

State of Colorado
Oil and Gas Conservation Commission

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FOR OGCC USE ONLY

REM 9771
Document 2526619
Date 06/28/2016

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.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☒ Other (describe): Pit closure

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: <u>62340</u>		Contact Name and Telephone:
Name of Operator: <u>National Fuel Corporation</u>		<u>Andrew Busch</u>
Address: <u>PO Box 4892, Parker Co. 80134</u>		No: <u>970-858-7490</u>
City: <u>Greenwood Village</u>	State: <u>Co</u> Zip: <u>80111</u>	Fax: <u>970-858-7490</u>
API Number: <u>05-077-05129</u>		County: <u>Mesa</u>
Facility Name: <u>Great Basins - Federal #2 Pit</u>		Facility Number: <u>119434</u>
Well Name: <u>Great Basins - Federal #2 Pit</u>		Well Number: <u>Federal #2</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWSE, Sec 29 - T8S - R100W</u> Latitude: <u>39.324173</u> Longitude: <u>-108.568891</u>		

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced water/blow down fluids.

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.): Rangeland

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

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Little Salt Wash

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>Yet to be determined</u>	<u>Will be determined as part of this investigation.</u>
<input checked="" type="checkbox"/> Vegetation	<u>Yet to be determined</u>	<u>Will be determined as part of this investigation.</u>
<input checked="" type="checkbox"/> Groundwater	<u>Yet to be determined</u>	<u>Will be determined as part of this investigation.</u>
<input checked="" type="checkbox"/> Surface Water	<u>Yet to be determined</u>	<u>Will be determined as part of this investigation.</u>

REMEDIALTION WORKPLAN

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

Wellbores were Plugged and Abandoned 7/6/2012. Soil from production pit will be tested in accordance with COGCC series 900 regulations. Currently, there is no surface expression of the pit present on the well pad. COGCC records indicate there was only one pit on this location which served both the Great Basins Fed #1 and #2.

Describe how source is to be removed:

If soil contamination is present, impacted soils will be excavated and temporarily stockpiled on location and characterized for disposal.

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.:

Soils will be removed and subjected to land treatment on site. Following land treatment, soil sampling will be conducted to determine compliance with COGCC Table 910-1. Remediated soils will be returned to the excavation or stockpiled against the cut slope and covered in place.



REMEDATION WORKPLAN (Cont.)

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

OGCC Employee: _____

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

It is not anticipated that groundwater will be impacted at this location. If it is determined through field investigation that groundwater has been impacted, a proposed monitoring/remediation plan will be submitted as an update to this Form 27.

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.

Pending analytical results and COGCC approval the pit will be backfilled in accordance with the reclamation guidelines specified in the APD.

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:

Further investigation is pending access to the site with equipment to excavate and sample. Results will be included as an update to this Form 27.

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

The remediation or disposal of any potentially impacted soils will be determined based on laboratory analytical results and will be reported as an update to this Form 27.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 06/09/2016	Date Site Investigation Completed: 06/09/2016	Date Remediation Plan Submitted: 06/28/2016
Remediation Start Date: 07/18/2016	Anticipated Completion Date: 07/22/2016	Actual Completion Date: TBD

