Oak Meadow Homeowners Association Briefing

May 24th, 2017

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Director
Agenda:

- Coors V6-14Ji Well and Oak Meadows Subdivision History
- Environmental Impacts Investigation and Remediation
- COGCC Notice To Operators re: Flowlines
Coors V6-14Ji Well and Oak Meadows Subdivision History
Coors V6-14Ji

- Vertical well, drilled by Gerrity Oil & Gas Corp. in 1993.
- Drilled to Codell formation; total depth of 7912 feet.
- Well produced primarily gas, but also produced some oil.
- Patina Oil & Gas Corp. acquired the well in 1997.
- Patina re-completed the well to the J sand in 2001.
- Noble Energy acquired the well in 2005.
- Anadarko acquired the well in 2014.
10/3/1999 aerial image; 1999 facility status

- **123-11049** Coors Fee 3-6 Spud: 4/8/1983 PR
- **123-17244** Coors V6-11 Spud: 1/4/1993 PR
- **123-17323** Coors V6-13 Spud: 11/18/1993 PR
- **123-17324** Coors V6-14 Ji Spud: 11/30/1993 PR
- **123-12193** Coors Fee 4-6 Spud: 2/27/1984 PA 7/18/1985
- **123-11049** Coors Fee 3-6 Spud: 4/8/1983 PR
- **123-17323** Coors V6-13 Spud: 11/18/1993 PR
- **123-17324** Coors V6-14 Ji Spud: 11/30/1993 PR
- **123-11049** Coors Fee 3-6 Spud: 4/8/1983 PR
- **123-17244** Coors V6-11 Spud: 1/4/1993 PR
10/9/2015 aerial image; current facility status

1. Facility Abandoned in 11/2014
2. 123-11049 Coors Fee 3-6 PA 11/19/2014
3. 123-12193 Coors Fee 4-6 PA 7/18/1985
4. 123-17244 Coors V6-11 PA 11/7/2014
5. 123-17323 Coors V6-13 PR 2/28/2017
6. 123-19674 Coors V6-13Ji PR 2/28/2017

Active Production Facility AC 2/28/2017
Abandoned Flowline
Active Flowline
Active Well
Abandoned Well
Environmental Assessment & Progress Update
Methane Information

- Natural Gas vs. Methane
- Fire/Explosion
- Asphyxiant
- Toxicity
- Environmental
Ground Methane Driving Survey

Apogee Scientific, Inc. Leak Detection System (LDS)
Real-time, mobile detection of methane (CH4), carbon dioxide (CO2), and total hydrocarbons (HC)

Apogee-sci.com/leak-detection
Ground Methane Driving Survey
Ground Methane Driving Survey

Elevated methane detected:
Methane 4.5 ppm (0.00045%)
Air monitoring ~200 ppm

Elevated methane detected:
Methane 4.5 ppm (0.00045%)
Hydrocarbons 8 ppm
Soil Gas Survey

- Shallow soil screening points on a 75’ grid
- Hand-held screening equipment
- Laboratory sampling
- Intended to guide additional assessment
Long Term Monitoring

1” PVC Monitoring Point
2” PVC Vent
Long Term Monitoring
Soil Gas Survey Findings

• Soil gas is limited to 2 distinct areas
  • Eastern area around 6312 Twilight Avenue
  • Western area at Oak Meadows Boulevard, south of Twilight

• Lateral extent of methane is delineated

• Monitoring point data indicate that methane in soil is not migrating to occupied residences
Implications and Next Steps

- Beginning May 4, COGCC engaged the operator of the Coors V 6-14 Ji well to commence their own investigation into the release of gas.
- Anadarko began to investigate the lateral and vertical extent of gas in the soil on May 5.
- Anadarko installed additional PVC monitoring points and vents in the western area.
- Soil, soil gas, and groundwater samples collected.
- Soil Vapor Extraction system implemented to remediate excess methane concentrations.
Ongoing Efforts - SVE

https://en.wikipedia.org/wiki/Soil_vapor_extraction
Ongoing Efforts - SVE
Flowline Riser NTO

- Requires oil and gas operators to take immediate steps to minimize any possibility an improperly abandoned flowline remains connected, or can be re-connected, to an active well or production facility.

- COGCC inspectors and engineers are embedded with operators to witness and inspect actions taken pursuant to the NTO.
Inactive risers

Active riser
Flowline Riser NTO

- For all wells or production facilities within 1,000’ of an occupied building, operators must:
  - By May 30, re-inspect all existing flowlines and identify the wellhead connection and the corresponding production facility connection; document these locations and report to COGCC.
  - By June 30, test all flowlines to ensure they have mechanical integrity and document testing.
Flowline Riser NTO

- Regardless of distance between a well or production facility and an occupied building, operators must:
  - By May 30, mark any existing flowline riser not in active use with fluorescent paint; remove all operating valves (or lock-out/tag-out); and cap riser until it can be cut-off below grade and sealed pursuant to Rule 1103.
  - By June 30, cut-off below grade all risers not in active use and seal the ends.
  - An operator may return an unused riser to active use if a successful pressure test is performed and the riser is locked-out / tagged-out pending return to service.
Unused line marked for abandonment
With lock-out & tag-out
Pressure tested line with Lock-out & Tag-out for future use