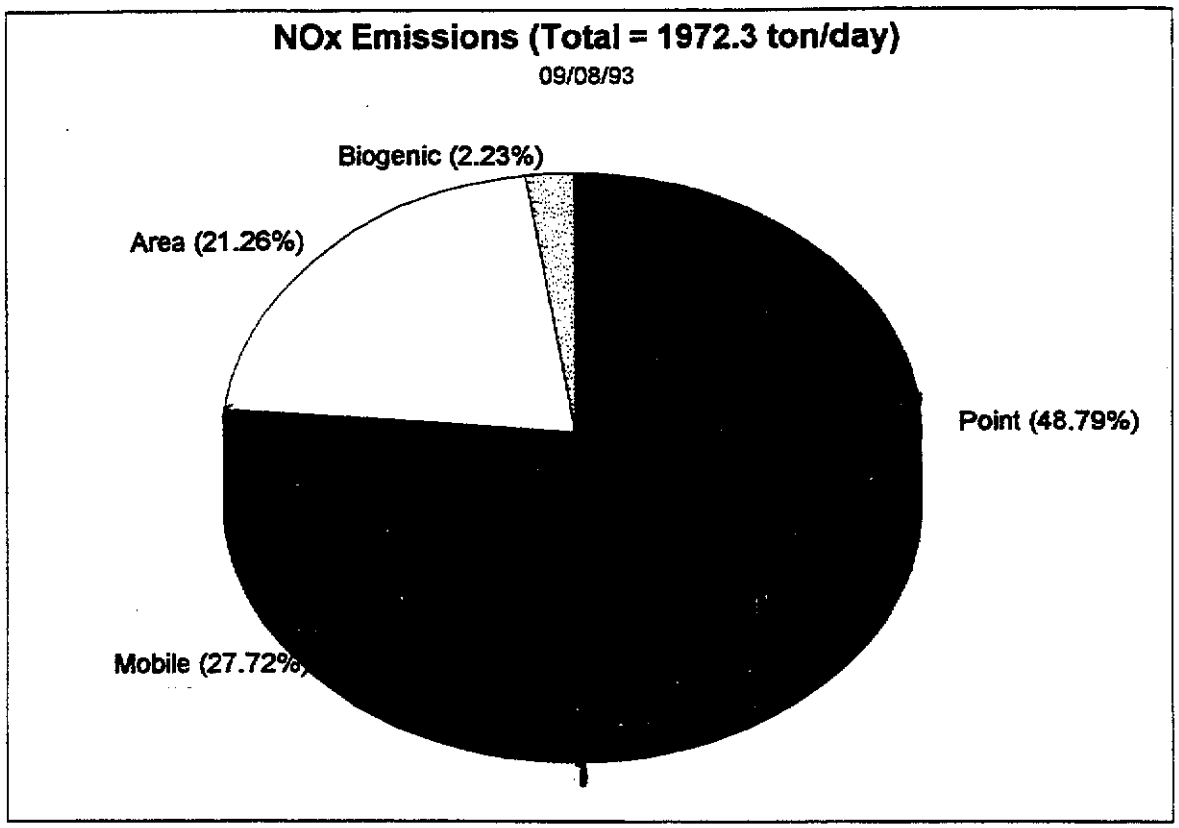
THRCC WZHAO: 10/08/1997 17:02:44; /el_files/coast/el_mask/el_cell_mask.coast.Sarcos

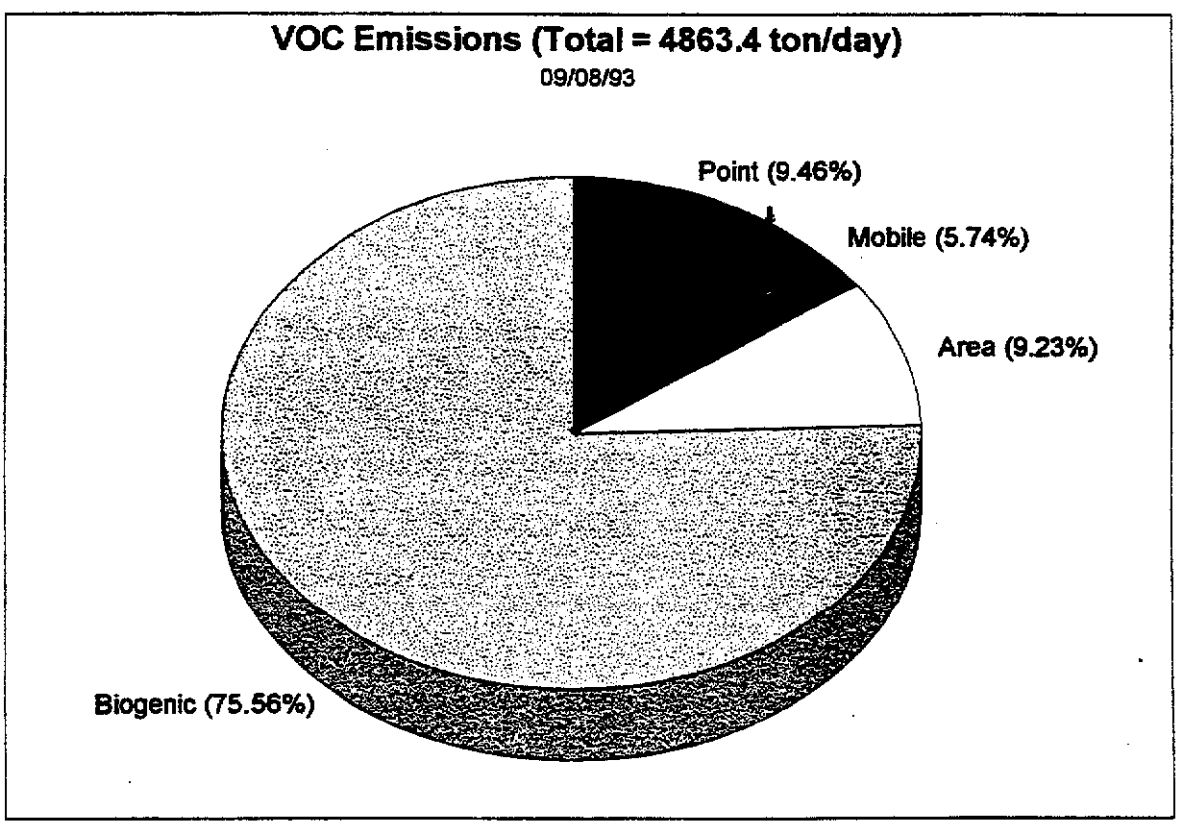
Emission Control Zone: HGBPA Nonattainment Areas



TNRCC WZHAO: 10/08/1997 17:04:18: /el_files/coast/el_mask/el_coll_mask.coast.hgbpa.nonatt

