**Hayesmount Ridge Estates README**

**Overview**

The Hayesmount Ridges Estates deployment is led by the Air Toxics and Ozone Precursors Program (ATOPs) within the Air Pollution Control Division (APCD) of the Colorado Department of Public Health and Environment (CDPHE). The deployment was initiated to respond resident health concerns and suspected elevated formaldehyde measurements, an air toxic regulated by HB21-1189. The goal of this deployment is to determine whether formaldehyde, benzene and toluene, other air toxics that are components of oil and natural gas, are at hazardous levels in the Hayesmount Ridge Estates neighborhood. This README file explains the instruments used, compounds detected, units of measurement, and specifications relevant for data interpretation.

**Measurement Specifications**

**Formaldehyde (HCHO)**

|  |  |
| --- | --- |
| **Instrument Manufacturer** | Aeris Technologies, Inc. |
| **Instrument Model** | Ultra MIRA |
| **Compounds Detected** | HCHO, H2O |
| **Units** | ppbV, ppmV |
| **Detection Limits (in units)** | 2.4, N/A |
| **Sampling Resolution** | 1 second |
| **Notes** | HCHO reported as dry mixing ratio, water is measured and subtracted from signal. |

**Benzene, Toluene**

|  |  |
| --- | --- |
| **Instrument Manufacturer** | Entanglement Technologies |
| **Instrument Model** | AROMA-VOC |
| **Compounds Detected** | Benzene, Toluene |
| **Units** | ppbV, ppbV |
| **Detection Limits (in units)** | 0.046, 0.091 |
| **Sampling Resolution** | 10 minutes |
| **Notes** | Sampling period is 10 minutes, measurement pauses between samples to process data and can vary slightly. |

**Health Guideline Value (HGV) / Level 1 Acute Exposure Guideline Levels (AEGL)**

These concentrations are established by the EPA (AEGL) and CDPHE (HGV) for the compounds measured at this deployment that can cause acute health effects. Methane and ethane are explosive before they become toxic, and are thus not included in this table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Exposure Time** | **H2S (ppbV)** | **Benzene (ppbV)** | **Toluene (ppbV)** | **Ethyl Benzene (ppbV)** | **Xylenes (ppbV)** |
| 10 min | 750 | 130000 | 67000 | 33000 | N/A |
| 30 min | 600 | 73000 | 67000 | 33000 | N/A |
| 60 min | 510\*/70\*\* | 52000\*/9\*\* | 67000\*/2000\*\* | 33000\*/5000\*\* | 2000\*\* |
| 4 hr | 360 | 18000 | 67000 | 33000 | N/A |
| 8 hr | 330 | 9000 | 67000 | 33000 | N/A |

\*1 hour AEGL  
\*\*1 hour HGV