





## WEEK 2.1 REPORT – LOCAL SOURCES AND ASSOCIATED GRAPHS

**JANUARY 27<sup>TH</sup>, 2017**

### Summary

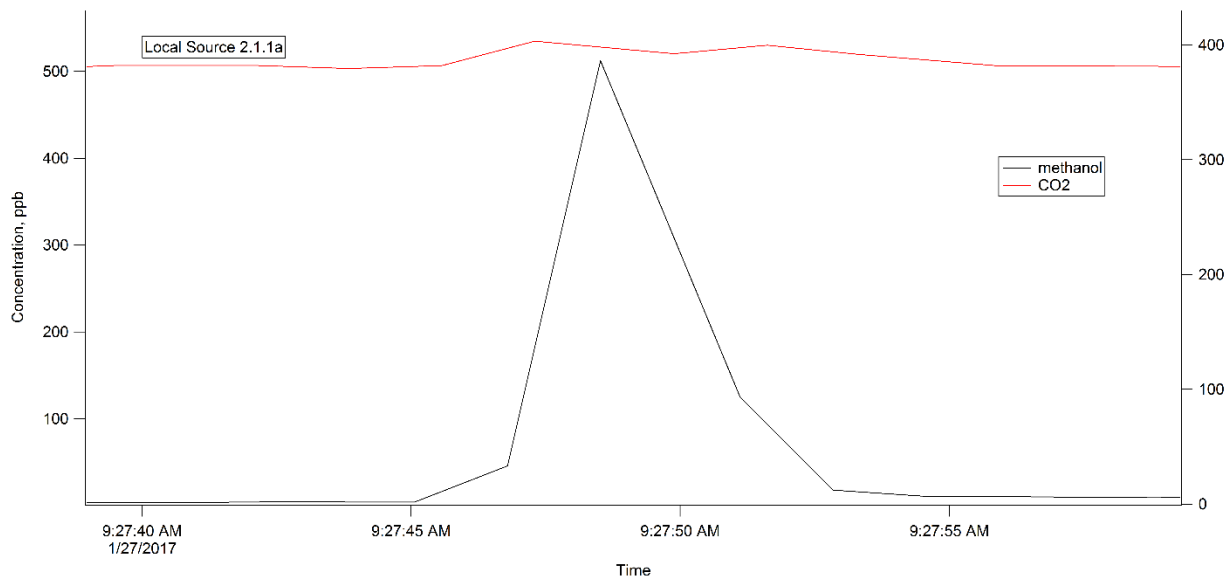
The mobile lab operated between 6:00 AM and 1:30 PM January 27<sup>th</sup>. The field analyst primarily positioned the lab downwind of the AP farm, with some time spent driving around the 200E tank farms.

### January 27<sup>th</sup> Local Sources

LS 2.1.1a, 01/27/17, 9:27:48 AM	1.04 bar, 33F, wind WNW 5 mph	methanol: 512.2 ppb CO2: 403 ppm Detected while stationary to the E of A and AX-Farm. This event spans roughly 10 seconds.
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### January 27<sup>th</sup> Graphs