Projected Year 2007 COAST Emissions
09/08/93, HGBPA Sub-domain

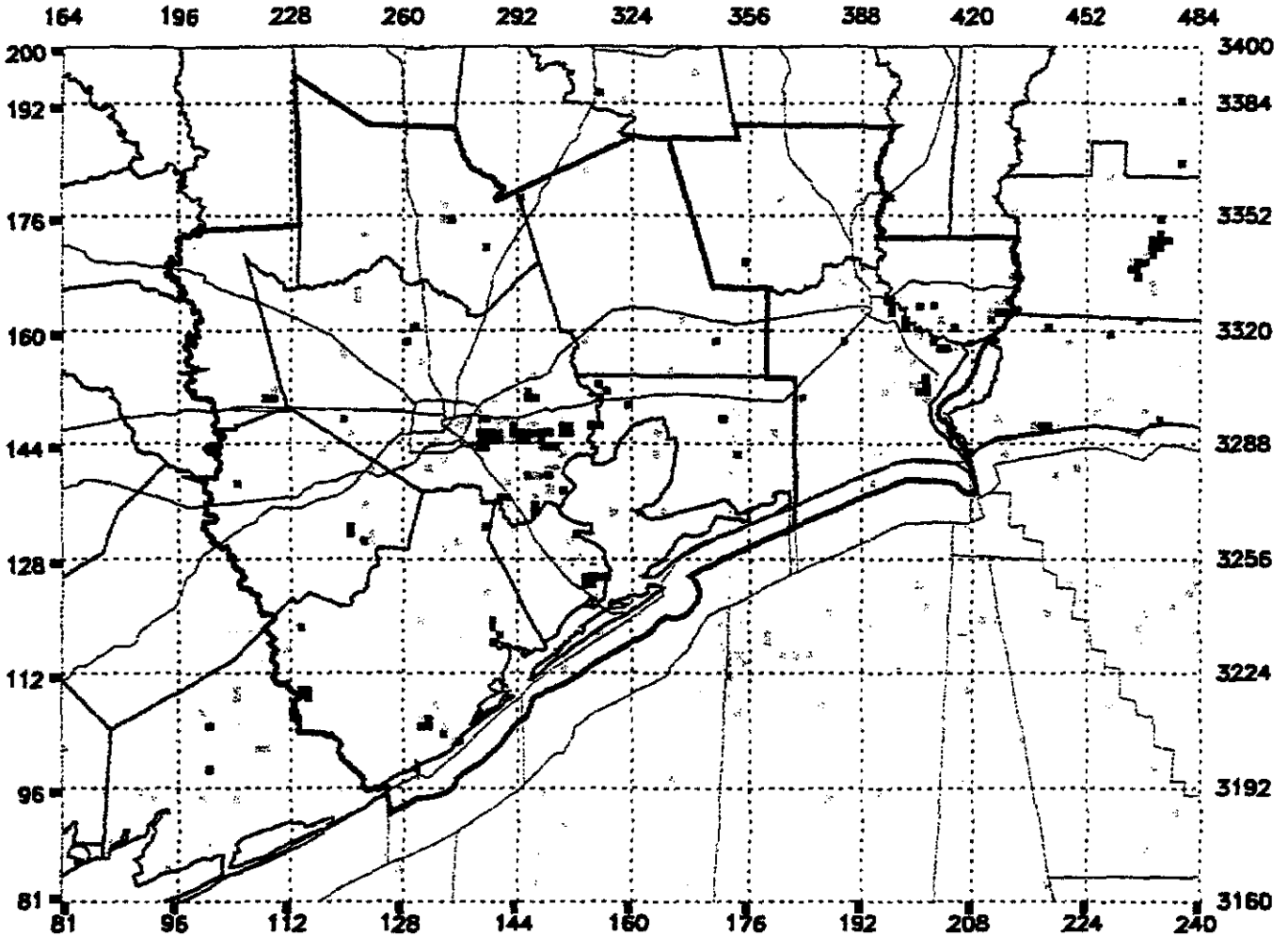




UAM–V Total Point Source NO_x Emissions 09/08/93

COAST Year 2007 Base Emissions

HGBPA Sub–domain (2x2 Km. Grid Cells)



Emissions Plotted

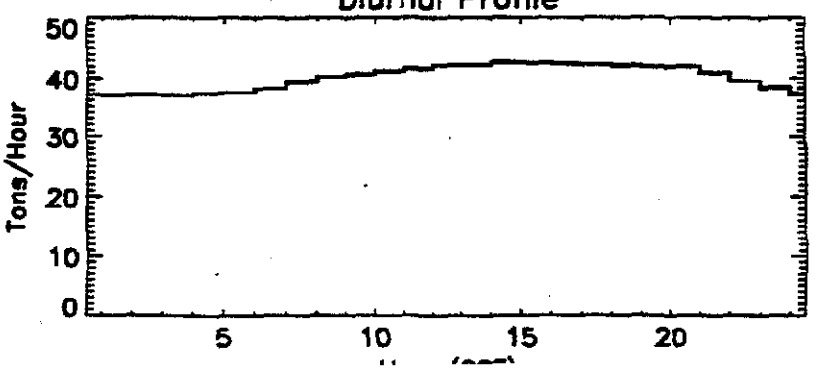
County	Tons/Day
Brazoria	110.94
Chambers	24.72
Fort Bend	97.09
Galveston	117.23
Harris	308.54
Liberty	6.07
Montgomery	10.42
Waller	6.47
H–G SUBTOTAL:	681.48
Hardin	5.85
Jefferson	78.80
Orange	30.79
B–PA SUBTOTAL:	115.45
MAP TOTAL:	962.27

Legend (Tons/Day)

< .001 | .001–.01 | 0.01–0.05 | 0.05–0.1
0.1–0.5 | 0.5–1.0 | 1.0–2.0 | > 2.0

Max Cell: 73.4 tons/day at (245, 3263)

