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west virginia department of environmental protection

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Division of Air Quality  
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Jim Justice, Governor  
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**MEMORANDUM**

**To:** File  
**From:** William T. Rothwell II  
**Date:** December 19, 2017  
**Subject:** Tug Hill Operating, LLC - Hendrickson Pad - Marshall County, WV  
**ID #:** 051-00253  
**APP #:** PD17-091

**WELL PAD INFORMATION:**

The above subject well site includes a 670 hp compressor engine (Caterpillar 3308LE) which was manufactured on October 23, 2007, two 400 bbl produced fluids tanks, and five wells. There are no flares, condensate tanks or condensate truck loading associated with this facility and source aggregation to determine major source and PSD is not applicable to this site due to the fact that the subject well pad is not considered to be on contiguous or adjacent to other Tug Hill Operating properties in the area.

The applicant is not subject to 45CSR6, 45CSR10, 45CSR13, 40CFR63 Subpart ZZZZ, 40CFR60 Subpart JJJJ, 40CFR60 Subpart OOOO, 40CFR60 Subpart Kb, 45CSR14, 45CSR19, or 45CSR30.

The uncontrolled emissions were calculated by the applicant using ProMax 4.0 and EPA AP-42 Emission Factors and were reviewed by the writer for accuracy. The emissions from the produced water emissions (water flash, working and breathing emissions), produced water truck loading, and compressor engine combined are as follows:

<u>Pollutant</u>	<u>LB/HR</u>	<u>TPY</u>
PM	0.08	0.35
PM <sub>10</sub>	0.08	0.35
VOCs	0.67	2.94
CO	0.49	2.12
NOx	3.25	14.23
HAPs	0.19	0.82
TAPs (Formaldehyde)	0.06	0.26

**RECOMMENDATION:**

The emission rates of regulated pollutants are below the emission limits of six (6) lb/hr and ten (10) TPY; 144 pounds per calendar day; 2 lb/hr or 5 TPY of HAPs set forth set forth in 45CSR13. The well site will not trigger a substantive requirement of any State or Federal air quality regulation. Therefore, a permit is not required by this Division for the operation of the above mentioned well site.



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William T. Rothwell II, P.E.  
Engineer

12/19/2017

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Date