



STATE OF  
COLORADO

Andrews - DNR, Doug <doug.andrews@state.co.us>

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## EXT: Saskatchewan Pad Doc #401288863

5 messages

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**Jeffrey Annable** <jannable@ascentgeomatics.com>  
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>  
Cc: Ann Feldman <afeldman@ascentgeomatics.com>

Wed, Jun 28, 2017 at 8:17 AM

Hey Doug,

Here is a revised list of BMPs, I have tried to organize them by changes and additions:

### Planning

#### Addition:

Multi-Well Pads are located in a manner that allows for resource extraction while maintaining the highest distances possible from the offsetting residential areas and complies with the wishes of the surface owner.

604.c.(2)J.i Blowout Prevention Equipment ("BOPE"): A double ram and annular preventer will be used during drilling. Stabbing valves shall be installed in the event of reverse circulation and shall be prior tested with low and high pressure fluid.

604.c.(2)N. Control of fire hazards: All material that is considered a fire hazard shall be a minimum of 25' from the wellhead tanks or separators. Electrical equipment shall comply with API IRP 500 and will comply with the current national electrical code.

### General Housekeeping

#### Addition:

Visual Impacts: Equipment, regardless of construction date, which are observable from any public highway shall be painted with uniform, non-contrasting, non-reflective color tones (similar to the Munsell Soil Color Coding System), and with colors matched to, but slightly darker than, the surrounding landscape.

### Material Handling and Spill Prevention

#### Replacement:

Leak Detention Plan: Operator will monitor production facilities weekly at a minimum to a maximum of daily to identify fluid leaks, including, but not limited to, visually inspecting all wellheads, tanks and fittings. Additionally annual SPCC inspections will be conducted and documented.

Control of fire hazards: All material that is considered a fire hazard shall be a minimum of 25' from the wellhead tanks or separators. Electrical equipment shall comply with API IRP 500 and will comply with the current national electrical code. Operator shall comply with state and federal laws, rules and regulations governing the presence of any petroleum products, toxic or hazardous chemicals or wastes on the Subject lands.

Annual flowline testing will also occur according to COGCC rules 1101 and 1102. Inspection and record retention of flowline testing will be in accordance per COGCC regulation. All records will be made available to the COGCC upon to request.

### Odor Mitigation

#### Replacement:

Rule 805: Oil & gas facilities and equipment shall be operated in such a manner that odors and dust do not constitute a nuisance or hazard to public welfare. Sealed tanks with pressure relief valves and emission controls will be utilized for the production phase.

### Noise Mitigation

#### Replacement:

Baseline noise monitoring and testing will be conducted prior to the commencement of construction. Sound mitigation measures such as sound walls or hay bales will be used based on the results of the study to meet or exceed COGCC noise requirements. During completion activities, onsite equipment shall be positioned to take full advantage of the sound mitigation measures.

### Construction

#### Addition:

Enerplus will install appropriate fencing to restrict access by any unauthorized persons. This fencing may vary depending on site-specific situations, such as reasonable security, local government or surface owner concerns.

604.c.(2).Q. All guy line anchors left buried for future use shall be identified by a marker of bright color not less than four (4) feet in height and not greater than one (1) foot east of the guy line anchor.

### Drilling and Completion Operations

#### Addition:

604.c.(2).I. BOPE testing for drilling operations. Upon initial rig-up and at least once every thirty (30) days during drilling operations thereafter, pressure testing of the casing string and each component of the blowout prevention equipment including flange connections shall be performed to seventy percent (70%) of working pressure or seventy percent (70%) of the internal yield of casing, whichever is less. Pressure testing shall be conducted and the documented results shall be retained by the operator for inspection by the Director for a period of one (1) year. Activation of the pipe rams for function testing shall be conducted on a daily basis when practicable.

604.c.(2).K. Pit level Indicators shall be used for tanks on location.

604.c.(2).O. All loadlines shall be bull plugged or capped.

604.c.(2)B.i. Operator will be utilizing a closed loop system.

### Final Reclamation

#### Addition

604.c.(2)T. Within 90 days subsequent to the time of plugging and abandonment of the entire site, superfluous debris and equipment shall be removed from the site. Identification of plugged and abandoned wells will be identified pursuant to 319.a.(5).

604.c.(2).U. The operator shall identify the location of the wellbore with a permanent monument as specified in Rule 319.a.(5). The operator shall also inscribe or imbed the well number and date of plugging upon the permanent monument.