#### LS 2.1.1a



# January 27<sup>th</sup> Maps

200E



**JANUARY 29<sup>TH</sup>, 2017****Summary**

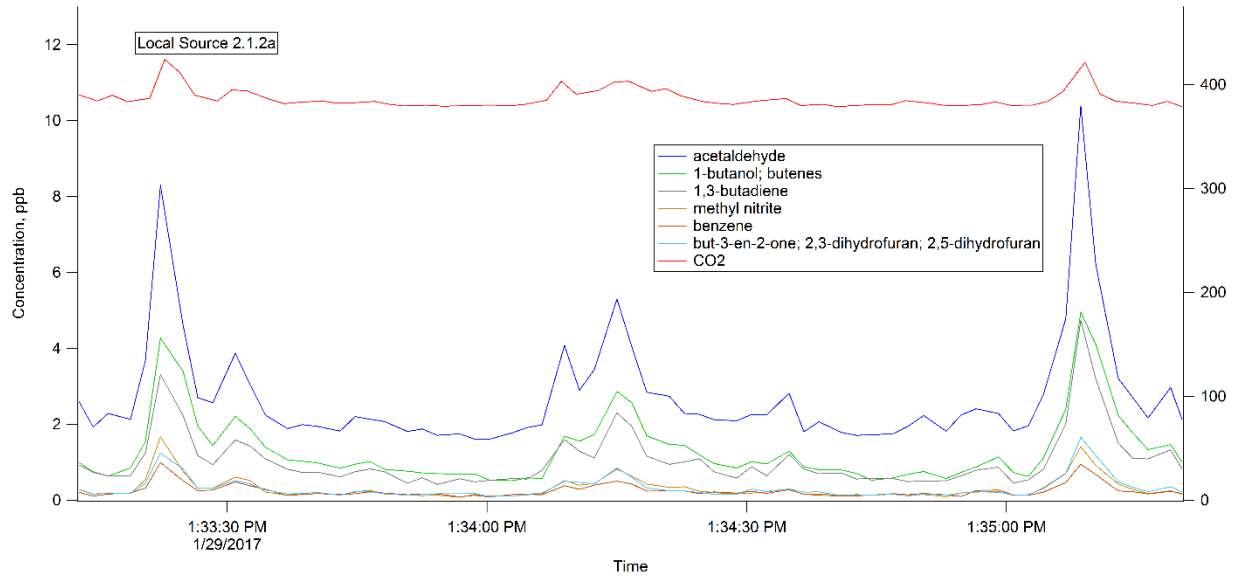
The mobile lab operated between 6:00 AM and 4:00 PM January 29<sup>th</sup>. The field analyst primarily positioned the lab downwind of the AP farm, with some time spent driving around the 200E tank farms.

**January 29<sup>th</sup> Local Sources**

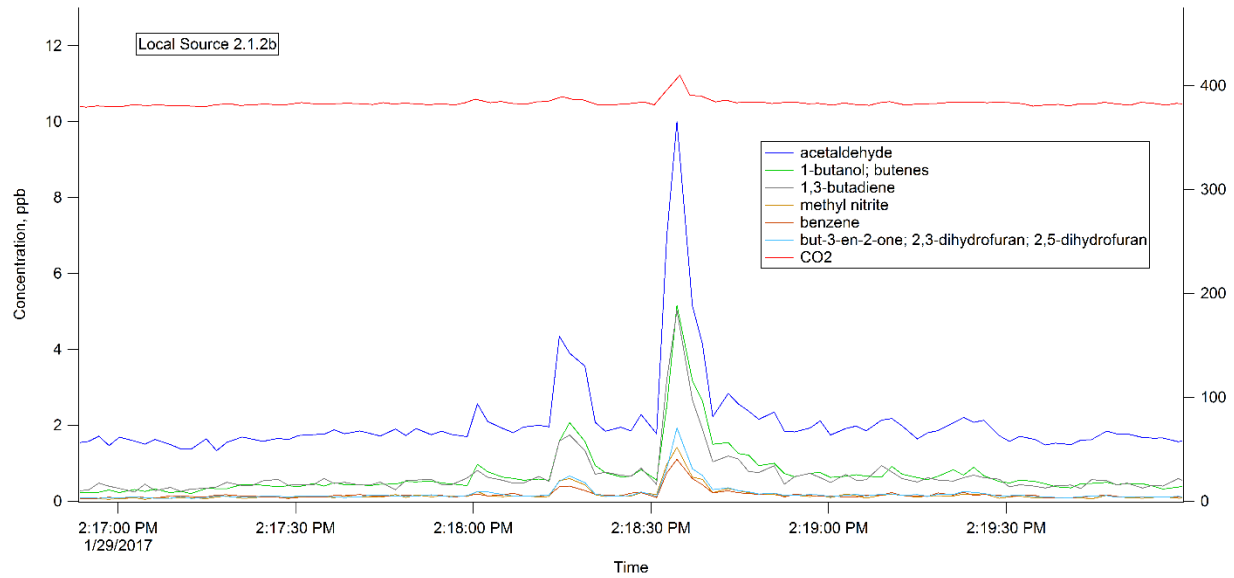
LS 2.1.2a, 01/29/17, 1:33:15 PM	1.03 bar, 34F, wind E 3 mph	acetaldehyde: 10.4 ppb 1-butanol; butenes: 4.9 ppb 1,3-butadiene: 4.7 ppb but-3-en-2-one; 2,3-dihydrofuran; 2,5-dihydrofuran: 1.7 ppb methyl nitrite: 1.7 ppb benzene: 1.0 ppb CO2: 424 ppm Detected while stationary to the N of AP-Farm fence line. Observed elevated CO2 spikes accompany signal spikes from compounds of interest.
LS 2.1.2b, 01/29/17, 2:18:00 PM	1.03 bar, 35F, wind E 2 mph	acetaldehyde: 10.0 ppb 1-butanol; butenes: 5.2 ppb 1,3-butadiene: 5.0 ppb but-3-en-2-one; 2,3-dihydrofuran; 2,5-dihydrofuran: 1.9 ppb methyl nitrite: 1.4 ppb benzene: 1.1 ppb CO2: 410 ppm Detected while stationary to the N of AP Farm fence line. Field notes indicate ML operator is actively trying to avoid exhaust from a generator along the E side of Conex box C010819. Observed elevated CO2 spikes accompany signal spikes from compounds of interest. Composition appears to be similar to LS 2.1.2a.

