

Pipeline Safety - What Local Communities Want to Know

**DISH, TX - Toxic Chemicals Being Released from Compressor
Stations and Human Health Impacts Experienced by DISH
Community Members**

Wilma Subra

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Subra Company

EARTHWORKS Board Member

Earthworks Texas OGAP Technical Advisor

DISH, TX

11 Compressor Stations

**Operated by: Atmos Energy
Chesapeake Energy
Crosstex Energy
Enbridge
Energy Transfer Partners**

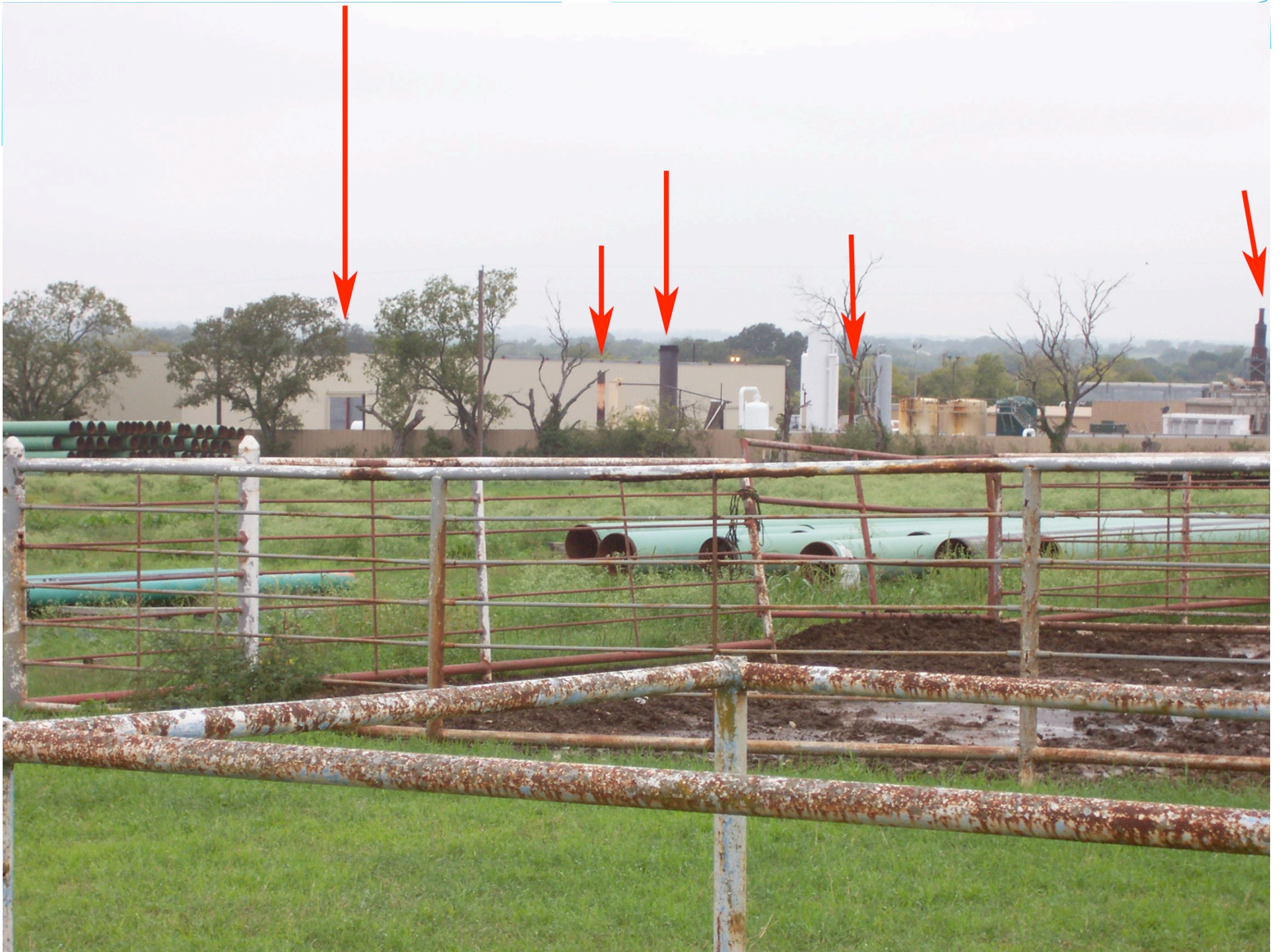
Gas Metering Stations

**Operated by: Atmos Energy
Crosstex Energy
Enterprise**

**Gas Wells in Barnett Shale and Condensate Tanks
Operated by Devon**

Units at Compressor Stations and Gas Metering Stations Releasing Emissions into the air of DISH

