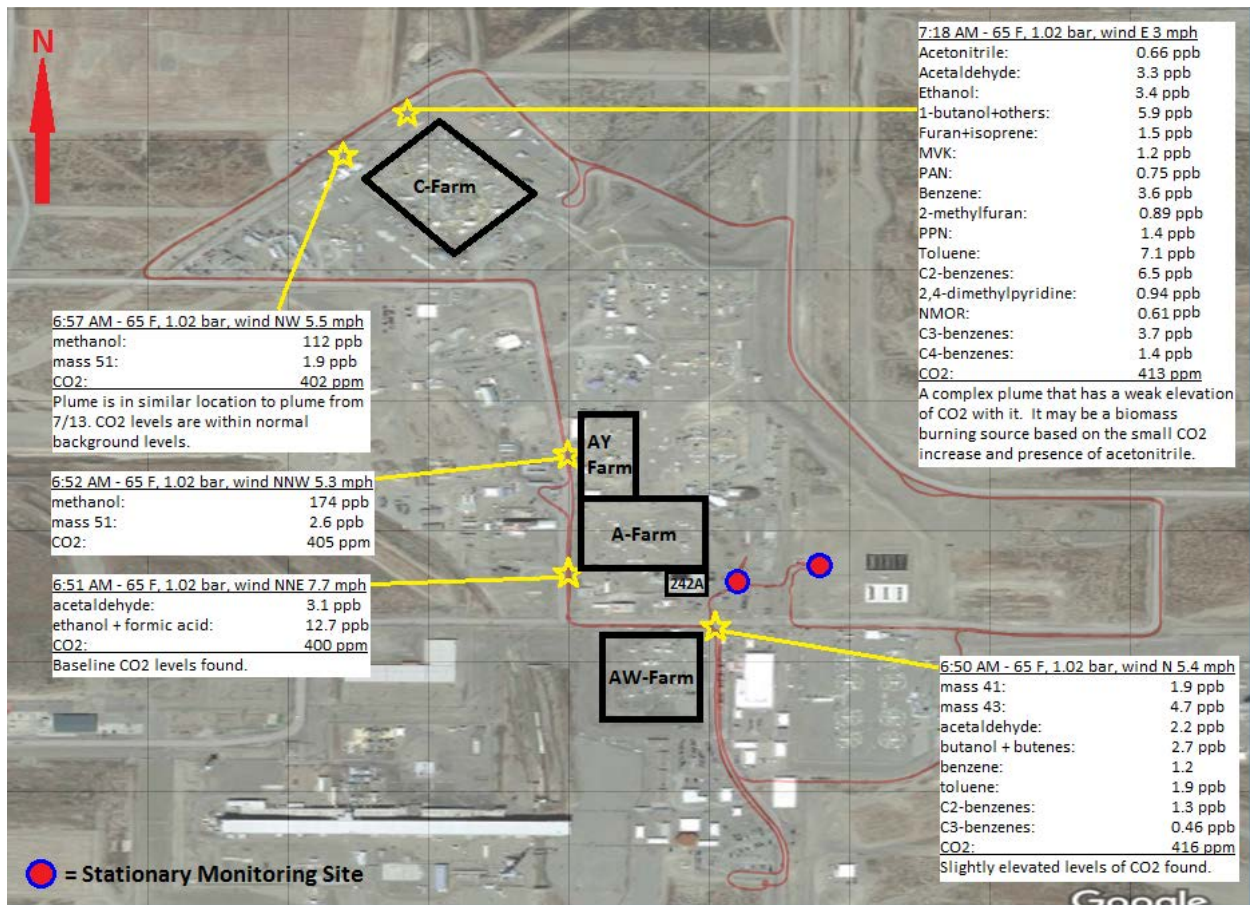


Mobile Lab Results from 7-14 16

The mobile laboratory was used to determine vapors at the Hanford tank farm while travelling through the Hanford tank farms and in specific stationary sites. The specific stationary sites were just west of **AY Tank Farm and A-Tank Farm** and also east of **AW-Tank Farm**. The results from 7-14-2016 indicate compounds that are typical of partial combustion products and other intermediate reactions, rather than tank sources. In any case, all detected compounds are below the **Occupational Exposure Limits (OEL)** for each compound as shown in the table below. Vapor plumes detected were very short durations (less than 2 mins typically) and therefore will not challenge the constant levels of exposure needed to challenge the OEL. The levels detected are consequently well below any immediate effects but may be above odor thresholds. The unidentified compound at mass 51, mass 41, and mass 43 is typical of compound fragments that likely have broken down from other compounds. The chemical listing and their associate OELs can be found here:

<..\..\References\Industrial Hygiene Chemical Vapor Technical Basis RPP-22491 - Rev 1.pdf>



Chemical	OEL	Maximum Concentration Detected
Methanol	200 ppm	0.174 ppm

Acetaldehyde	25 ppm (Ceiling Limit) ¹	0.0038 ppm
Acetonitrile	20 ppm	0.00066 ppm
Ethanol + Formic Acid	Ethanol: 1000 ppm Formic Acid: 5 ppm	0.00127 ppm
Methyl Vinyl Ketone (MVK)	0.2 ppm(Ceiling Limit) ²	0.0012 ppb
1-butanol/butene	20 ppm	0.0059 ppm
Furan+ Isoprene	Furan: 0.001ppm	0.0015 ppm ^{Error! Bookmark not defined.}
Benzene	0.5 ppm	0.0036 ppm
2-Methylfuran	0.001 ppm	0.00089 ppm
C2-Benzene	30 ppm ³	0.0065 ppm
C3-benzene	30 ppm ⁴	0.0037 ppm
C4-benzene	30 ppm ⁵	0.0014 ppm
N-nitrosomorpholine (NMOR)	0.005 ppm	0.00061 ppm
Peroxyacyl nitrate(PAN) ⁶	N/A	0.00075 ppm
Peroxypropionol nitrate (PPN)	N/A	0.00014 ppm
Toluene	50 ppm	0.0071 ppm
CO2	5000 ppm	416 ppm

References:

<..\..\References\acp-9-7623-2009.pdf>

¹ The ceiling limit is the concentration that should not be exceeded during any part of the working exposure.

² The ceiling limit is the concentration that should not be exceeded during any part of the working exposure.

³ As designated OEL per kerosene equivalent for mixture of hydrocarbons per RPP-22491.

⁴ As designated OEL per kerosene equivalent for mixture of hydrocarbons per RPP-22491.

⁵ As designated OEL per kerosene equivalent for mixture of hydrocarbons per RPP-22491.

⁶ PAN and PPN are typically intermediate products when reacting with isoprene.