Let me know if you have any questions or need additional BMPs or modifications.

Thanks,

Jeff Annable

Regulatory Analyst

Ascent Geomatics Solutions<<http://www.ascentgeomatics.com/>> (Formerly PFS)

Office: 303.928.7128

7535 Hilltop Circle

Denver, CO 80221

TBPLS Firm Registration No. 10194000

[ASG\_ColAnDel\_1]<<http://www.ascentgeomatics.com/>>

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#### 5 attachments



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image002.jpg  
2K



image003.png  
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image004.png  
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image005.png  
3K

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**Andrews - DNR, Doug** <doug.andrews@state.co.us>  
To: Jeffrey Annable <jannable@ascentgeomatics.com>  
Cc: Ann Feldman <afeldman@ascentgeomatics.com>

Wed, Jun 28, 2017 at 11:09 AM

Jeff,

Thank you for the additional BMPs. I have added them to this Form 2A and completed my technical review. The following are my comments.

- 1) In the Water Resources section you have indicated the nearest water well is 600 feet from the Oil & Gas Location. However, the Hydrology Map indicates there is a water well 301 feet north and 746 feet southeast. The water well to the north is Permit #1399-AD whose application was denied. This same water well also is shown on the Location Drawing. Was this water well field verified to exist? The next nearest water well I could identify is the second one shown on the Hydrology Map at 746 feet to the southeast. Will you provide explanation as to why you have indicated the nearest water well is 600 feet from the Oil & gas Location?
- 2) In the Drilling Program section you have indicated that oil based muds will be used. However, the Odor mitigation BMP provided does not address odor mitigation associated with the use of oil based muds and subsequent flowback fluids during well completion activities. Please revise the Odor mitigation BMP to address these two common sources of odor complaints.
- 3) As this proposed Oil & Gas Location is within a Buffer Zone, please also provide mitigation measure BMPs that address the following:
  - 604.c.(2)C - Green Completions - Emission Control Systems
  - 604.c.(2)G - Berm Construction
  - 604.c.(2)R - Tank Specifications

Please respond to this correspondence by July 28, 2017. If you have any questions, please contact me. Thank you.

**Doug Andrews**

Oil & Gas Location Assessment Specialist - Northeast Colorado



1120 Lincoln St., Suite 801  
Denver, CO 80203  
[doug.andrews@state.co.us](mailto:doug.andrews@state.co.us)  
303-894-2100 Ext. 5180

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**Jeffrey Annable** <jannable@ascentgeomatics.com>  
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>  
Cc: Ann Feldman <afeldman@ascentgeomatics.com>

Mon, Jul 3, 2017 at 9:03 AM

Hey Doug,

Please see my responses below:

Let me know if you need anything additional.

Thanks,

**Jeff Annable**

Regulatory Analyst

**Ascent Geomatics Solutions** (Formerly PFS)

Office: [303.928.7128](tel:303.928.7128)

7535 Hilltop Circle

Denver, CO 80221

TBPLS Firm Registration No. 10194000

**From:** Andrews - DNR, Doug [<mailto:doug.andrews@state.co.us>]

**Sent:** Wednesday, June 28, 2017 11:09 AM

**To:** Jeffrey Annable

**Cc:** Ann Feldman

**Subject:** Re: EXT: Saskatchewan Pad Doc #401288863

Jeff,

Thank you for the additional BMPs. I have added them to this Form 2A and completed my technical review. The following are my comments.

1) In the Water Resources section you have indicated the nearest water well is 600 feet from the Oil & Gas Location. However, the Hydrology Map indicates there is a water well 301 feet north and 746 feet southeast. The water well to the north is Permit #1399-AD whose application was denied. This same water well also is shown on the Location Drawing. Was this water well field verified to exist? The next nearest water well I could identify is the second one shown on the Hydrology Map at 746 feet to the southeast. Will you provide explanation as to why you have indicated the nearest water well is 600 feet from the Oil & gas Location? **That water well was not field verified, I included it since there was a permit issued back in 1969. You are probably right that it doesn't exist, so I am okay with changing the nearest water well to Permit 360-AD which is 996' from the nearest well and 746' from the edge of DA. The measurements on the hydrology map are measured from the edge of DA and the measurements on the location drawing are from nearest well which is the distance I have been using for all of my permits.**

