



STATE OF  
COLORADO

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

## Damore 2A Revisions (DOC ID 401801129)

9 messages

**Schindler, Lisa** <Lisa.Schindler@anadarko.com>  
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>  
Cc: "VanShura, Jayson" <Jayson.VanShura@anadarko.com>

Fri, May 3, 2019 at 2:03 PM

Hello Doug:

Thanks very much for your patience while we worked out a facility redesign on the Damore Pad to ensure compliance with COGCC 600-series setback rules.

Attached please find a revised facility drawing, which describes all the temporary and permanent production equipment being proposed on the Damore pad. Accordingly, would you be willing to make the following revisions to our pending 2A application?

- Please remove the previously submitted facility design and exchange it with the attached.
- Please revise cultural distances from the facility equipment as shown below (refers to permanent production equipment):

	DISTANCE FROM NEAREST PRODUCTION FACILITY
BUILDING*	179'
BUILDING UNIT	394'
HIGH OCCUPANCY BUILDING UNIT	5280'
DESIGNATED OUTSIDE ACTIVITY AREA	5280'
PUBLIC ROAD	191'
ABOVE GROUND UTILITY	121'
RAILROAD	910'
PROPERTY LINE	154'
SCHOOL FACILITY	5280'
SCHOOL PROPERTY LINE	5280'
CHILD CARE CENTER	5280'

\*Please note that the distance between the nearest Building and production equipment (179') is measured to the LACT unit, which is not a fired vessel. Tanks and fired vessels are greater than 200' from the nearest Building

- Please add in the following distances from wells to schools (per school setback rules, which were not in place at the time the 2A was submitted):

	DISTANCE FROM WELL
SCHOOL FACILITY	5280'
SCHOOL PROPERTY LINE	5280'
CHILD CARE CENTER	5280'

- We've recently been instructed by John Noto to describe cultural distances from temporary equipment in the Comments section. However, it seemed more practical (due to character limits) to include these distances in an attachment. Can you please review the attached cultural distance document and add it as an attachment labeled 'OTHER'?
- Please add the following equipment (Other Facilities):
  - Two temporary generators
  - Two temporary purge flares
- Additional notes for comments section:
  - If needed, temporary diesel generators would only be needed until overhead power is available. Temporary generators are not expected to be on location for more than 180 days
  - Temporary water tanks would be set to hold produced water during the first stages of production. Temporary tanks would be on location for a maximum of 9-12 months and will be removed incrementally as production curtails and water volumes decrease.
  - If needed, two temporary purge flares may be set alongside temporary water tanks to help control emissions. Purge flares would be removed once temporary tanks are removed.

Please review at your convenience and advise if anything else is needed to complete your 2A review process. The WOGLA has been approved, and I would be glad to provide evidence of the approved WOGLA if needed, although the Director has advised that operators should not email approved WOGLA's to commission staff directly, so I did not attach. Please let me know if this changed and if you would be able to accept and upload the approved WOGLA onto our 2A application.

Thanks and I hope you have a great weekend,

**Lisa Schindler**

Staff Regulatory Analyst

Anadarko Petroleum Corporation

1099 18<sup>th</sup> Street | Suite 1800

Denver, CO 80202

Office – 720-929-3091

Cell – 720-470-4919

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**2 attachments****DAMORE 5-18HZ\_FACILITY\_LAYOUT\_AERIAL\_REV\_20190425.pdf**

2686K

**CULTURAL DISTANCES FOR TEMPORARY EQUIPMENT\_DAMORE PAD.pdf**

335K

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**Schindler, Lisa** <Lisa.Schindler@anadarko.com>  
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>  
Cc: "VanShura, Jayson" <Jayson.VanShura@anadarko.com>

Tue, May 7, 2019 at 10:24 AM

Hi Doug – thanks for the phone call. One thing I forgot to build into our sighting rationale is that the Buildings and Building Units closest to the production facilities on the Damore pad are owned by Anadarko E&P Onshore LLC. These buildings are unoccupied and trigger an Exception Zone designation, however KMG felt that siting facilities closer to the Anadarko-owned, unoccupied buildings was a more conservative option than siting facilities to the east (and closer to the neighborhood) and avoiding the Exception Zone designation.

