



## Fwd: Castle Springs U Pad Form 19

**Cole Kilstrom** <ckilstrom@anteroresources.com>

Mon, Dec 3, 2012 at 5:31 PM

To: "Alex.Fischer@state.co.us" <Alex.Fischer@state.co.us>

Cc: OGCC EnviroScan <ogcc.enviroscan@state.co.us>, Cole Kilstrom <ckilstrom@anteroresources.com>, Jerry Alberts <jalberts@anteroresources.com>, Randy Klobberdanz <rklobberdanz@anteroresources.com>, Jon Black <jblack@anteroresources.com>, "mmumby@hrlcomp.com" <mmumby@hrlcomp.com>

Alex,

The requested information on the Castle Springs U Pad November 18, 2012 spill is presented below.

### 1. *Date surface owner was notified:*

Antero notified the Vanessa Bull of the Bureau of Land Management (surface owner) on December 3, 2012. A Form NTL3A was also submitted to the BLM on December 3, 2012 documenting the spill.

### 2. *More clear explanation of how the extent was determined:*

A Dexil PetroFlag unit was utilized to get field TPH readings to determine the area of impact. The unit only reads TPH and the readings of the impacted area were greater than 2,000 ppm. The impacted area was also visually evident. This impacted area was recorded using a Trimble GPS unit and subsequently mapped on an aerial photo provided on the submitted Form 19.

### 3. **Please clarify the volume of oil spilled and recovered and how was this determined:**

Two vacuum trucks were immediately sent to the site to recover any free standing liquids. Records indicate that approximately 3 bbls, and 2.5 bbls of liquids were recovered by the two vacuum trucks. It was estimated visually that the remaining liquids totaled about 1.5 bbls; 7 total bbls spilled, 5.5 bbls recovered. It was determined that of the 7 bbls of produced water spilled the amount of oil spilled was 0.006 bbls (0.25 gallons) and the amount of oil recovered was 0.004 bbls (0.18 gallons). This calculation is based on Antero's past produced water TVH & TPH concentrations, the specific gravity of condensate, and condensate density. The equation is presented below.

BBL Oil released = (**barrels spilled**)x (42 gal/barrel)x(3.785 l/gal)x (conc. mg/l)x(0.001 g/mg)x(0.002205 lbs/g)/ (6.32 lbs/gal)(42 gal/bbl)

**4. Describe the vertical extent of impact:**

Remediation (excavation) activities commenced on December 1, 2012. The vertical extent of impact observed during excavation is estimated at 6 – 18 inches; 6 inches around the perimeter of the spill and 18 inches around the point of origin.

**5. Approximately how long was the valve left open?**

Approximately 30 minutes of overtopping due to failure of Standard Operating Procedures.

**6. Any potential receptors that may be impacted from the release?**

No, the release was contained within the steel containment structure. Depth to water is over 50 ft in this area. There are no streams within 100ft of the pad.

The majority of the impacted area was remediated this past Friday December 1, 2012. Additional excavation will occur tomorrow and the impacted soil will be disposed at a properly permitted facility. Confirmation samples will be collected and the analytical results will be sent to the COGCC. If you need any additional information at this time please feel free to contact me.

Thanks,

Cole Kilstrom

**Antero Resources**

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**From:** Fischer, Alex [mailto:[alex.fischer@state.co.us](mailto:alex.fischer@state.co.us)]

**Sent:** Thursday, November 29, 2012 2:17 PM

**To:** OGCC EnviroScan; Cole Kilstrom; Jerry Alberts; Randy Klobberdanz; Jon Black; [mmumby@hrlcomp.com](mailto:mmumby@hrlcomp.com)

**Subject:** Fwd: Castle Springs U Pad Form 19

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