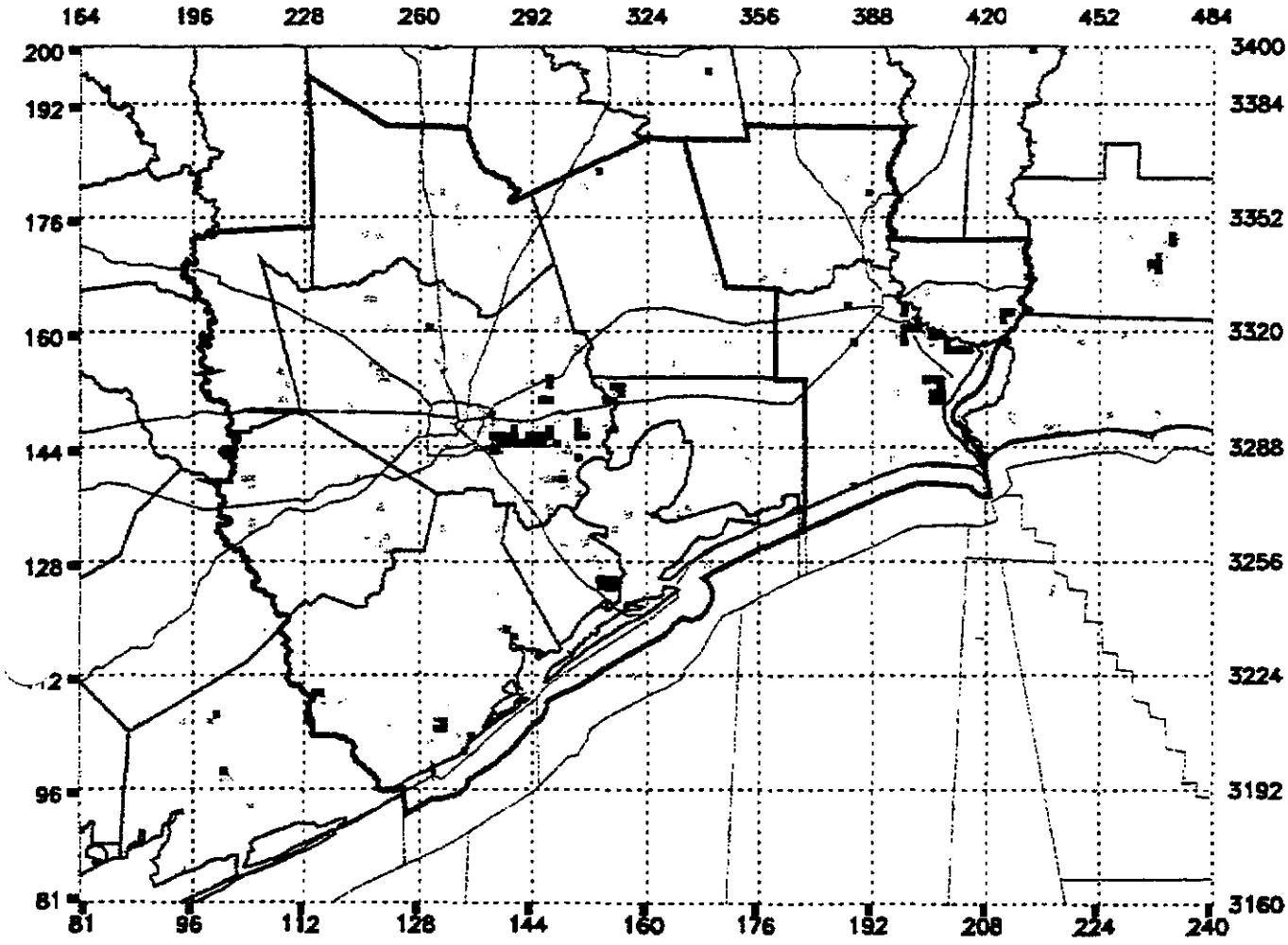
Diurnal Profile



UAM-V Total Point Source CB-IV HC Emissions 09/08/93

COAST Year 2007 Base Emissions

HGBPA Sub-domain (2x2 Km. Grid Cells)



Emissions Plotted

County	Tons/Day
Brazoria	43.27
Chambers	9.60
Fort Bend	3.29
Galveston	43.03
Harris	159.87
Liberty	2.62
Montgomery	2.37
Waller	1.43
H-G SUBTOTAL:	265.46
Hardin	8.16
Jefferson	96.55
Orange	29.10
B-PA SUBTOTAL:	133.81
MAP TOTAL:	460.24

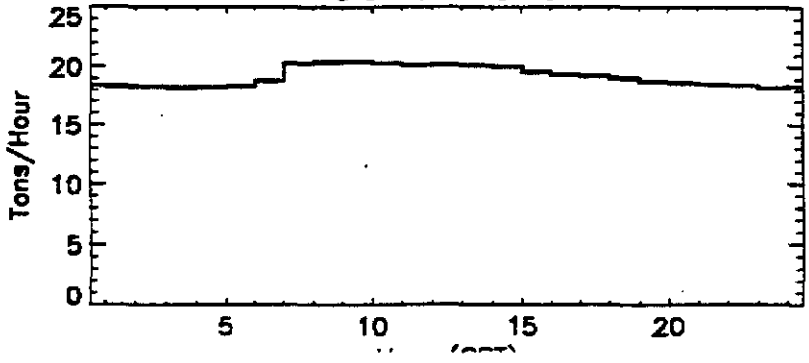
Legend (Tons/Day)

< .001 | .001-.01 | 0.01-0.05 | 0.05-0.1

0.1-0.5 | 0.5-1.0 | 1.0-2.0 | > 2.0

Max Cell: 16.6 tons/day at (315, 3251)

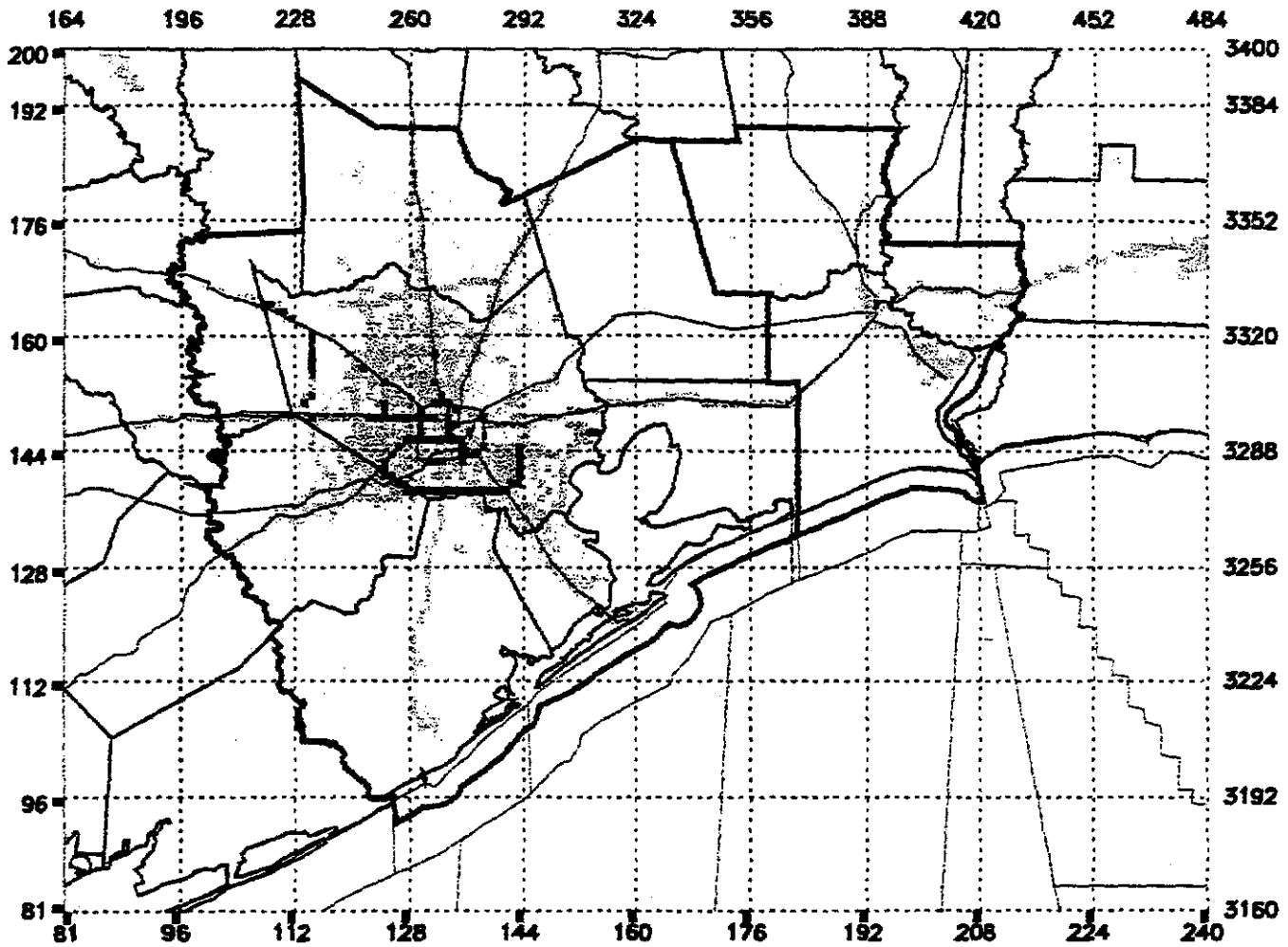
Diurnal Profile



UAM–V On–Road Mobile Source NO_x Emissions 09/08/93

COAST Year 2007 Base Emissions

(2x2 Km. Grid Cells)