# January 29<sup>th</sup> Graphs

## LS 2.1.2a



## LS2.1.2b



# January 29<sup>th</sup> Maps

200E

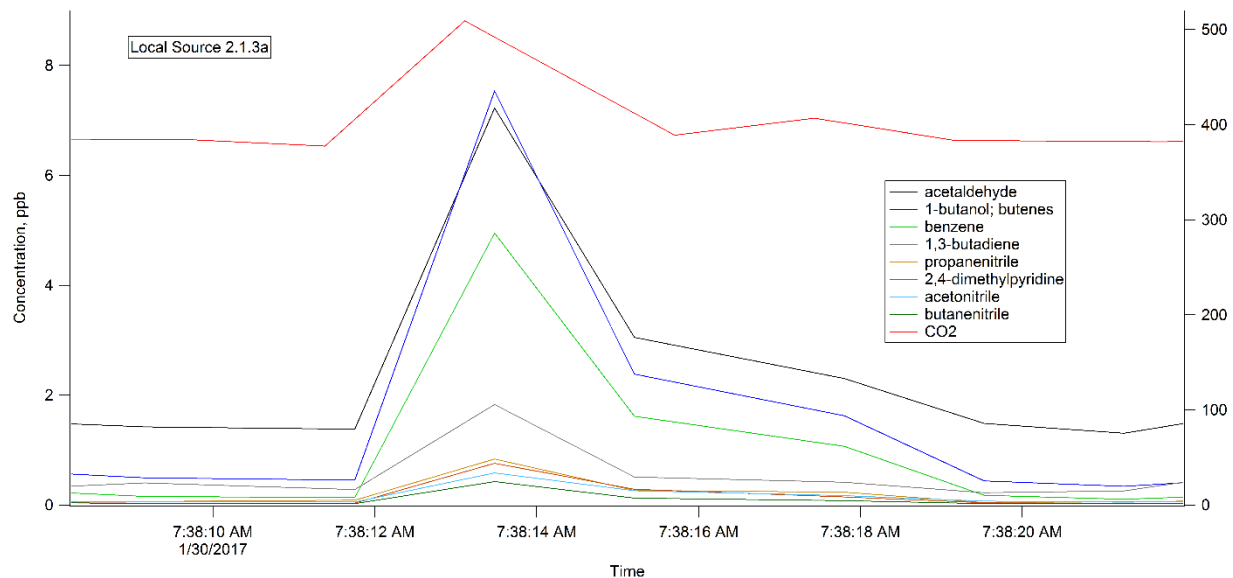


**JANUARY 30<sup>TH</sup>, 2017****Summary**

The mobile lab operated between 6:00 AM and 3:00 PM January 30<sup>th</sup>. The field analyst primarily positioned the lab downwind of the AP farm, with some time spent driving around the 200E tank farms.

