

National People's Oil and Gas Summit

Community Air Monitoring

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Clean Air Quality is Critical to Human Health

When the air in your environment is contaminated, you automatically breathe in the contaminants.

Human Health Effects Associated with air emissions from Oil and Gas Drilling, Production and Distribution

Acute Health Effects

Irritates Skin, Eyes, Nose, Throat and Lungs

Headaches

Dizziness, Light Headed

Nausea, Vomiting

Skin Rashes

Fatigue

Tense and Nervous

Personality Changes

Depression, Anxiety, Irritability

Confusion

Drowsiness

Weakness

Muscle Cramps

Irregular Heartbeat (arrhythmia)

Chronic Health Effects

Damage to Liver and Kidneys

Damage to Lungs

Damage to Developing Fetus

Causes Reproductive Damage

**Damages Nerves Causing Weakness and Poor
Coordination**

Affects Nervous System

Affects the Brain

Leukemia

Aplastic Anemia

Changes in Blood Cells

Affects Blood Clotting Ability

Carcinogen

Mutagen

Teratogen - Developmental Malformations

- In order to**
- evaluate your air quality**
 - identify potential toxic chemicals you are being exposed to**
 - identify potential sources of the toxic air emissions**
 - target toxic chemical reduction efforts**

You need data and information

Air sampling can be performed using a number of methods, depending on the situation in your community.

Rotten Egg Odors

A Jerome meter can be rented to determine the concentration and distribution of sulfur based compounds in your air.

A RAE Photoionization gas detector can be rented to sample for hydrogen sulfide.

The sulfur compounds are usually dense and heavier than air and move away from the emission source close to the ground and when the winds are strong.

The sulfur compounds are extremely toxic and cause severe health impacts.

Be very careful when monitoring, not to be exposed.

When visiting the perimeter of a production site, observe the warning signs to identify if the oil and or gas being produced is sour. If the product is sour, keep a great distance from the production site and remain upwind. Damage to your health is not worth collecting data.

Volatile Organic Compounds (VOCs)

Collect an air sample using a Stainless Steel Summa Canister

Summa Canister

- grab sample**
- 1 hour sample**
- 24 hour sample**

Analyze for Volatile Organic Compounds by GC/MS using EPA Method TO 15

EPA Method TO 15 consist of 84 Volatile Organic Chemicals including:

Benzene
Trimethyl Benzene
Diethyl Benzene
1,2,4-Trimethyl Benzene
Carbon Disulfide
Ethyl-methylethyl disulfide
Carbonyl Sulfide

The sulfur compounds have to be analyzed within 24 hours of sample collection.

Benzene is a known human cancer causing agent and is associated with oil and gas drilling and production.

Increase in Ozone levels have been associated with Oil and Gas Activities

Ozone= Nitrogen Oxide + VOCs + Sunlight + Heat

Nitrogen Oxide (NOX)

Compressors

Diesel Engines

Volatile Organic Chemicals (VOCs)

Oil and Gas Drilling, Fracturing, and

Production

Ozone Health Impacts

Acute Health Impacts

Shortness of breath
Chest pains when inhaling deeply
Wheezing and coughing
Watery eyes
Sore Throat
Increased susceptibility to respiratory infections

Ozone Increases

Pulmonary Inflammation
Risk of asthma attacks
Need for people with lung diseases to receive medical treatments

Ozone and Particulate Matter Monitoring Network are part of Criteria Pollution Monitoring throughout the US

EPA has established real time Ozone and PM 2.5 data reporting system - EPA AIRNow web site

Ozone data available from monitoring stations every 20 minutes

PM 2.5 data available on an hourly basis

Local Weather Channels report Ozone levels

When elevated levels of Ozone are suspected check the EPA AIRNow web site and your local weather channel

If the data indicates elevated Ozone levels, you may consider renting an Ozone monitor.

Gas Find Infrared Thermal Imaging Camera

The IR Camera detects fugitive gas leaks of 20 greenhouse gases leaking from equipment on a real time basis

Through the camera, the leaks appear as smoke being emitted from the leaking equipment

The chemicals detected by the IR Camera include methane and VOCs.

The identified leaks indicate emissions are occurring and additional monitoring, such as Summa Canisters, are necessary to identify the specific chemicals and concentrations being released into the ambient air.

The identification of sources and chemicals being released into the air from oil and gas drilling, fracturing, production and distribution are extremely important in order to:

- evaluate your air quality**
- identify potential toxic chemicals and sources of the toxic chemicals you are being exposed to**
- reduce the toxic emissions**
- improve your air quality**
- protect human health**

But please remember that the collection of data is not worth injuring your health.

Take particular care when monitoring and collecting air samples.