- Compressor Engines**
- Compressor Blowdowns**
- Condensate Tanks**
- Storage Tanks**
- Truck Loading Racks**
- Glycol Dehydration Units**
- Amine Units**
- Separators**
- Fugitive Emission Sources**



Air Emissions from Compressor Stations - Permit by Rule by TCEQ in Texas

Permit by Rule Limits of Emissions

25 tons/year All VOCs combined

25 tons/year Sulfur Dioxide

250 tons/year Nitrogen Oxide

250 tons/year Carbon Monoxide

Crosstex - Justin Compressor Station

1 compressor engine

1 condensate tank

1 truck loading rack

Permit by Rule VOC's Limit - 23.34 tons/year

Emissions from condensate tank - 22.09 tons/year

VOC emissions permitted for other compressor stations in

DISH 4.01 to 9.66 tons/year

Wolf Eagle Environmental Collected 7 ambient air samples in DISH on August 17-18, 2009

Locations - North of Compressor stations on residential properties and the air field

Samples analyzed for:

- Volatile Organic Chemicals**
- Hazardous Air Pollutants**
- NOX**
- Methane**

15 Volatile Organic Chemicals Were Detected in the Air Samples in Excess of Texas Commission on Environmental Quality (TCEQ) Short and Long-term Effects Screening Levels

5 of the 7 Ambient Air Stations Sampled Exceeded the Short and/or Long Term Effects Screening Levels

Number of Chemicals Present in excess of Effects Screening Levels:

10 Chemicals Exceeded at 9203 Chisum

8 Chemicals Exceeded at Air Field - Corner SE

5 Chemicals Exceeded at 9213 Chisum

3 Chemicals Exceeded at Air Field - off Yellow Barn

1 Chemical Exceeded at Burgess Horse Ranch

Cumulative Health Effects Not Evaluated

15 Volatile Organic Chemicals Were Detected in Excess of Texas Commission on Environmental Quality Short and Long-term Effects Screening levels

| | Short-term ESL 1 hour Average Health | Long-term ESL Annual Average |
|-----------------------------|--|---------------------------------|
| Carbon Disulfide | 10.3X | 103X |
| Benzene | 1.45X | 55X |
| Methyl Pyridine | 5.3X | 53X |
| Ethyl-methylethyl disulfide | 5.3X | 52X |
| Carbonyl Sulfide | | 33X |
| Trimethyl Benzene | 1.5X | 15X |
| Methyl-Methylethyl Benzene | | 3.3X |
| Diethyl Benzene | | 2X |
| 1,2,4-Trimethyl Benzene | | 1.9X |

**Human Health Effects Associated with Chemicals Detected in the
air in Excess of TCEQ Short and
Long -Term Effects Screening Levels**

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)

**Human Health Effects Associated with Chemicals Detected in
the air in Excess of TCEQ Short and
Long -Term Effects Screening Levels**

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**

Preliminary Results of Health Survey in DISH, TX

Odors Occur 1 to 7 Days /week

Odors Occur 5 to 24 days /month

Odors consist of: Sulfur smell

Natural gas smell (with odorizer)

Health Impacts from Odors

Health Effects Associated with Sulfur Smell

Burning Eyes

Runny Nose

Sore Throat

Sinus

Headaches

Asthma

Health Effects Associated with Natural Gas Smell

Nausea

Indigestion

Headaches

Asthma

Health Effects Reported By DISH Community

| | |
|-----------------------------|-------------------------|
| Nasal Irritation* | Increased Fatigue* |
| Throat Irritation* | Dizziness* |
| Eyes Burning* | Forgetfulness |
| Frequent Nausea* | Easy Bruising |
| Allergies | Muscle Aches & Pains* |
| Sinus Problems* | Weakness* & Tired* |
| Bronchitis* | Ringling in Ears |
| Persistent Cough | Sores & Ulcers Mouth |
| Chronic Eye Irritation* | Urinary Infections |
| Shortness of Breathe | Depression* |
| Severe Headaches* | Decreased Motor Skills* |
| Frequent Nose Bleeds | Falling, Staggering* |
| Sleep Disturbances | Frequent Irritation* |
| Joint Pain | Amnesia |
| Difficulty in Concentrating | Severe Anxiety* |
| Nervous System Impacts | Excessive Sweating |
| Irregular/Rapid Heart Beat* | Abnormal EEG* |
| Strokes | Lump in Breast |
| Enlarged Spleen | Thyroid Problems |
| Pre-Cancerous Lesions* | Endometriosis |
| Abnormal Mammogram | Brain disorders* |

*Health Impacts Associated with Chemicals present in Excess of Short and Long Term Effects Screening Levels