**January 30<sup>th</sup> Local Sources**

LS 2.1.3a, 01/30/17, 7:38:10 AM	1.03 bar, 31F, wind W 1 mph	1-butanol; butenes: 7.5 ppb acetaldehyde: 7.2 ppb benzene: 4.9 ppb 1,3-butadiene: 1.83 ppb propanenitrile: 0.8 ppb 2,4-dimethylpyridine: 0.8 ppb acetonitrile: 0.6 ppb butanenitrile: 0.4 ppb CO2: 509 ppm Detected while stationary to the E of AP Farm. This event spans roughly 10 seconds, and is accompanied by elevated CO2.
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**January 30<sup>th</sup> Graphs****LS2.1.3a**



# January 30<sup>th</sup> Maps

200E





**JANUARY 31<sup>ST</sup>, 2017****Summary**

The mobile lab operated between 6:00 AM and 3:00 PM January 31<sup>st</sup>. The field analyst primarily positioned the lab downwind of the AP farm, with some time spent driving around the 200E tank farms.

**January 31<sup>st</sup> Local Sources**

LS 2.1.4a, 01/31/17, 8:43:30 AM	1.02 bar, 30F, wind NW 9 mph	1-butanol; butenes: 13.2 ppb benzene: 7.3 ppb acetaldehyde: 5.9 ppb 1,3-butadiene: 3.3 ppb propanenitrile: 1.9 ppb 2,4-dimethylpyridine: 1.6 ppb butanenitrile: 0.9 ppb acetonitrile: 0.5 ppb NMOR: 0.5 ppb CO2: 407 ppm Note: concentrations shown are peak concentrations recorded over the 45-minute period. Detected while stationary to the SE of AP Farm, at the intersection of the S Grout loop and the AP Farm loop. This event spans roughly 45 minutes. Occasional increases in CO2 signal suggest multiple point sources in the area. Field analyst noted that at 8:49 AM that they had been informed via radio that the AP A-train annulus was being prepared for start. At 8:50 AM, field analyst noted that A-train had started at 8:43 AM. Analyst notes signal spikes throughout this time period, and makes note of a truck at the entrance gate to AP Farm, just south of 217-AP tent. The truck has a liquid tank in its back cargo area and workers were extending a line from it to the AP Farm area. At 9:16 AM, the analyst notes that a gasoline engine with no catalytic converter appears to be running in the cargo area of the aforementioned truck. The analyst then spends the next 15 minutes repositioning the mobile lab ~50 ft east several times to try to find the general location of the vapor column before performing a zero air check at 9:34 AM.
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## January 31<sup>st</sup> Tables

LS 2.1.4a (~45min)	Average (ppb)	Maximum (ppb)
1-butanol; butenes	0.73	13.23
benzene	0.60	7.30
acetaldehyde	1.06	5.94
1,3-butadiene	0.55	3.33
propanenitrile	0.11	1.88
2,4-dimethylpyridine	0.08	1.61
butanenitrile	0.05	0.89
acetonitrile	0.08	0.51
NMOR	0.06	0.45