Per our discussion, I will also follow up with our land team to understand whether we may be able to obtain a 'waiver' (i.e. Letter of Support) from the southern landowner CO 13 LLC that would acknowledge Building Unit owner's support for our proposed Damore wells. I will follow up with you when I know more.

Thanks for your help,

Lisa

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**Schindler, Lisa** <Lisa.Schindler@anadarko.com>  
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>  
Cc: "VanShura, Jayson" <Jayson.VanShura@anadarko.com>

Wed, May 8, 2019 at 3:48 PM

Hi Doug:

Per our conversation this morning, we have revised cultural distances from temporary equipment. I've attached a PDF that outlines the revised distances; would you be willing to upload it to our pending 2A as 'Other'?

The surveyor confirmed the true temp tank distance is 23' to the nearest parcel boundary, and the temp tank width is 9'. Since our distance to the nearest parcel boundary is greater than 18' (i.e. 2x9'), I believe the Prowant facility is in compliance with the tank setback described in Rule 605a.(2). Please let me know if the COGCC disagrees with this approach.

Let me know if you need anything else, or have any additional questions. Thanks for your help!

[Quoted text hidden]

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 **CULTURAL DISTANCES FOR TEMPORARY EQUIPMENT\_DAMORE PAD.pdf**  
333K

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**Andrews - DNR, Doug** <doug.andrews@state.co.us>  
To: "Schindler, Lisa" <Lisa.Schindler@anadarko.com>  
Cc: "VanShura, Jayson" <Jayson.VanShura@anadarko.com>

Fri, May 10, 2019 at 11:04 AM

Lisa,

I have reviewed the DAMORE 5-18HZ PAD location following the updated Facility Layout Drawing and Cultural Distances you have provided and have a few additional comments.

- 1) The Facility Layout Drawing depicts 3 meter buildings and 4 air compressors. Therefore, I would like to add them to the Other Facilities section.
- 2) It appears the proposed PROWANT 4-18HZ wells (Form 2A Doc #401810307) will produce to this location, therefore, I would like to list it as a Related Remote Location.
- 3) KMG has provided a 604.c.(2)G. - Berm Construction BMP that details protecting the Farmers Ditch that runs through this location. While we appreciate KMG providing additional protection of this surface water feature, Rule 604.c.(2)G - Berm Construction speaks to how berms or other secondary containment around a tank battery needs to be constructed. As this is an Exception Zone location, please provide me with a BMP that addresses the berm construction requirements of both Rule 604.c.(2)G. and 604.c.(3)B.
- 4) As this is a Designated Setback Location, please provide required BMPs that address the following COGCC Rules:
  - 803 - Lighting mitigation
  - 604.c.(2)B - Closed Loop Drilling-Pit Restrictions
  - 604.c.(2)C - Green Completions
  - 604.c.(2)F - Leak Detection
  - 604.c.(2)K - Pit level Indicators
- 5) Please provide the required NRCS Soil Map Unit Description attachments for the two NRCS Soil Map Units listed in the Soil section and I will add them to the Form 2A.
- 6) The Farmers Ditch shown on the Location Drawing cuts across the proposed location. How will KMG cross this irrigation ditch to access the PROWANT 4-18HZ Production Facility area as the Access Road Map shows no access to it? Are the owners of this irrigation ditch aware that KMG intends to build a large Oil & Gas Location that will be bisected by their irrigation ditch?
- 7) Now that the Public Comment period has ended, please provide me with a letter certifying compliance with COGCC Rule 306.e. If any meetings/consultations were requested, please also indicate their outcome.

Please respond to this correspondence by June 10, 2019. If you have any questions, please contact me. Thank you.

*Doug Andrews*

Oil & Gas Location Assessment Specialist - Northeast Colorado



**COLORADO**  
Oil & Gas Conservation  
Commission  
Department of Natural Resources

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1120 Lincoln St., Suite 801, Denver, CO 80203  
[doug.andrews@state.co.us](mailto:doug.andrews@state.co.us) | <http://cogcc.state.co.us/>

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**VanShura, Jayson** <Jayson.VanShura@anadarko.com>

Fri, May 10, 2019 at 11:09 AM

To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>, "Schindler, Lisa" <Lisa.Schindler@anadarko.com>

Doug,

Thank you for your commentary and attention to detail. It's been a mess over here trying to figure this all out and get you everything you need. I really appreciate your patience.

