**Table S4.** Point estimates (standard error) for the marginal effect of exposure to an additional upwind preproduction well within each distance bin, 2006-2019. Each row presents results for each pollutant in annuli bins out to 4 km, with different model specifications (1-3); model 3 is the primary model discussed in the text. Note that for PM2.5, CO, and VOCs, there were no monitor-days with a preproduction well within 1 km.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dependent variable (units) | n | 0-1 km | | | 1-2 km | | | 2-3 km | | | 3-4 km | | |
|  |  | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) |
| PM2.5 (µg/m3) | 454,722 | – | – | – | 1.92· (0.98) | 1.88\* (0.93) | 2.35\*\* (0.78) | 3.24\*\*\* (0.26) | 2.90\*\*\* (0.25) | 0.97\*\*\* (0.23) | -0.78\*\*\* (0.23) | -1.07\*\*\* (0.22) | -0.46\* (0.20) |
| CO (ppm) | 327,811 | – | – | – | 0.16\* (0.07) | 0.12· (0.06) | 0.09· (0.04) | -0.08\*\*\* (0.01) | -0.08\*\*\* (0.01) | 0.02\* (0.007) | -0.05\*\*\* (0.01) | -0.06\*\*\* (0.006) | -0.03\*\*\* (0.004) |
| NO2 (ppb) | 454,764 | -10.75\*\*\* (0.02) | -9.28\*\*\* (2.11) | 2.27 (1.40) | 3.58\* (1.62) | 2.42 (1.51) | 2.91\*\* (0.98) | -2.44\*\*\* (0.28) | -2.22\*\*\* (0.26) | 0.64\*\*\* (0.18) | -0.71\*\*\* (-0.20) | -1.00\*\*\* (0.18) | -0.60\*\*\* (0.17) |
| O3 (ppb) | 841,020 | -0.31 (0.19) | 0.16 (0.16) | -0.10 (0.11) | 0.09 (0.08) | -0.08 (0.06) | -0.03 (0.05) | 0.86\*\*\* (0.09) | 0.83\*\*\* (0.08) | 0.31\*\*\* (0.06) | 0.45\*\*\* (0.07) | 0.31\*\*\* (0.06) | 0.14\*\* (0.05) |
| VOCs (ppb C)a | 94,349 | – | – | – | -111.8\*\*\* (18.31) | -102.4\*\*\* (17.95) | 14.59 (17.98) | 22.04\*\* (7.08) | 13.43· (6.94) | 7.69 (5.96) | 43.20\*\*\* (6.19) | 43.52\*\*\* (6.06) | -5.94 (5.16) |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Controlsb |  | N | Y | Y | N | Y | Y | N | Y | Y | N | Y | Y |
| Monitor-mo. + basin-yr. FE |  | N | N | Y | N | N | Y | N | N | Y | N | N | Y |

·p < 0.1; \*p < 0.05; \*\*p < 0.01; \*\*\*p< 0.001

a VOCs data were for 1999-2019

b Controls include daily precipitation, mean temperature, wind speed, day-of-week, and number of overhead smoke plumes