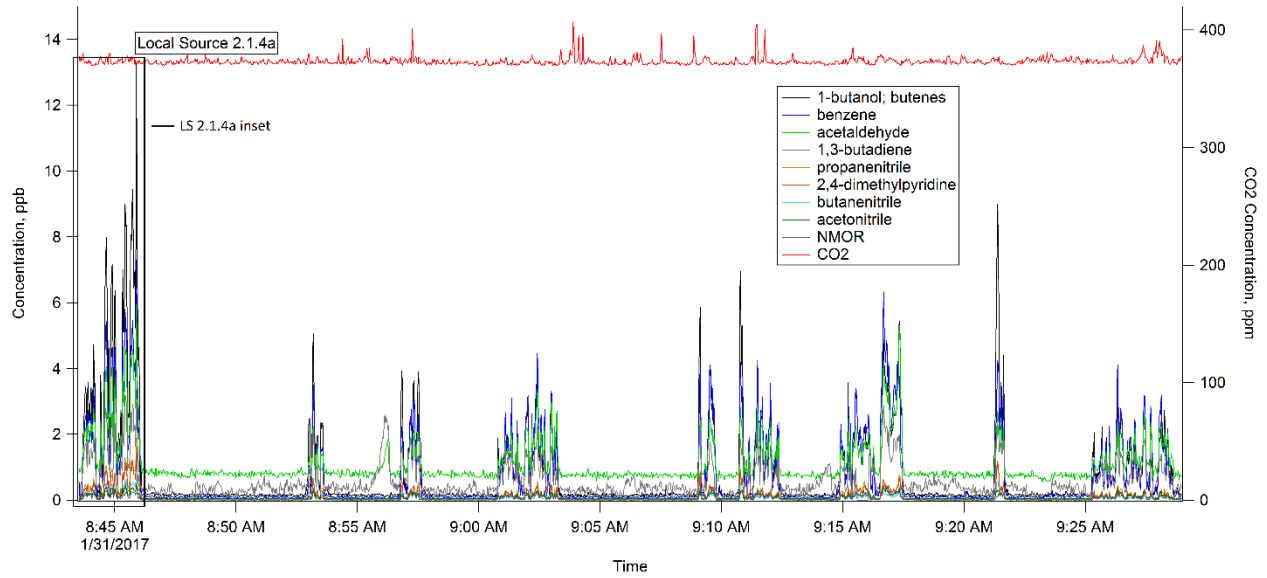
The table above shows the average and maximum concentrations for the signals associated with the compounds shown in LS 2.1.4a for the specific ~45 minute period recorded.

Whole day	Average (ppb)	Maximum (ppb)
1-butanol; butenes	0.29	13.23
benzene	0.16	7.30
acetaldehyde	0.91	22.91
1,3-butadiene	0.36	3.33
propanenitrile	0.05	1.88
2,4-dimethylpyridine	0.02	1.61
butanenitrile	0.02	0.89
acetonitrile	0.05	0.51
NMOR	0.06	0.45

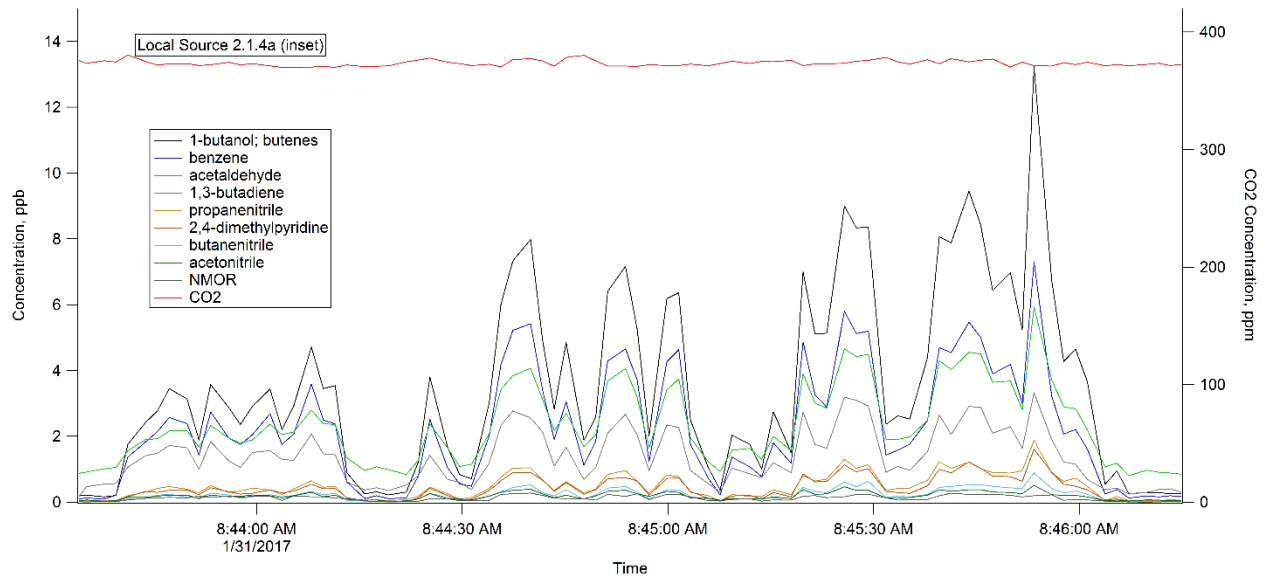
The table above shows the average and maximum concentrations for the signals associated with the compounds shown in LS 2.1.4a, taken over the course of the entire day. From this table it becomes clear that the signals for all compounds in LS 2.1.4a except acetaldehyde saw their peak concentrations during the window of the event. It is also apparent that averages are generally higher during the 45-minute window, although they are still relatively low when compared to OEL.

