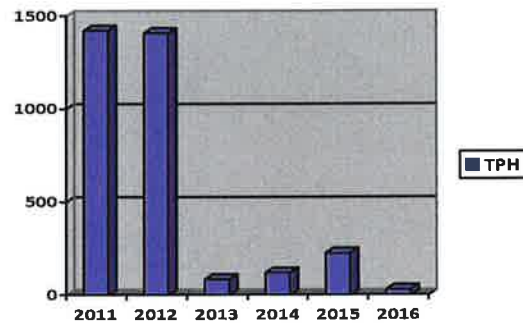
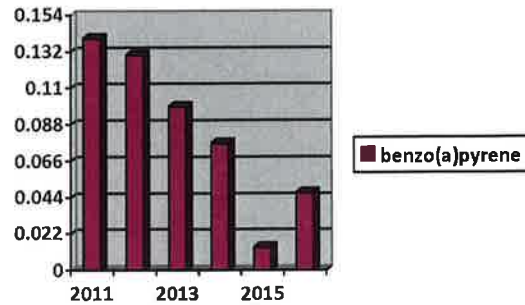


# LINN Energy

Linn Operating, Inc.  
Piceance Asset  
Parachute, Colorado  
May 17, 2017

## J13 697 Landfarming Plan – Facility ID #443305

- History
  - Spoil material that is being treated on site by land farming is from drill cuttings and from spoils that were uncovered during the interim reclamation of the pad in 2012.
    - During site reclamation on September 20, 2012, approximately 6,500 cubic yards of material that appeared to be from drilling or completions operations pit spoils were uncovered.
    - This newly discovered material was segregated from the material that was being land farmed (approx. 3,149 CY) and stacked on the pad site adjacent to the wellheads.
    - To properly treat (land farm) this material, it was desirable to spread out in 18" in depth to allow as much contact with sunshine and atmosphere while being treated with fertilizer high in Nitrogen and occasionally turned during land farming operations.
    - Since there was not enough room to spread this material out and landfarm it on the J13 697 wellpad, Linn Operating, Inc. sought and received permission in 2014 from Chevron and Caerus to transport and treat approximately 9,136 cubic yards of this material on the I11 697 pad on Caerus/Linn estate.
- Current Status
  - Approximately 513 cubic yards of spoil material remained on the J13 697 wellpad and is being treated by land farming. Lab results from samples taken in 2011 initially reported failure of TPH at high level of 1420 and benzo(a)pyrene at high level of 0.14. Samples taken periodically from 2011 report TPH achieved COGCC Table 910-1 in 2013 at 85. The well pad underwent interim reclamation in 2014 with allowance for the continued landfarming of approximately 513 cubic yards
  - In 2017, the 513 cubic yards of material was spread out even more to an average depth of approximately 8". Per Dave Nicholson's analysis of the pre-treatment lab report, 100 lbs. of Nitrogen fertilizer and Fulvic acid will be added per each treatment. As of this date, the landfarmed spoils have been tilled two times without the addition of an amendments, pending Dave's recommendations. Amendments will be added beginning with the next tilling.



- Treatment - 2017
  - Spoil will be turned over by a Kubota farm tractor 8 to 10 times (depending on weather and snow conditions) during the warm months in 2017. The soil will be turned over with the frequency established in the plan as a minimum or with a higher frequency if possible. The soil has been spread out to increase exposure to the atmosphere and sunlight as much as possible on the production pad.
  - Pre-treatment samples taken in early spring will determine the amount of amendments that will be added to the spoil based on an analysis of nutrients present in the spoils.
  - Amendments
    - Based on analysis, nitrogen fertilizer and fulvic acid will be added during each tilling operation to address the benzo(a)pyrene.
- Samples and lab tests
  - Phase I - Composite sample will be taken from 8 locations on the spoil pile in early summer and analyzed.
    - If composite sample passes, discrete samples will be taken to confirm the composite samples.
      - If discrete samples pass, spoil will be buried per COGCC rules.
      - If discrete samples fail, landfarming will continue.
    - If composite sample fails, landfarming will continue.
  - Phase II - Composite sample will be taken from 8 locations on the spoil pile in late fall and analyzed.
    - Procedure will be the same as Phase I
- Continuation
  - Process may continue into 2018 until spoil passes COGCC Table 910-1, specifically benzo(a)pyrene.