Emissions Plotted

County	Tons/Day
Brazoria	17.79
Chambers	6.28
Fort Bend	32.48
Galveston	14.53
Harris	369.36
Liberty	6.03
Montgomery	25.99
Waller	5.92
H–G SUBTOTAL:	478.39
Hardin	4.92
Jefferson	20.57
Orange	8.69
B–PA SUBTOTAL:	34.19
MAP TOTAL:	546.64

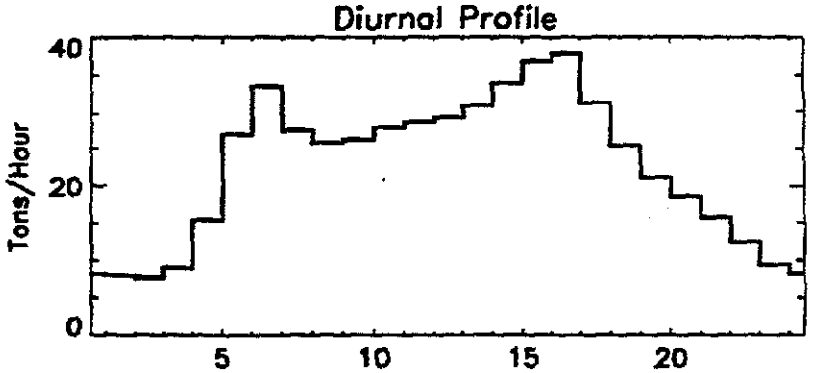
Legend (Tons/Day)

< .001 | .001–.01 | .01–0.05 | 0.05–0.1

0.1–0.5 | 0.5–1.0 | 1.0–2.0 | > 2.0

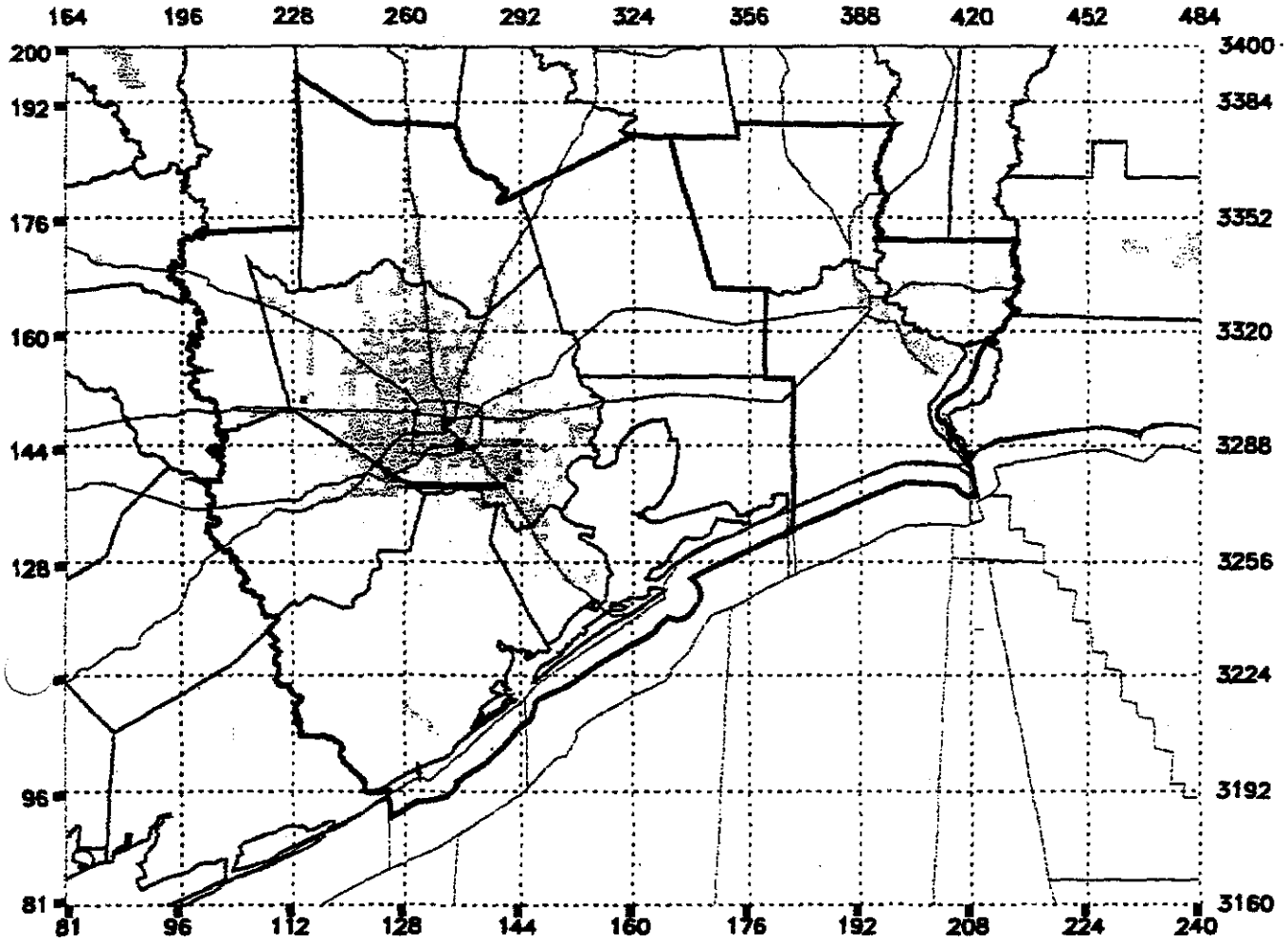
Max Cell: 5.0 tons/day at (255, 3281)

Diurnal Profile



UAM-V On-Road Mobile Source CB-IV HC Emissions 09/08/93

COAST Year 2007 Base Emissions
(2x2 Km. Grid Cells)



Emissions Plotted

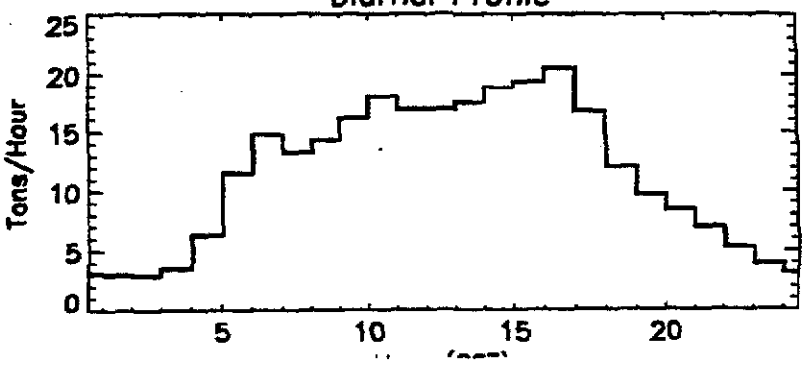
County	Tons/Day
Brazoria	8.35
Chambers	2.36
Fort Bend	15.27
Galveston	7.64
Harris	185.07
Liberty	2.73
Montgomery	11.76
Waller	2.46
H-G SUBTOTAL:	235.63
Hardin	2.49
Jefferson	11.79
Orange	4.08
B-PA SUBTOTAL:	18.36
MAP TOTAL:	279.39

Legend (Tons/Day)