2) In the Drilling Program section you have indicated that oil based muds will be used. However, the Odor mitigation BMP provided does not address odor mitigation associated with the use of oil based muds and subsequent flowback fluids during well completion activities. Please revise the Odor mitigation BMP to address these two common sources of odor complaints. **Revised Odor Mitigation BMP:**

Rule 805: Oil & gas facilities and equipment shall be operated in such a manner that odors and dust do not constitute a nuisance or hazard to public welfare. In an attempt to lessen odors from the oil based drilling mud, Enerplus will layout the rig with the backyard positioned as far away from occupied dwellings as possible. For this pad in particular, we will make every effort to keep the oil based fluids on the north end of the pad. Sound walls will be installed between the pad and the occupied dwellings which should also lessen the OBM odors. Sealed tanks with pressure relief valves and emission controls will be utilized for the production phase.

3) As this proposed Oil & Gas Location is within a Buffer Zone, please also provide mitigation measure BMPs that address the following:

604.c.(2)C - Green Completions - Emission Control Systems **Revised Emissions BMP:**

Green Completions - Emission Control System. Test separators and associated flow lines and sand traps will be installed on-site to accommodate green completions techniques pursuant to COGCC Rules. In the anticipated absence of a viable gas sales line, the flowback gas shall be thermally oxidized in an emissions control device (ECD), which will be installed and kept in operable condition for at least the first 90-days of production pursuant to CDPHE rules. This ECD shall have an adequate capacity for 1.5 times the largest flowback within a 10 mile radius, will be flanged to route gas to other or permanent oxidizing equipment and shall be provided with the equipment needed to maintain combustions where non-combustible gases are present.

Associated Gas Flaring BMP – Following the last stage of separation associated gas will flow through a liquid knockout drum to remove entrained liquid phases. Following the liquid knockout drum, associated gas will flow to a smokeless combustion device capable of a 98% control efficiency. The combustion device will be equipped with a continuous pilot gas flame and an auto-ignitor. Enerplus will comply with all applicable Colorado – Air Pollution Control Division requirements to ensure adequate design and operation of the control device is maintained.

604.c.(2)G - Berm Construction **Revised Construction BMP:**

Berm Construction - Secondary containment devices will be constructed around crude oil and produced water storage tanks and will enclose an area sufficient to contain and provide secondary containment for one-hundred fifty percent (150%) of the largest single tank. Secondary containment devices will be sufficiently impervious to contain any spilled or released material. All berms and containment devices will be inspected at regular intervals and maintained in good condition. No potential ignition sources will be installed inside the secondary containment area unless the containment area encloses a fired vessel.

604.c.(2)R - Tank Specifications **Revised Construction BMP:**

Tank Specifications - Tank Specifications: Tanks will be designed, constructed and maintained in accordance with NFPA Code 30 (2008 version). Operator will maintain written records verifying proper design, construction, and maintenance, and shall make these records available for inspection by the Director.

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**Andrews - DNR, Doug** <doug.andrews@state.co.us>  
To: Jeffrey Annable <jannable@ascentgeomatics.com>  
Cc: Ann Feldman <afeldman@ascentgeomatics.com>

Mon, Jul 3, 2017 at 9:09 AM

Jeff,

Thank you for the quick response to my comments. Will you also send me a letter certifying Enerplus' compliance with Rule 306.e. If any meetings/consultation were held, please also indicate their outcome in the certification letter. Thanks.

*Doug Andrews*

Oil & Gas Location Assessment Specialist - Northeast Colorado



1120 Lincoln St., Suite 801  
Denver, CO 80203  
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303-894-2100 Ext. 5180

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**Jeffrey Annable** <jannable@ascentgeomatics.com>  
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>  
Cc: Ann Feldman <afeldman@ascentgeomatics.com>

Wed, Jul 5, 2017 at 8:59 AM

Hey Doug,

Attached please find the operator certification letter.

Let me know if you need anything else.

Thanks,

7/5/2017

State.co.us Executive Branch Mail - EXT: Saskatchewan Pad Doc #401288863

**Jeff Annable**

Regulatory Analyst

**Ascent Geomatics Solutions** (Formerly PFS)

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TBPLS Firm Registration No. 10194000

**From:** Andrews - DNR, Doug [mailto:[doug.andrews@state.co.us](mailto:doug.andrews@state.co.us)]

**Sent:** Monday, July 03, 2017 9:09 AM

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**Saskatchewan Pad Rule 306.e. Completeness Certification to Director.pdf**

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