**Jayson**

Jayson VanShura  
Regulatory Manager – DJ Basin Permitting  
Anadarko Petroleum Corporation  
Office: 720.929.6814  
Cell: 303.618.4845  
Fax: 720.929.7814  
Email: [jayson.vanshura@anadarko.com](mailto:jayson.vanshura@anadarko.com)

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

**Sent:** Friday, May 10, 2019 11:04 AM

**To:** Schindler, Lisa <[Lisa.Schindler@anadarko.com](mailto:Lisa.Schindler@anadarko.com)>

**Cc:** VanShura, Jayson <[Jayson.VanShura@anadarko.com](mailto:Jayson.VanShura@anadarko.com)>

**Subject:** Re: Damore 2A Revisions (DOC ID 401801129)

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**Schindler, Lisa** <Lisa.Schindler@anadarko.com>

Mon, May 13, 2019 at 7:47 AM

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

Cc: "VanShura, Jayson" <Jayson.VanShura@anadarko.com>

Hi Doug – thanks again for helping us get through these older submissions. I appreciate your thorough review and attention to detail. I will research your findings below and get back to you today.

Hope you had a great weekend,

Lisa

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

**Sent:** Friday, May 10, 2019 11:04 AM

**To:** Schindler, Lisa <Lisa.Schindler@anadarko.com>

**Cc:** VanShura, Jayson <Jayson.VanShura@anadarko.com>

**Subject:** Re: Damore 2A Revisions (DOC ID 401801129)

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Lisa,

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**Schindler, Lisa** <Lisa.Schindler@anadarko.com>  
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>  
Cc: "VanShura, Jayson" <Jayson.VanShura@anadarko.com>

Tue, May 14, 2019 at 8:31 AM

Hi Doug – I'm working to track down answers to your questions, and I'm still waiting on information about the ditch crossing. But I do have some of the information you requested so I want to pass that along as quickly as possible. Please review my responses below in **RED** and let me know if anything else is needed.

Thanks and I will be in touch again shortly,

Lisa

**Lisa Schindler**

**Staff Regulatory Analyst**

**Anadarko Petroleum Corporation**

1099 18<sup>th</sup> Street | Suite 1800

Denver, CO 80202

Office – 720-929-3091

Cell – 720-470-4919

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**From:** Andrews - DNR, Doug <doug.andrews@state.co.us>  
**Sent:** Friday, May 10, 2019 11:04 AM  
**To:** Schindler, Lisa <Lisa.Schindler@anadarko.com>  
**Cc:** VanShura, Jayson <Jayson.VanShura@anadarko.com>  
**Subject:** Re: Damore 2A Revisions (DOC ID 401801129)

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Lisa,

I have reviewed the DAMORE 5-18HZ PAD location following the updated Facility Layout Drawing and Cultural Distances you have provided and have a few additional comments.

1) The Facility Layout Drawing depicts 3 meter buildings and 4 air compressors. Therefore, I would like to add them to the Other Facilities section. **We concur. Thank you for making this revision**

2) It appears the proposed PROWANT 4-18HZ wells (Form 2A Doc #401810307) will produce to this location, therefore, I would like to list it as a Related Remote Location. **We concur. Thank you for making this revision.**

3) KMG has provided a 604.c.(2)G. - Berm Construction BMP that details protecting the Farmers Ditch that runs through this location. While we appreciate KMG providing additional protection of this surface water feature, Rule 604.c.(2)G - Berm Construction speaks to how berms or other secondary containment around a tank battery needs to be constructed. As this is an Exception Zone location, please provide me with a BMP that addresses the berm construction requirements of both Rule 604.c.(2)G. and 604.c.(3)B.

