

State of Colorado
Oil and Gas Conservation Commission



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Document 2315751
Received 10/28/2015
REM 9318

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

OGCC Employee:

Spill Complaint
 Inspection NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): _____

OGCC Operator Number: <u>10531</u>	Contact Name and Telephone: <u>Scott Ghan</u>
Name of Operator: <u>Vanguard Operating, LLC</u>	No: <u>970.876.1959</u>
Address: <u>112 Red Feather Trail</u>	Fax: <u>970.876.0981</u>
City: <u>Silt</u> State: <u>CO</u> Zip: <u>81652</u>	

API Number: <u>NA</u>	County: <u>Garfield</u>
Facility Name: <u>MDP#6 / [Facility Name/No.]</u>	Facility Number: <u>430352 [Facility ID]</u>
Well Name: <u>GGU Miller Fed (MDP Pad #6)33A-32-691 [Location Name/No.]</u>	Well Number: <u>416979 [Location ID]</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SESW, Sec. 32, T6S, R91W</u>	Latitude: <u>39.479852</u> Longitude: <u>-107.578438</u>

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): no impacts identified.

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): range land

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Potts loam, 3 to 6 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): There is one surface water feature (East Gulch) and no water wells within 1/4 mile of the location.

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input type="checkbox"/> Soils	<u>If impacts are identified, a Form 19 detailing findings will be submitted.</u>	<u>Representative soil samples will be collected for laboratory analysis.</u>
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

See attached.

Describe how source is to be removed:

See attached.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

See attached.



Tracking Number: _____
Name of Operator: VANGUARD
OGCC Operator No: _____
Received Date: _____
Well Name & No: PT Facility # 430352
Facility Name & No: MDP # 6 / Location # 416979

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REMEDIATION WORKPLAN (Cont.)

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

See attached.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

See attached.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? Y N If yes, describe:

See attached.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

See attached.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: NA Date Site Investigation Completed: NA Date Remediation Plan Submitted: 10/9/2015
Remediation Start Date: NA Anticipated Completion Date: NA Actual Completion Date: NA

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Scott Ghan Signed: sghan@vnrllc.com

Title: Senior EH&S Specialist Date: 10/9/2015

OGCC Approved: Title: EPS NW Region Date: 10/28/2015

Digitally signed by sghan@vnrllc.com
DN: cn=sghan@vnrllc.com
Date: 2015.10.09 12:56:03 -0500

MDP#6 Pit Closure (Form 27)
(Facility ID – 430352)
(Location ID – 416979)

This Form 27 (Site Investigation and Remediation Workplan) was prepared for the purpose of generating a remediation project number in support of pit (Facility ID – 430352) closure efforts on the GGU Miler Fed (MDP Pad #6) 33A-32-691 well pad (Location ID - 416979) in the Vanguard Operating, LLC (Vanguard) Mamm Creek area of operation in Garfield County.

This document includes a topographic location map illustrating the site location (Figure 1). Project-specific information related to remediation activities, if required, will be provided in the Form 19 (Spill / Release Report) and/or Form 4 (Notification of Completion).

TECHNICAL CONDITIONS

Is location within a sensitive area (according to Rule 901e)?

The site is located in a sensitive area based on distance to surface water. East Gulch is approximately 390 feet northwest of the pit location.

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

The pit was constructed and operated by a previous operator. Vanguard took over operations on December 1, 2014. The following activities have been or will be carried out in support of pit closure activities conducted in support of this project:

- 905.b(2) – All E&P fluids were removed from the pit by January, 2013, and the pit has been out of service since. The fluids were disposed of in one of the previous operator's injection wells.
- 905.b(3) – To date, the pit liner has not been removed. Liner removal activities are scheduled for the second quarter of 2016. The liner will be cleaned, removed, bailed and sent by a subcontractor to a recycling facility with the appropriate receipts and manifests.
- 905.b(4) – Representative grab samples will be collected from the pit bottom and will be analyzed for compliance with COGCC Table 910-1 concentration levels.
- 905.c – If constituents of concern are detected in excess of Table 910-1 concentration levels and above background concentrations, a Form 19 (Spill/Release Report) will be submitted.

Describe how source is to be removed:

Vanguard plans to initiate the removal of the liner/leak detection systems and sample the base of the pit during the second quarter of 2016. If soil impacts exceed Table 910-1 concentration levels, impacted material will be evaluated and based on extent would be remediated in-situ or

MDP#6 Pit Closure (Form 27)
(Facility ID – 430352)
(Location ID – 416979)

removed using heavy equipment for onsite remediation or offsite disposal at an approved disposal facility documented with appropriate receipts and manifesting. Remediation will be demonstrated through sample collection and laboratory analysis. Any remediation or disposition of remediated material will be provided in a Form 4 (Report of Work Completed or Notification of Completion).

Describe how remediation of existing impact is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

If needed, the selected remediation approach will vary based on economic and technical feasibility. In-situ remediation is the preferred approach for most pit closure projects. However, in some situations petroleum impacted material would be removed and remediated onsite or transported offsite to an approved disposal facility. Remediation activities will be verified with sample collection and laboratory analysis conducted in accordance with COGCC Rule 910. The selected remediation approach and final disposition of material, if required will be provided in a Form 4 (Report of Work Completed or Notification of Completion).

If groundwater has been impacted, described proposed monitoring plan(# of wells or sample points, sampling schedule, analytical methods, etc.):

In the event that impacts to groundwater are identified, the vertical and lateral extent would be determined by a third party contractor and an appropriate in-situ remediation and monitoring plan would be prepared and submitted to the COGCC.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Upon COGCC authorization of this remediation plan and laboratory sample confirmation, Vanguard will schedule the backfill of the former pit. The backfilling, surface grading and seeding will likely be completed in the second quarter of 2016 due to winter weather conditions, BLM timing stipulations, frozen or saturated soils, and the timing of seasonal moisture to promote successful reclamation of the disturbed area. The former pit location will be recontoured and seeded. Because the pit is part of an active well pad and ongoing production activities, the reclaimed area will be managed under Vanguard's surface management programs such as stormwater and weed management.

