**What is helium?**
Helium is the second most abundant element in the universe after hydrogen. It is a colorless and odorless inert gas that has unique properties.

**What makes helium so unique?**
Of all the elements, helium is the most stable; it will not burn or react with other elements. Helium has the lowest melting and boiling points. It exists as a gas, except under extreme conditions. At temperatures near absolute zero, helium is a fluid; most materials are solid when cooled to such low temperatures.

**Where does helium come from?**
Helium is a non-renewable natural resource that is most commonly recovered from natural gas deposits. Geologic conditions in Texas, Oklahoma, and Kansas make the natural gas in these areas some of the most helium-rich in the world (with concentrations between 0.3 percent and 2.7 percent).

**What is helium used for, and why is it a strategic natural resource?**
Perhaps the most familiar use of helium is as a safe, non-flammable gas to fill party and parade balloons. However, helium is a critical component in many fields, including scientific research, medical technology, high-tech manufacturing, space exploration, and national defense. Here are a few examples:

- The medical field uses helium in essential diagnostic equipment such as MRI's. Helium-neon lasers are used in eye surgery.
- National defense applications include rocket engine testing, scientific balloons, surveillance craft, air-to-air missile guidance systems, and more.
- Helium is used to cool thermographic cameras and equipment used by search and rescue teams and medical personnel to detect and monitor certain physiological processes.
- Various industries use helium to detect gas leaks in their products. Helium is a safe tracer gas because it is inert. Manufacturers of aerosol products, tires, refrigerators, fire extinguishers, air conditioners and other devices use helium to test seals before their products come to market.
- Cutting edge space science and research requires helium. NASA uses helium to keep hot gases and ultra-cold liquid fuel separated during lift-off of rockets.
- Arc welding uses helium to create an inert gas shield. Similarly, divers and others working under pressure can use a mix of helium and oxygen to create a safe artificial breathing atmosphere.
- Helium is a protective gas in titanium and zirconium production and in growing silicon and germanium crystals.
- Since helium doesn't become radioactive, it is used as a cooling medium for nuclear reactors.

- Cryogenics, superconductivity, laser pointers, supersonic wind tunnels, cardiopulmonary resuscitation pumps, monitoring blimps used by the Border Patrol, and liquid fuel rockets all require helium in either their manufacture or use.

For many of these applications, there is no substitute for helium. Helium is a non-renewable resource found in recoverable quantities in only a few locations around the world, many of which are being depleted. Accordingly, the U.S. has important economic and national security interests in ensuring a reliable supply of helium.

As Local Govt Designee I have researched Helium exploration

I have contacted the COGCC

I have reviewed the permit application submitted by Vecta Oil and Gas LTD (Vecta) to drill 2 helium wells in Las Animas County

From form 2A COGCC permit application

Vecta O&G, Ltd. proposes to develop up to 4 exploratory (wildcat) conventional vertical helium gas wells, flowlines, and access on existing disturbed rangeland in rural Las Animas County. The development avoids impacts to public health, safety, welfare, the environment, and wildlife by exhibiting the following:

(1) Inert helium gas extraction with no known oil or natural gas entrained with the helium resource. The finding is based

on historical well log and scout information for this location.

(2) No hydrocarbons or hazardous air pollutants associated with the helium gas wells.

(3) The nearest residence is approximately 0.75 miles away from the nearest Sammons Ranch well (315315C).

(4) Each well pad contains a single well with 160-acre pad spacing.

(5) Well pad footprints are limited to approximately 1.1 acres during 7-10 days of drilling and will be reclaimed to

approximately 0.2 acres during interim reclamation.

(6) Conventional vertical well drilling requires no fracking or proppant.

(7) The wells generate no produced water. There is no on-site storage of produced water, oil, natural gas, or condensate.

(8) The nearest waterbody is > 0.5 mi away.

(9) There is no high priority habitat or mapped species of concern within 1 mile.

Wells have been planned to be on center in a quarter section. All of the drawings submitted with the application indicate

that the well is on center. However, the well plots in the following quarter-quarter section: NE ¼ SW ¼, Section 10.

This is from the for 2A for a well in las animas county

Following are the the people at the COGCC I have spoken to

- Communications Officer **Castle, Megan** (303) 513-2713 **megan.castle@state.co.us**
- Region (170) Compliance Supervisor **Quint, Craig**

  Craig Quint - DNR <craig.quint@state.co.us>,

- **Western Region Engineering Supervisor**

  **Burger, Craig (303) 894-2100 x5687**

  **(970) 319-4194 (cell) craig.burger@state.co.us**

- Area (120) Compliance Specialist

  **Beardslee, Tom (970) 420-3935**

  **tom.beardslee@state.co.us**

There are only 7 facilities in the use to process helium to a liquid that can then be transported overseas for sale

Helium is extracted thru air drilling wells that run 1200 fo to 2500 feet in depth there is not fracking

As the helium is captured as a gas it has to be processed to extract only the helium  Other components to the gas extracted is nitrogen and natural gas  The extracted gas is processed on site The natural gas has to be captured and somehow sent to a point of sale because it cannot be released to the air due to potential environmental damage  Methane

The natural gas may also be put into an injection well

It is not clear how the well in las animas is dealing with this natural gas component and I am looking into that

When the extracted helium is still a gas it is loaded onto tube trailers and transported to one of the 7 helium lignifying plants in the us  one in chyanne  Colo is the closest

Upon speaking to Mr Quint

Extracted gas is about 2% helium  The rest is natural gas and maybe nitrogen  and in areas he has worked and they process the natural gas

When reviewing the form 2c that was submitted to the cogcc by the company in LasAnimas there was no mention of natural gas

Mr Quint was asked about this and if there was natural gas comingling with helium what was the extraction method they were going to use

Mr Quint spoke with to operator in Las Animas.  They have determined, by test holes apparently, that the Helium that is extracted in these 2 well will have only nitrogen as a comingle  Nitrogen is released into the atmosphere

The helium is placed into tubes and transported by ground to a processing facility as previous described

Finally

Helium is regulated under the same permitting requirements of natural gas  Helium drilling would also be under our oil and gas reg in our land use regulations  I have been told that dust mitigation is a concern at these sites

I am communicating with the COGCC regarding a form 2 for the las animas wells. That addresses down hole issues.