< .001 | .001-.01 | .01-0.05 | 0.05-0.1
0.1-0.5 | 0.5-1.0 | 1.0-2.0 | > 2.0

Max Cell: 2.1 tons/day at (257, 3279)

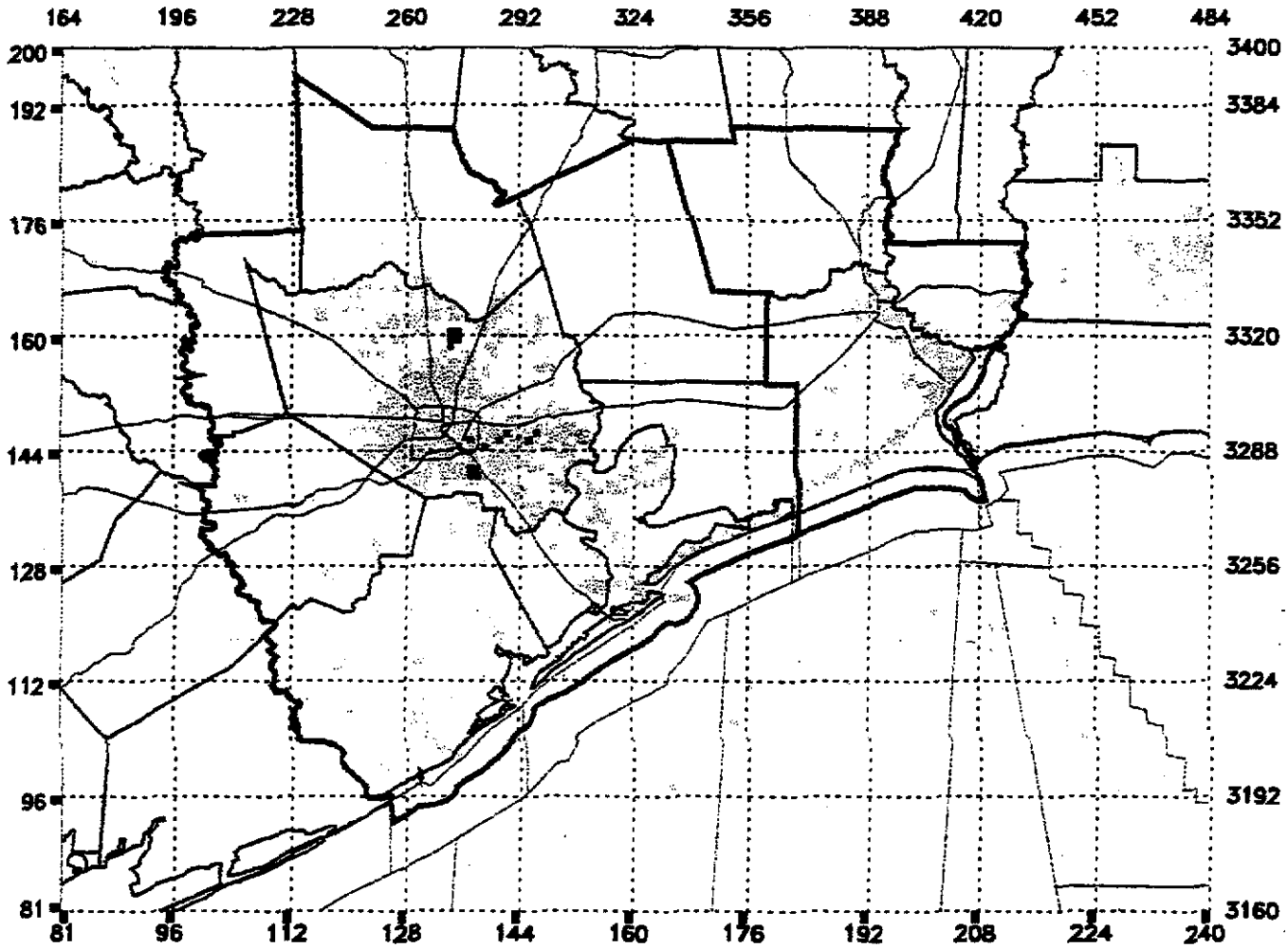
Diurnal Profile



UAM–V Area Source NO_x Emissions 09/08/93

COAST Year 2007 Base Emissions

HGBPA Sub–domain (2x2 Km. Grid Cells)



Emissions Plotted

County	Tons/Day
Brazoria	19.59
Chambers	14.77
Fort Bend	8.55
Galveston	31.14
Harris	180.45
Liberty	6.17
Montgomery	9.48
Waller	1.94
H–G SUBTOTAL:	272.10
Hardin	2.94
Jefferson	35.19
Orange	8.36
B–PA SUBTOTAL:	46.49
MAP TOTAL:	419.28

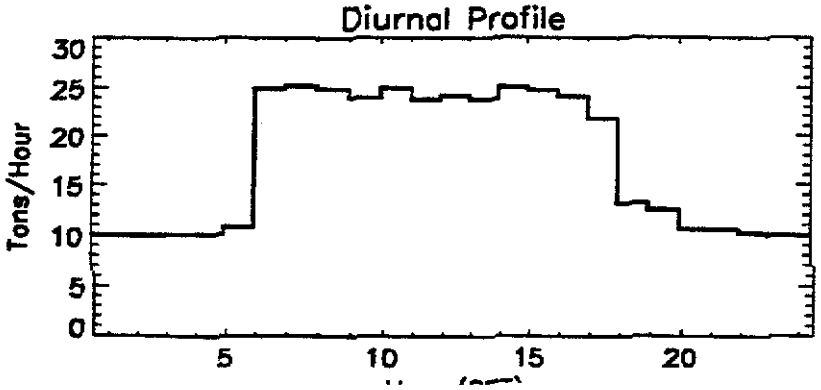
Legend (Tons/Day)

< .001 | .001–.01 | 0.01–0.05 | 0.05–0.1

0.1–0.5 | 0.5–1.0 | 1.0–2.0 | > 2.0

Max Cell: 2.6 tons/day at (273, 3317)

