**Table S1: Meteorological conditions during the field campaign**

Summary of meteorological conditions during the Nov-Dec 2014 field campaign and estimated boundary layer heights from aircraft ([a,b]) and/or LIDAR observations (lower and higher values observed over the duration of the experiment, [c]).

| Date (mm/dd/yy) | Time(local) | $\bar{U}$ (m/s) | $U_{dir}$ (deg) | $z_i$ (m) | $z_i$ determination for emission rate calculation |
|---|---|---|---|---|---|
| 11/13/14 | 11:45-15:30 | 8.0 ± 0.8 | 296 ± 9 | 1250[c] – 1440[c] | LIDAR |
| 11/14/14 | 12:20-15:50 | 4.2 ± 0.7 | 272 ± 13 | 960[a] - 1250[b] | 2 VPs |
| 11/17/14 | 12:45-15:40 | 12 ± 1 | 272 ± 9 | 1060[a] [1060[c]-1345[c]] | LIDAR |
| 11/19/14 | 11:30-14:30 | 15 ± 2 | 240 ± 8 | 1000[a] [1106[c]-1250[c]] | LIDAR and VP |
| 11/20/14 | 12:00-15:25 | 10 ± 1 | 259 ± 7 | 990[a] - 1120[b] | 2 VPs |
| 11/21/14 | 11:50-14:40 | 5.0 ± 0.6 | 139 ± 11 | 495[a] - 495[b] | 2 VPs |
| 11/25/14 | 12:15-14:40 | 6.6 ± 0.7 | 265 ± 8 | 625[c] – 675[c] | LIDAR |
| 12/01/14 | 12:05-15:40 | 8.6 ± 0.9 | 18 ± 37 | 710[a] - 780[b] | 2 VPs |
| 12/03/14 | 12:05-15:10 | 7.2 ± 1.1 | 275 ± 12 | 825[a] - 730[b] | 2 VPs |

U = perpendicular wind speed, downwind transects

$z_i$ = boundary layer height

VP = vertical profile

uncertainties = 1sigma

[a] VP performed upwind the city, at the beginning of the MBE

[b] VP performed downwind the city, at the end of the experiment

[c] LIDAR observations.