# January 31<sup>st</sup> Graphs

## LS2.1.4a

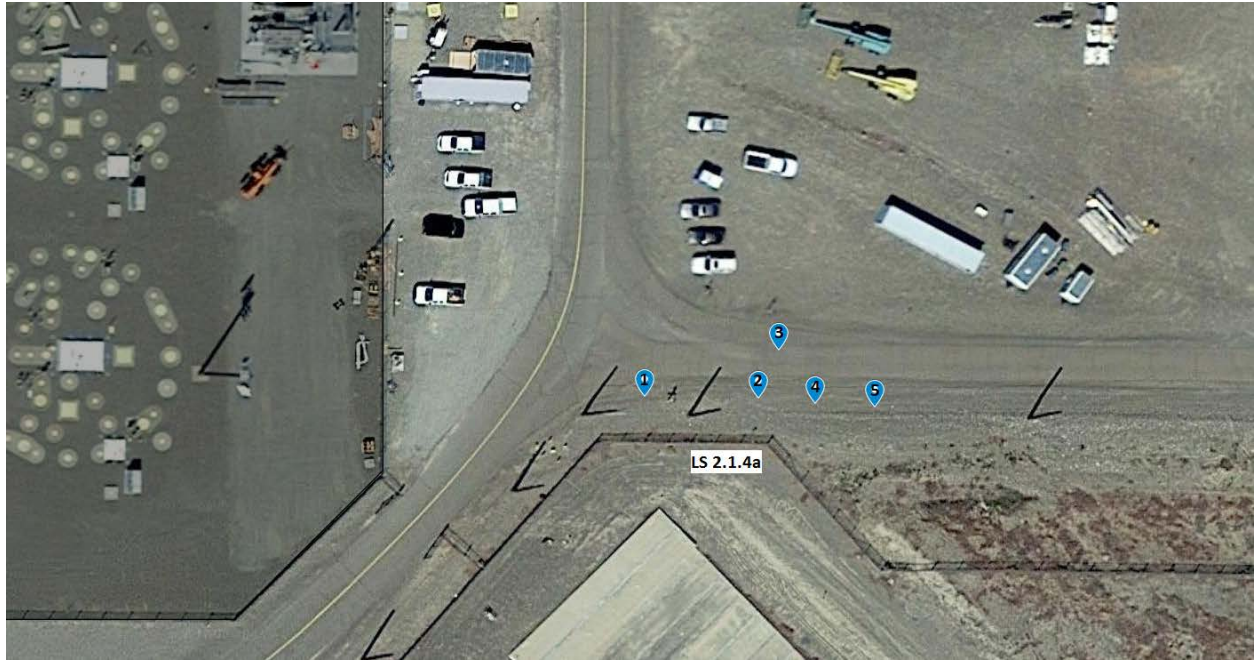


## LS2.1.4a inset



## January 31<sup>st</sup> Maps

200E



Note: the mobile lab was positioned at point 1 on the map above at 8:43 AM, the beginning of this event. The truck mentioned in the field notes was placed just N of the E AP Farm gate shown in the map above. Wind was predominantly out of the NW throughout this time. At 9:15 AM, the mobile lab is repositioned to point 2. Over the next 15 minutes, the lab moves several more times, on both sides of the Grout loop road, before ultimately coming to rest at point 5 by 9:30 AM.