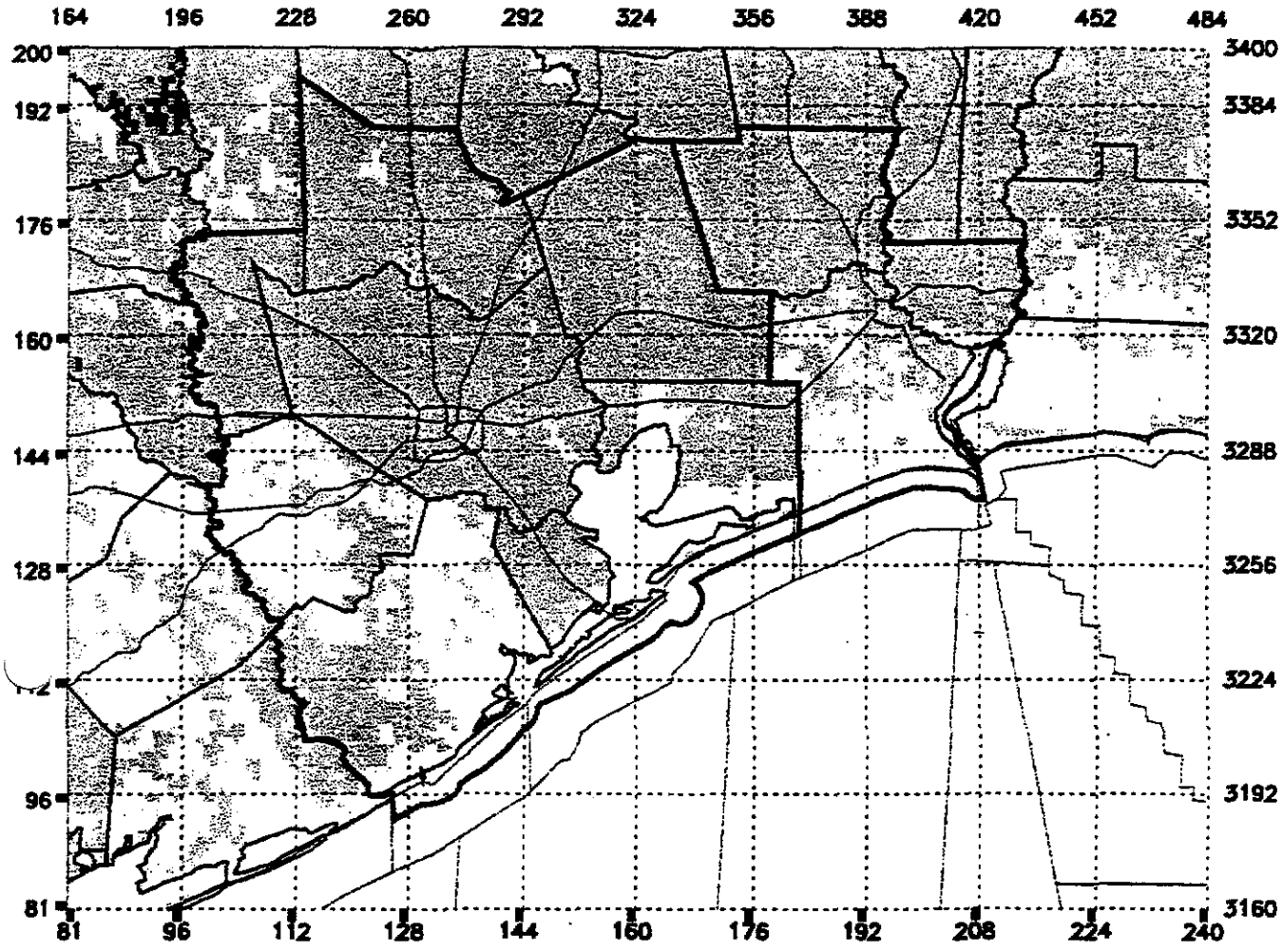
Diurnal Profile



UAM-V Biogenic CB-IV HC Emissions 09/08/93

COAST Year 2007 Base Emissions

HGBPA Sub-domain (2x2 Km. Grid Cells)



Emissions Plotted

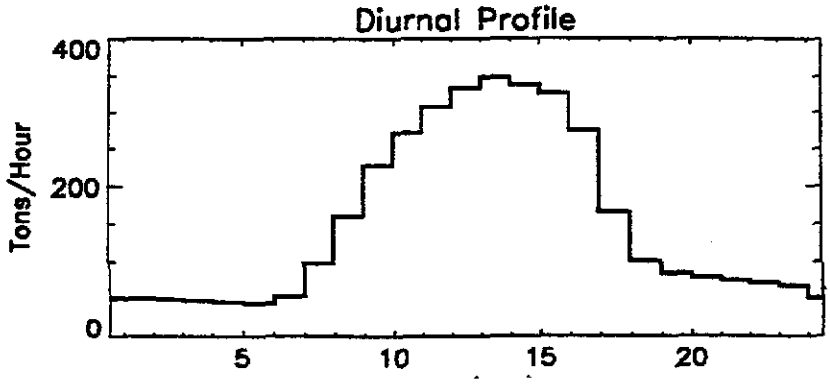
County	Tons/Day
Brazoria	126.83
Chambers	75.95
Fort Bend	45.99
Galveston	45.27
Harris	372.92
Liberty	346.94
Montgomery	365.11
Waller	77.70
H-G SUBTOTAL:	1456.70
ardin	322.38
efferson	100.50
Orange	84.03
B-PA SUBTOTAL:	506.91
MAP TOTAL:	3673.78

Legend (Tons/Day)

< .001 | .001-.01 | 0.01-0.05 | 0.05-0.1

0.1-0.5 | 0.5-1.0 | 1.0-2.0 | > 2.0

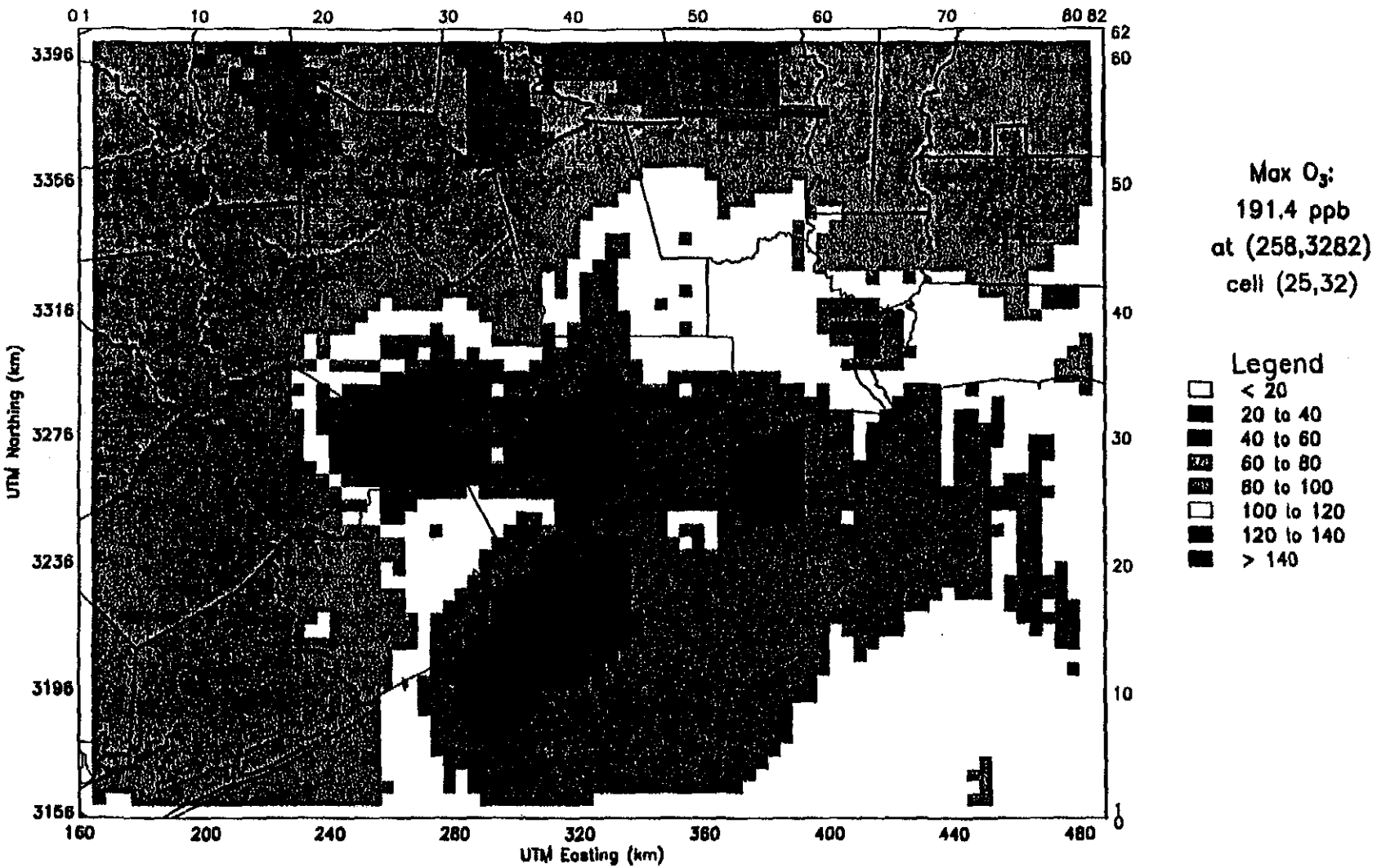
Max Cell: 1.6 tons/day at (189, 3385)