MDP#6 Pit Closure (Form 27)
(Facility ID – 430352)
(Location ID – 416979)

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing. Is further site investigation required? If yes, describe:

All analytical data collected in support of this remediation project will be provided to the COGCC in a Form 19 (Spill / Release Report) and/or in the Form 4 (Notification of Completion). A site diagram showing the location of collected samples will also be provided.

Final disposition of E&P waste (land treated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Water was disposed of in one or more of the following injection facilities - GGU Rodreick (Facility 159176); Specialty 13A-28-692 SWD (Facility 159212); Circle B Land 33A-35-692 (Facility 159277); or Scott 41D-36-692 SWD (Facility 159159). The liner will be cleaned, bailed and sent to the Holcim/Geocycle recycling facility in Morgan, UT, or All Recycling Solutions in Denver, CO. Waste manifests and certificates of destruction will be generated to verify appropriate final disposition of the liners. Final disposition of any other E&P waste would be detailed in the Form 4 (Notification of Completion) submitted following successful completion of pit closure activities.

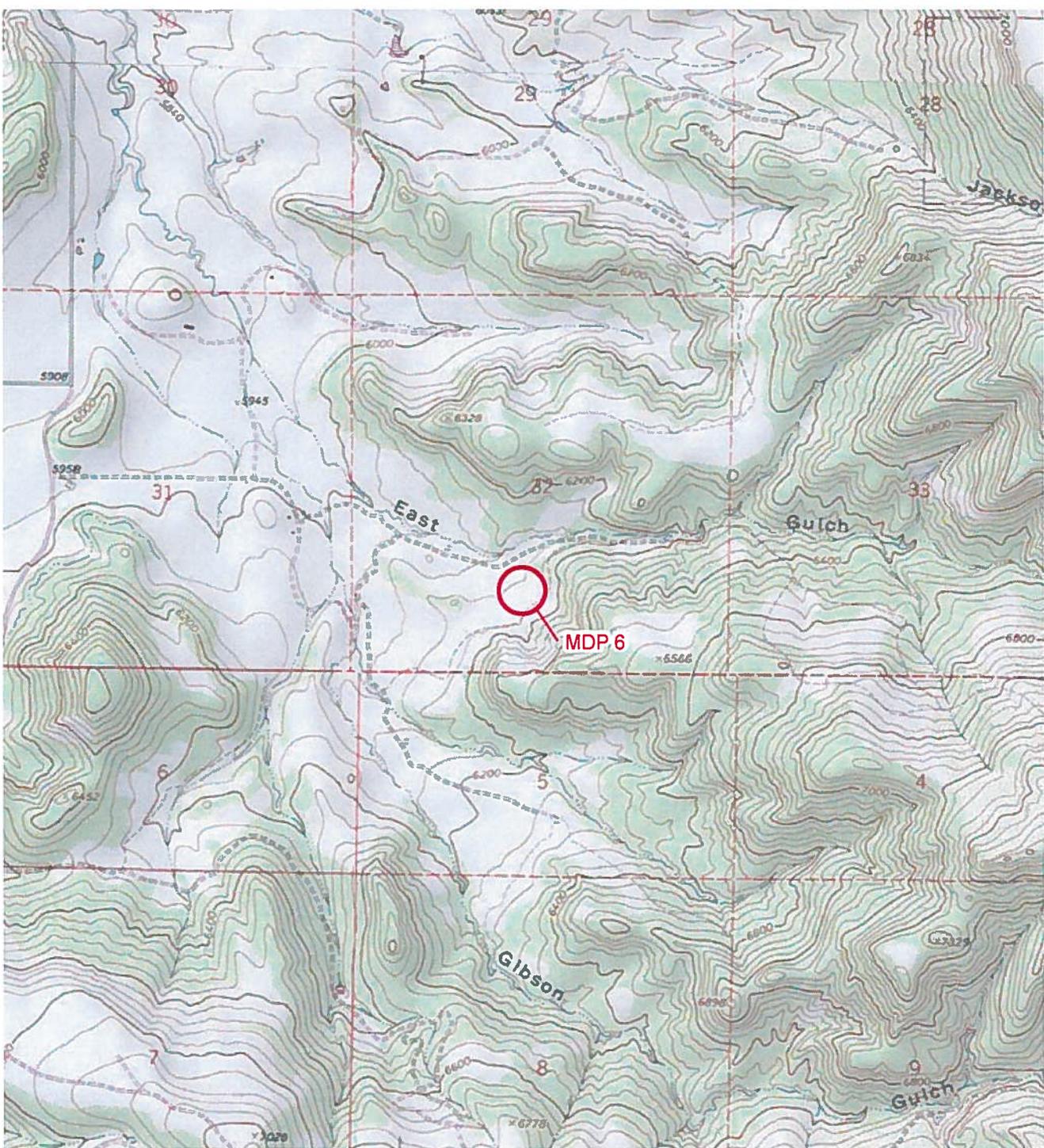


IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION

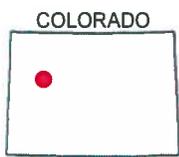
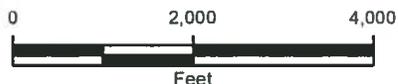


FIGURE 1
SITE LOCATION MAP
MDP 6
GARFIELD COUNTY, COLORADO



VANGUARD OPERATING, LLC