



HOBBS OCD

Proposal to Satisfy Ordering Paragraph (2)(f) of R-13507-D

MAR 28 2018

Lucid Delaware LLC Red Hills AGI#1

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**Overview and Background**

When the Red Hills well was originally conceived, it was believed that inlet concentrations of CO<sub>2</sub> and H<sub>2</sub>S would be such that the TAG stream would be generally 95/5 mix of CO<sub>2</sub>/H<sub>2</sub>S with a treated acid gas (TAG) volume of up to 13MMSCFD. Therefore, a condition requiring the operator to report H<sub>2</sub>S concentrations in TAG of >5% to be reported to OCD was included in R-13507-D. Currently as the well is getting ready to be put into service over 5 years since it was originally anticipated to be in service by Lucid Delaware LLC (Lucid) which purchased the Red Hills Plant from Agave Energy, the inlet gas concentrations and volumes which will actually be encountered will result in a mix of CO<sub>2</sub>/H<sub>2</sub>S of approximately 85/15 and a drastically lower TAG volume of approximately 3 MMSCFD. For this reason, Lucid would request that the NMOCD administratively approve this proposed approach to satisfy the requirements of paragraph (2)(f) of R-13507-D.

**Current Projected Inlet Gas Concentrations and Volumes**

Since Lucid has not yet commissioned the sour gas process train/plant at Red Hills, the current inlet gas concentrations do not contain H<sub>2</sub>S. Current inlet gas concentrations are projected to be as follows:

	Total %
Carbon Dioxide	3.00
Hydrogen Sulfide	0.55
Nitrogen	2.52
Methane	72.84
Ethane	11.19
Propane	5.92
i-Butane	0.75
n-Butane	1.83
i-Pentane	0.45
n-Pentane	0.47
Hexane	0.29
Heptane	0.14

Based on these projected Inlet Gas Concentrations at the ultimate anticipated Inlet Gas Volume of 60MMSCFD the TAG concentrations and volumes have been calculated and are included in the following section.

### **Current Projected TAG Concentrations and Volumes**

The TAG stream based on the projected inlet gas concentrations shown in the section above and at the maximum anticipated rate of 60MMSCFD will result in a volume of approximately 2.15 MMSCFD. However, while the H<sub>2</sub>S concentrations are not anticipated to vary significantly, an increase in the CO<sub>2</sub> concentration will increase the TAG volume and correspondingly decrease the H<sub>2</sub>S concentrations conserving the same mass of H<sub>2</sub>S. The projected TAG composition is as follows:

	% of Total
Carbon Dioxide	83.70
Hydrogen Sulfide	15.36
Other (C1-C6)	0.94

### **Proposed Inlet Gas Concentration Verification Program**

Following discussions with NMOCD technical and legal staff, Lucid proposes to sample the inlet gas concentrations and volumes at two times per month for a period of two months (4 total samples) and calculate corresponding TAG concentrations and volumes. A brief letter report will be provided to NMOCD within 30 days following the two month test period which transmits the following:

1. Inlet gas concentrations and volumes from each of the 4 sampling events
2. Calculated TAG concentrations and volumes for each of the 4 sampling events
3. Anticipated range of H<sub>2</sub>S concentrations in TAG under normal operating conditions.