Daily Maximum Hourly Average O_3 Concentrations (ppb) for 09/08/93

COAST UAM-V Year 2007 Emission Control: No Reductions

HG/BPA Subdomain (cell size: 4x4km), Layer 1

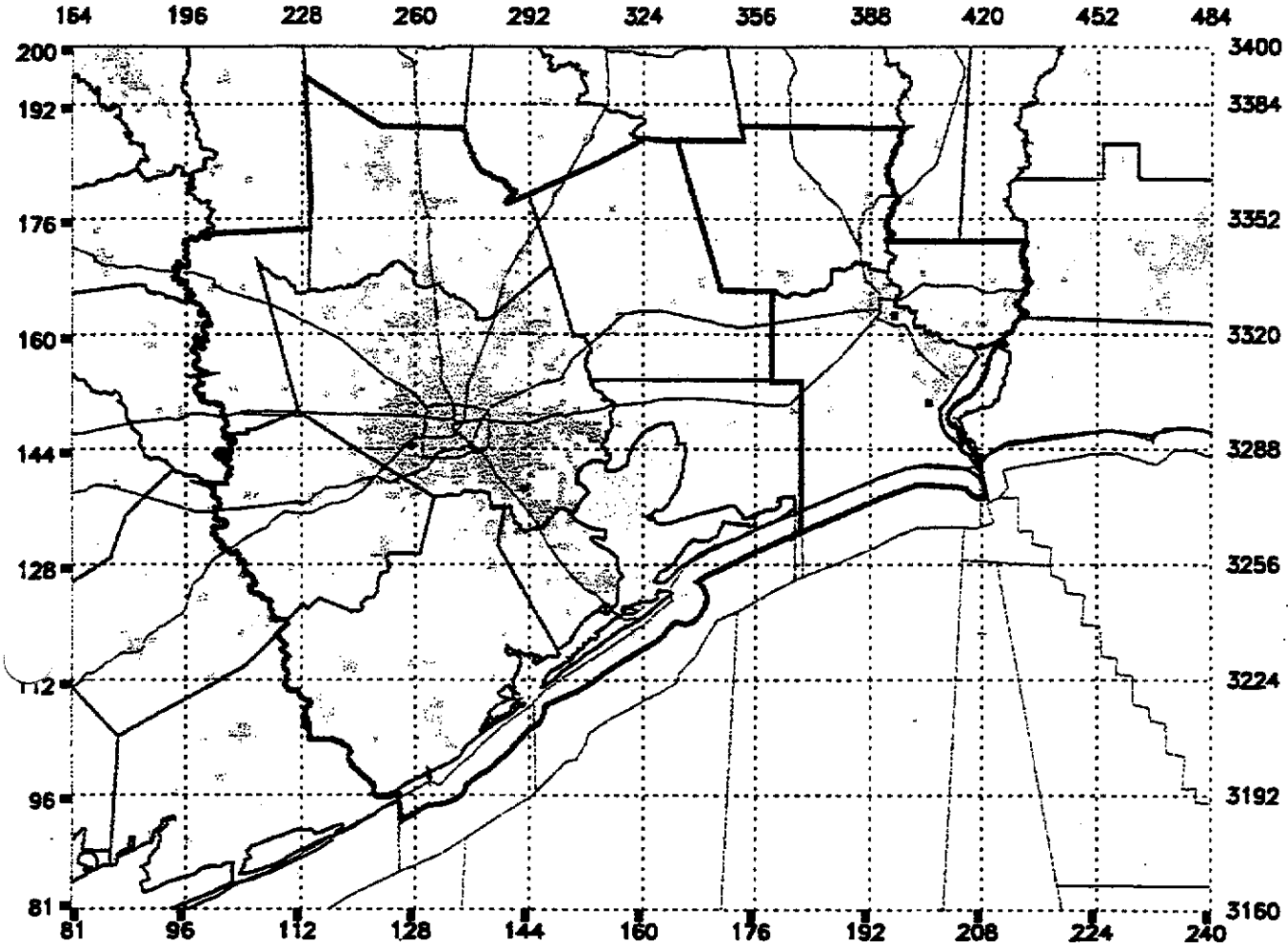


THRCC WZHAO: 10/03/1997 17:08:40: /usmv_aut/07.base.regular/xxxHyyyH/usmv_mrg.930808.07.base.regular.100N100Y.hgbpa_04km

UAM-V Area Source CB-IV HC Emissions 09/08/93

COAST Year 2007 Base Emissions

HGBPA Sub-domain (2x2 Km. Grid Cells)



Emissions Plotted

County	Tons/Day
Brazoria	22.50
Chambers	16.81
Fort Bend	15.44
Galveston	23.76
Harris	188.04
Liberty	10.98
Montgomery	23.28
Waller	5.10
H-G SUBTOTAL:	305.90
Hardin	7.48
Jefferson	30.22
Orange	8.67
B-PA SUBTOTAL:	46.37
MAP TOTAL:	449.02

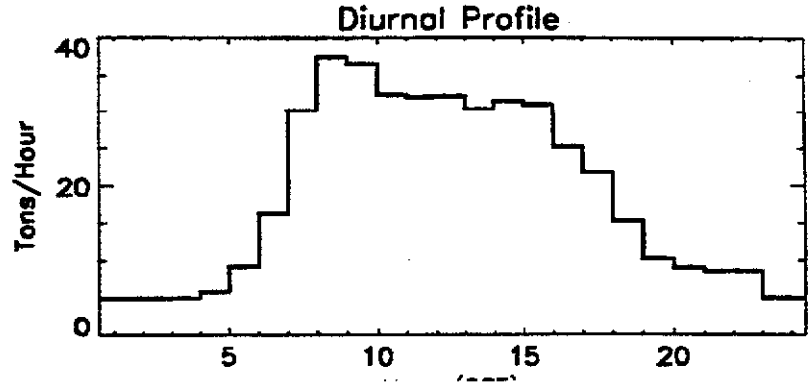
Legend (Tons/Day)

< .001 | .001-.01 | 0.01-0.05 | 0.05-0.1

0.1-0.5 | 0.5-1.0 | 1.0-2.0 | > 2.0

Max Cell: 2.9 tons/day at (395, 3325)

