

FORM
27
Rev 6/99

State of Colorado
Oil and Gas Conservation Commission

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received 09/09/2015
Project 9297
Remediation 200437747
Investigation Plan

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): Water Well Investigation

OGCC Operator Number: <u>47120</u>	Contact Name and Telephone: <u>Erik Mickelson</u>
Name of Operator: <u>Kerr-McGee Oil & Gas Onshore LP</u>	No: <u>720-929-4306</u>
Address: <u>1099 18th St, Suite 1800</u>	Fax: <u>720-929-7726</u>
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u>	

API Number: <u>N/A</u>	County: <u>Weld</u>
Facility Name: <u>N/A</u>	Facility Number: <u>752520</u>
Well Name: <u>N/A</u>	Well Number: <u>DWR Permit #15631</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWSE 7-T3N-R66W</u>	Latitude: <u>515693</u> Longitude: <u>4453791</u>

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): methane; liquid hydrocarbons

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation. GW <20 ft.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Irrigated/dry land farming/stock

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: N/A

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Water Wells: DWR Permit #'s 16983, 17951, 198105, 36911, 5430-F-R, 5640-F-R, 6101-F, 9437-F, 27837, 15631, 1613-R, 13212-R & 5618-F Surface Water: Platte Valley Canal & Platteville Ditch

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>N/A</u>	
<input type="checkbox"/> Vegetation	<u>N/A</u>	
<input checked="" type="checkbox"/> Groundwater	<u>TBD</u>	<u>Water samples collected from well.</u>
<input type="checkbox"/> Surface Water	<u>N/A</u>	

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):
 A temporary water system was installed in 2013 to provide potable water for the Henrickson residence. The water well was disconnected from the residence at that time. An assessment is currently underway to determine which, if any, producing gas well in the area or shallow stray gas source is the source of the dissolved hydrocarbon in the water well. Even though no source has yet been identified, in January of 2014 Kerr-McGee provided a domestic water tap to the Henrickson residence, as a permanent solution.

Describe how source is to be removed:
 Any production well identified as a potential source of the impact to the subject water well will be remediated. Once the source has been eliminated, rapid natural attenuation of the impact is expected.

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.:
 Once the source has been eliminated, it is anticipated that the impacts will attenuate rapidly.



Tracking Number: Name of Operator: OGCC Operator No: Received Date: Well Name & No: Facility Name & No:

REMEDIATION WORKPLAN (Cont.)

OGCC Employee:

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

The subject water well (permit #15631) has been on a quarterly sampling schedule since the 3rd quarter of 2013. No samples were collected the 1st and 2nd quarters of 2014 due to surface damages to the well casing, and a failure of the well pump. Starting on May 12, 2015 the subject water well will be sampled on a bimonthly basis. Once the source of the impacts has been identified and remediated, the subject water well will be sampled monthly until a decline in the impacts to the well can be demonstrated. All water samples will be analyzed for the analytes noted in COGCC Rule 318A.f.(6). (and 318A.f.(8), as appropriate) at a minimum. Notification requirements in COGCC Rule 318A.f.(8) & (9). will be followed, as appropriate. Analytical tables associated with each of the sampling events of the subject water well are presented in Attachment A.

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.

N/A

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? [X] Y [] N If yes, describe:

As mentioned above, the subject water well (permit #15631) will continue to be sampled on an on-going basis. Kerr-McGee is currently investigating their production wells within a 3/4 mi radius of the subject water well. Any production well identified as a potential source will be sampled (production gas, and if present, any gas/liquids in the bradenhead) for comparison to the impacts in the subject water well. Any production well with identified integrity issues will be properly remediated.

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

Purge water associated with the sampling events is being contained and disposed of at Waste Management's Conservation Services, Inc. disposal facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: March 27, 2013 Date Site Investigation Completed: Active Date Remediation Plan Submitted: Remediation Start Date: Mid 2013 Anticipated Completion Date: TBD Actual Completion Date:

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

Print Name: Erik Mickelson Signed: [Signature] Title: Sr. HSE Representative Date: 9/9/15

OGCC Approved: Title: Date:

Provide data from all sampling of and analysis of gases or liquids from oil and gas wells collected as part of this investigation to COGCC in PDF and COGCC EDD formats within three months from sample collection.

Provide status/progress update on investigation within 90 days of approval of this Form 27. Update can be written or done as oral presentation to appropriate COGCC staff.