**Please add the following BMPs to our 2A. Let me know if these BMPs do not suffice:**

**Berm Construction: Kerr-McGee will create tertiary containment by construction of a berm or diversion dike, site grading, or other comparable measures sufficient to further protect the Farmers Ditch located between the drill pad and Prowant Production facility, and the unnamed irrigation ditch located 52' south of this proposed oil and gas location.**

**Berm Construction: The temporary produced water storage tanks will be staged on a geosynthetic liner and surrounded by an earthen berm. The berms shall enclose an area sufficient to provide secondary containment for 150% of the volume of the largest single tank, and shall be sufficiently impervious to contain spilled or released material. Berms and the liner shall be inspected at regular intervals and maintained in good condition.**

**Tank Specifications: A geosynthetic liner will be laid under the tanks on this location and a steel containment will be constructed. Storage tanks will be designed, constructed and maintained in accordance with National Fire Protection Association (NFPA) Code 30 (2008**

**version). KMG will maintain written records to verify proper design, construction and maintenance. All records will be available for inspection by the Director.**

4) As this is a Designated Setback Location, please provide required BMPs that address the following COGCC Rules:

803 - Lighting mitigation

**803. Lighting: To the extent practicable, site lighting shall be shielded and directed downward and inward toward operations to avoid glare on public roads and nearby Building Units.**

604.c.(2)B - Closed Loop Drilling-Pit Restrictions

**Closed Loop Drilling System: KMG will use a closed loop or "pitless" system for drilling and fluid management and will not construct a reserve pit.**

604.c.(2)C - Green Completions

**604c.(2).C. Green Completions: Temporary above ground polyethylene water pipelines will deliver water to location operations from larger trunk lines to reduce truck traffic and minimize air pollution. Pipeline infrastructure is in place prior to completions operations to ensure saleable gas, once hydrocarbons are cut, is sent directly to sales without flaring during flowback. Environmental Control Devices or Volatile Organic Compound (VOC) Combustors will be used to control working and breathing vapor losses for oil and water tanks.**

604.c.(2)F - Leak Detection

**Leak Detection Plan: Automation technology will be utilized at this facility. This technology includes the use of fluid level monitoring for the tanks and produced water sumps, high-level shut offs, and electronic sensors to monitor the interstitial space of double-walled produced water sumps. All automation is monitored by Kerr-McGee's Integrated Operations Center (IOC), which is manned 24 hours per day, 7 days per week.**

604.c.(2)K - Pit level Indicators

**Pit Level Indicators: All storage tanks used for active drilling operations (used in lieu of pits) contain pit level monitors with Electronic Drilling Recorders (EDR). KMG uses EDRs with pit level monitor(s) and alarm(s) for production rigs. Basic level gauges are used on tanks utilized for the surface rig.**

5) Please provide the required NRCS Soil Map Unit Description attachments for the two NRCS Soil Map Units listed in the Soil section and I will add them to the Form 2A.

**My apologies that the NRCS descriptions were omitted in error. I have attached them to this email.**

6) The Farmers Ditch shown on the Location Drawing cuts across the proposed location. How will KMG cross this irrigation ditch to access the PROWANT 4-18HZ Production Facility area as the Access Road Map shows no access to it? Are the owners of this irrigation ditch aware that KMG intends to build a large Oil & Gas Location that will be bisected by their irrigation ditch?

**I have requested additional detail about how the ditch crossing will be constructed, and a summary of correspondence with The Farmers Ditch, which is the ditch company. This information will be sent to you ASAP.**

**The access for the Prowant Facility was described in the access road map for the Prowant Well Pad (which has been added as a related facility, thanks to you). Would it be possible to replace the Access Road Map exhibit submitted with the original 2A with the attached, more comprehensive exhibit which shows access for both the Prowant and Damore Well Pads and Facilities? Please let me know if this is acceptable. If this is too cumbersome, I would be glad to request a revised exhibit that shows all access from our survey company.**

7) Now that the Public Comment period has ended, please provide me with a letter certifying compliance with COGCC Rule 306.e. If any meetings/consultations were requested, please also indicate their outcome.

**Letter attached. Thanks Doug!**

Please respond to this correspondence by June 10, 2019. If you have any questions, please contact me. Thank you.

*Doug Andrews*

Oil & Gas Location Assessment Specialist - Northeast Colorado






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### 3 attachments

-  **Damore pad and facility NRCS description.pdf**  
105K
-  **DAMORE and PROWANT\_ACCESS\_MAP\_COMBINED.pdf**  
958K
-  **DAMORE 5-18HZ 306.e and 306.b.(3) CERTIFICATION.pdf**  
79K

---

**Andrews - DNR, Doug** <doug.andrews@state.co.us>  
To: "Schindler, Lisa" <Lisa.Schindler@anadarko.com>  
Cc: "VanShura, Jayson" <Jayson.VanShura@anadarko.com>

Tue, May 14, 2019 at 1:42 PM

Lisa,

I've reviewed your responses to my comments and have a few follow-up questions.