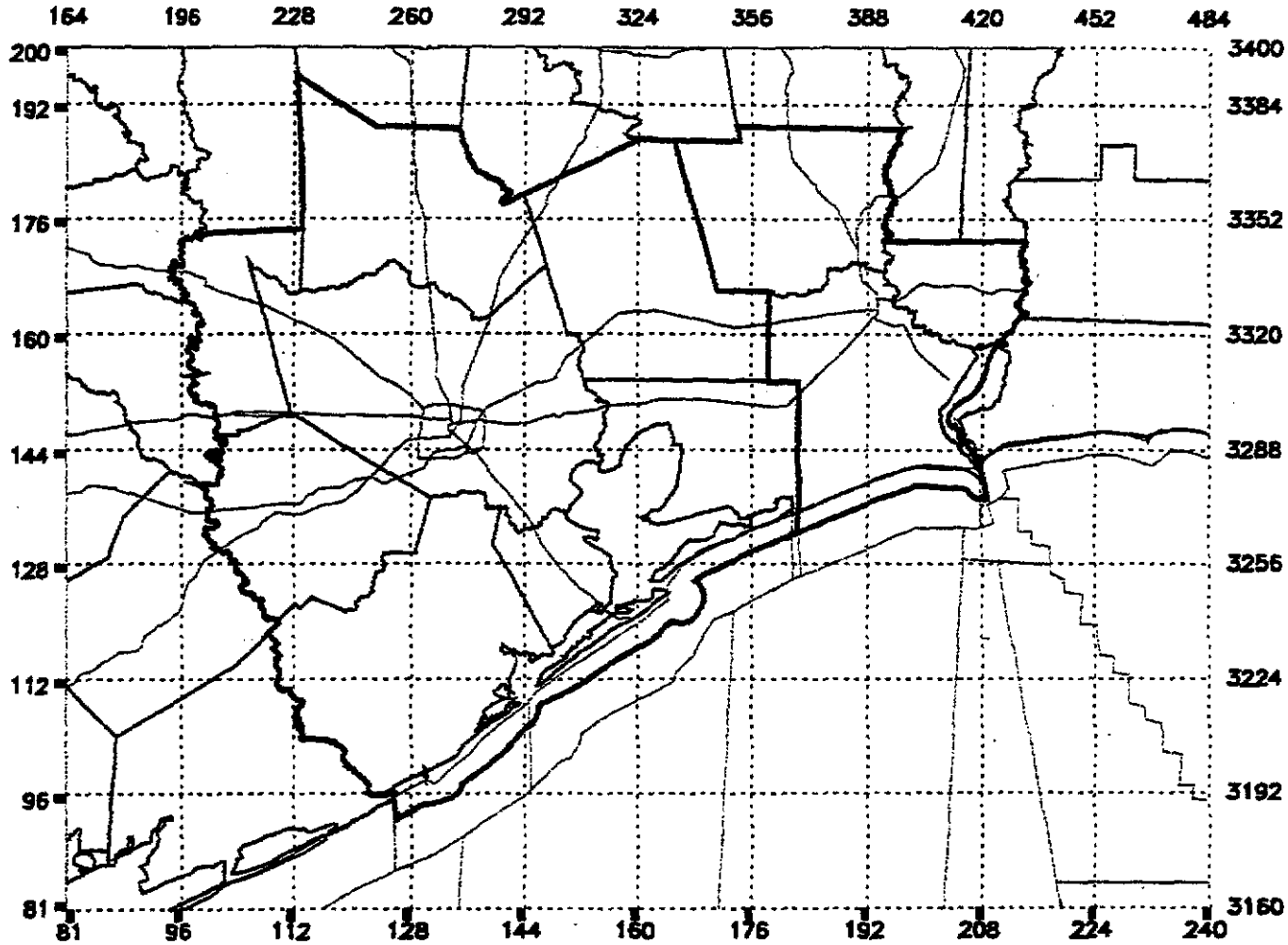
Diurnal Profile



UAM–V Biogenic NO_x Emissions 09/08/93

COAST Year 2007 Base Emissions

HGBPA Sub–domain (2x2 Km. Grid Cells)



Emissions Plotted

County	Tons/Day
Brazoria	4.44
Chambers	1.91
Fort Bend	4.02
Galveston	1.21
Harris	3.91
Liberty	1.92
Montgomery	0.48
Waller	2.05
H–G SUBTOTAL:	19.93
Hardin	0.23
Jefferson	2.22
Orange	0.32
B–PA SUBTOTAL:	2.76
MAP TOTAL:	44.08

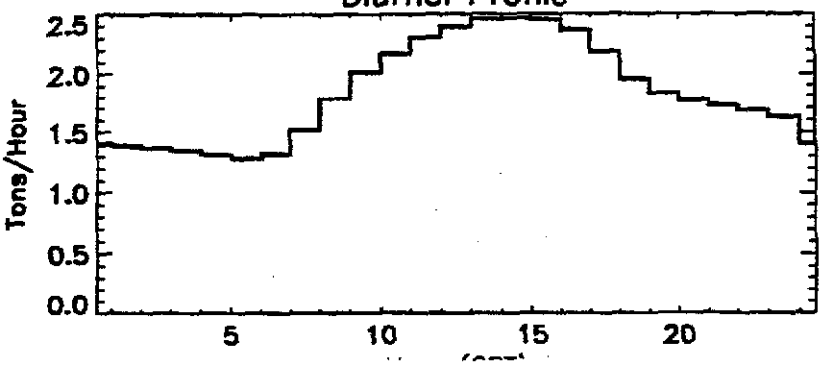
Legend (Tons/Day)

< .001 | .001–.01 | 0.01–0.05 | 0.05–0.1

0.1–0.5 | 0.5–1.0 | 1.0–2.0 | > 2.0

Max Cell: 0.0 tons/day at (175, 3381)

Diurnal Profile



Conclusions from Urban Airshed Modeling Using Data from the Coastal Oxidant Assessment for Southeast Texas

1. VOC reductions alone will reduce maximum ozone concentrations, but will not be sufficient for attainment.

2. NO_x reductions can achieve attainment in HGA, but only with overall reductions of 75% and above from point, mobile, and area sources. Decreases in ozone concentration are relatively small until overall NO_x reductions reach 50% and above.

3. For HGA, NO_x reductions from point sources alone are not sufficient for attainment, nor are they effective alone in reducing ozone. NO_x reductions from mobile and area sources are more effective than from point sources, but are not sufficient for attainment.

4. Combined reductions of point source NO_x and total VOC in the 10-20% range decrease the areal extent of ozone exceedances.

5. For HGA, reductions of VOC and/or NO_x in the 10-20% range would meet the test for a §182(f) exemption, but reductions above 50% would not. Modeling supporting the original §182(f) exemption showed disbenefits at 50% NO_x reduction levels, whereas the current modeling shows benefits at this reduction level.

6. Attainment of the new 8-hour standard will require more NO_x reductions than for the current 1-hour standard.

7. NO_x reductions from utility point sources alone show little or no benefit in reducing ozone.

8. At levels of NO_x reduction of 50% and above, NO_x substitution for VOC may be acceptable under EPA's Rate-of-Progress requirements.

Conclusions from Urban Airshed Modeling Using Data from the Coastal Oxidant Assessment for Southeast Texas

Special considerations for BPA:

1. BPA would not qualify for the §182(f) exemption at any range of reductions.

2. Point source NO_x reductions are beneficial in reducing ozone, but on some modeled days are not sufficient for attainment.

3. Domain-wide reductions in total NO_x would achieve attainment in the 40-75% range. Both local and non-local reductions may be needed for attainment.

Due to the length of the document, the figures from this report are not available in electronic file.

Please contact Eve Hou, (512) 239-5838 or ehou@tceq.state.tx.us, of the TCEQ to attain a hardcopy version.