3) KMG has provided a 604.c.(2)G. - Berm Construction BMP that details protecting the Farmers Ditch that runs through this location. While we appreciate KMG providing additional protection of this surface water feature, Rule 604.c.(2)G - Berm Construction speaks to how berms or other secondary containment around a tank battery needs to be constructed. As this is an Exception Zone location, please provide me with a BMP that addresses the berm construction requirements of both Rule 604.c.(2)G. and 604.c.(3)B.

**Please add the following BMPs to our 2A. Let me know if these BMPs do not suffice:**

**Berm Construction: Kerr-McGee will create tertiary containment by construction of a berm or diversion dike, site grading, or other comparable measures sufficient to further protect the Farmers Ditch located between the drill pad and Prowant Production facility, and the unnamed irrigation ditch located 52' south of this proposed oil and gas location.**

**Berm Construction: The temporary produced water storage tanks will be staged on a geosynthetic liner and surrounded by an earthen berm. The berms shall enclose an area sufficient to provide secondary containment for 150% of the volume of the largest single tank, and shall be sufficiently impervious to contain spilled or released material. Berms and the liner shall be inspected at regular intervals and maintained in good condition.**

**Tank Specifications: A geosynthetic liner will be laid under the tanks on this location and a steel containment will be constructed. Storage tanks will be designed, constructed and maintained in accordance with National Fire Protection Association (NFPA) Code 30 (2008 version). KMG will maintain written records to verify proper design, construction and maintenance. All records will be available for inspection by the Director.**

Rule 604.c.(2)G-Berm Construction states "*Berms or other secondary containment devices in Designated Setback Locations shall be constructed around crude oil, condensate, and produced water storage tanks...*" The revised BMP you provide only indicates this will be done for the temporary produced water storage tanks. As there will be permanent storage tanks (2 Condensate and 7 Water) on this location, please revise this BMP to indicate it will apply to both the permanent and temporary tanks on this location.

I will replace the Access Road Map submitted on this Form 2A with the version you have provided.

*Doug Andrews*

Oil & Gas Location Assessment Specialist - Northeast Colorado



**COLORADO**  
Oil & Gas Conservation  
Commission  
Department of Natural Resources

303.894.2100 Ext. 5180  
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**Schindler, Lisa** <Lisa.Schindler@anadarko.com>  
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>  
Cc: "VanShura, Jayson" <Jayson.VanShura@anadarko.com>

Wed, May 15, 2019 at 2:17 PM

Hi Doug – my apologies for the lack of clarity. The BMP below would apply to our permanent tank facilities:

*Tank Specifications: A geosynthetic liner will be laid under the tanks on this location and a steel containment will be constructed. Storage tanks will be designed, constructed and maintained in accordance with National Fire Protection Association (NFPA) Code 30 (2008 version). KMG will maintain written records to verify proper design, construction and maintenance. All records will be available for inspection by the Director.*

However as I read this BMP, I don't believe it addresses all the items required under 604.c(2)G, such as secondary containment containment. Please add this BMP as well:

*604c.(2).G. Berm Construction: A geosynthetic liner will be laid under the tanks on this location and a metal containment will be constructed. Berms or other secondary containment devices will be constructed around crude oil, condensate, and produced water storage tanks and shall enclose an area sufficient to contain and provide secondary containment for 150% of the largest single tank. Berms and other secondary containment devices shall be inspected at scheduled intervals and maintained in good condition*

Does this give you everything you need for Rule 604.c(2)G? Please let me know if you need anything else, and thanks for your help!

**From:** Andrews - DNR, Doug <doug.andrews@state.co.us>  
**Sent:** Tuesday, May 14, 2019 1:43 PM  
**To:** Schindler, Lisa <Lisa.Schindler@anadarko.com>  
**Cc:** VanShura, Jayson <Jayson.VanShura@anadarko.com>  
**Subject:** Re: Damore 2A Revisions (DOC ID 401801129)

Lisa,

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please revise this BMP to indicate it will apply to both the permanent and temporary tanks on this location.

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