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

Print Name: Andrew Busch

Signed: Andrew Busch

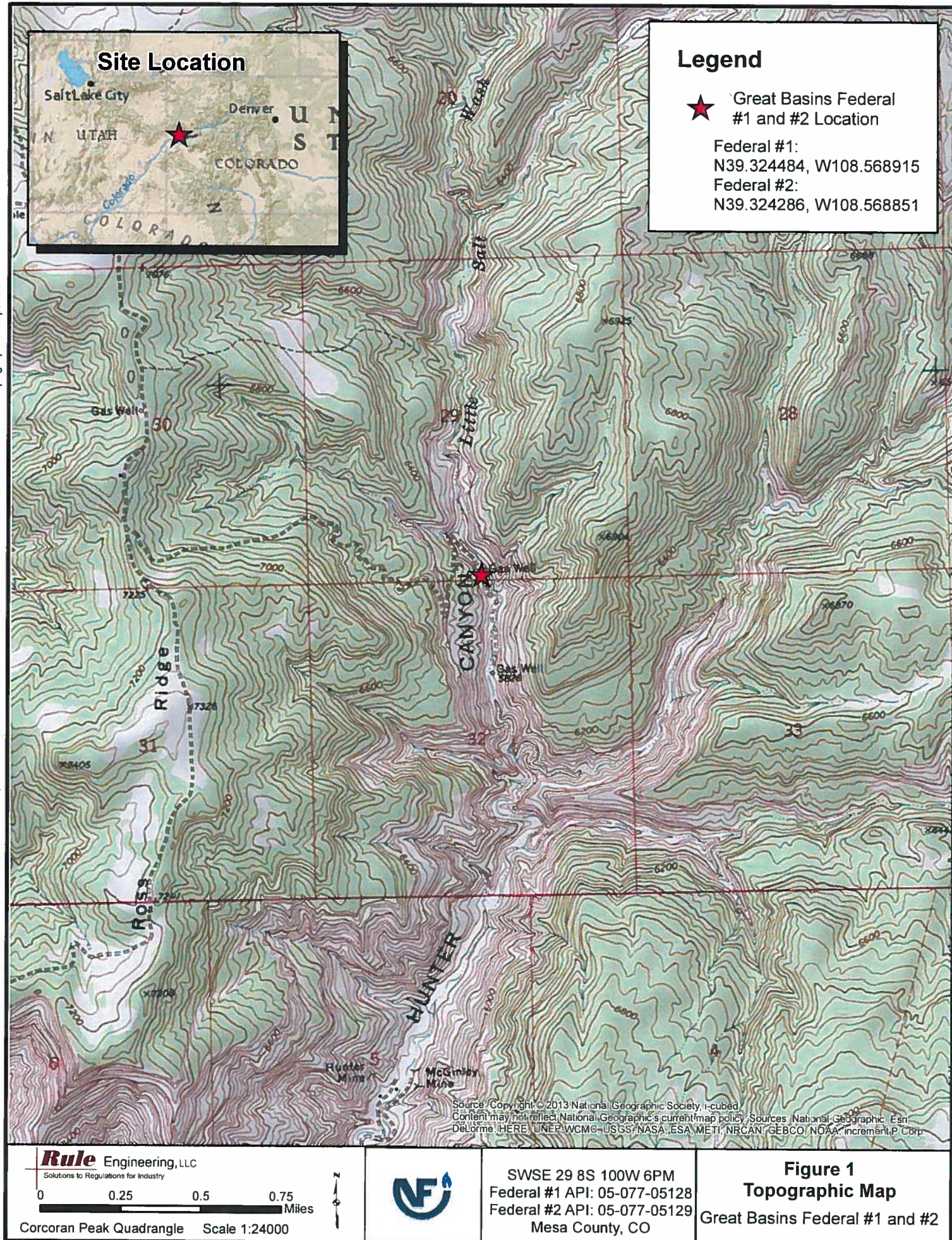
Digitally signed by Andrew Busch
DN: cn=Andrew Busch, o.ou, email=abusch@national
fuel.com, c=US
Date: 2016.06.28 16:00:00 -0500

Title: VP of Operations

Date: 06/28/2016

OGCC Approved: _____

Title: EPS NW Region Date: 07/27/2016



NARRATIVE ATTACHMENT FORM 27 (SITE INVESTIGATION AND REMEDIATION WORKPLAN)

Earthen Pit Closure (Great Basins Federal #1 & 2)
Document Date – 12/10/2015

TECHNICAL CONDITIONS

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

Based on the distance to surface water this location is in a sensitive area.

Potential receptors (water wells within ¼ mi, surface waters, etc.):

According to the COGCC GIS OnLine mapping service, the pad is less than 130 feet horizontal from Little Salt Wash. No monitoring wells or permitted water wells within ¼ mile of the well pad.

REMEDIALATION WORKPLAN

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

This Form 27 is being submitted to initiate the document trail for closure of an historical earthen pits on National Fuel Corporation (NFC) Great Basins Federal #1 & #2 well pad. "Earthen pits" were installed historically as containment for production and well blow down liquids and consist of a 6 to 8 foot diameter berm around a 3 to 5 foot pit. The wells was plugged and abandoned 7/6/2012. A topographic location map is included with this submittal. All activities conducted in support of this pit closure project will be carried out in accordance with COGCC Rules 905, 907, and 909 for conducting a site investigation in support of pit closures.

The following discussion was prepared to present general procedures for NFC's approach to pit closures and any associated remediation and documentation. This form is being submitted prior to the initiation of pit closure activities on this location. All subsequent data gathered in support of this project will be submitted to the COGCC in a Form 4 (Sundry Notice), and will reference the COGCC assigned Remediation Project number.

With approval of this Form 27, and in compliance with COGCC rules governing the closure of pits, NFC will initiate the pit closure project with the following activities:

- 905.b(2) & 905.b(4) – All fluids and/or solids will be removed from the pit and will be reused or disposed of at a permitted disposal facility.
- 905.b(4) – Discrete representative samples will be collected from below the earthen pit following removal of historic earthen pit, and will be analyzed for compliance with COGCC Table 910-1.
 - One full suite (Table 910-1) discrete sample will be collected from the soil directly below the earthen pit. Additional discrete samples will be collected from the pit bottom, and if necessary pit walls, and analyzed for the organic constituents listed

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- in Table 910-1. The number of additional samples collected will be adequate to represent the size and/or impacts present below the earthen pit.
- Sample results will be provided to the COGCC in supplementary submission(s) for this remediation project.
- 905.c – A Form 4 (Sundry Notice) will be submitted to document the onsite disposal of material in excess of the allowable concentrations identified in Table 910-1 or remediation on location.

Describe how source is to be removed:

Any impacted material identified below the earthen pit will be evaluated upon discovery and depending upon severity would be removed using heavy equipment and remediated onsite, or disposed of offsite at a permitted disposal facility. The effectiveness of excavation efforts and removal of impacts will be verified through sample collection and laboratory analysis conducted in accordance with COGCC Rule 910, and to reflect the procedures described above. These activities would be described in the Notification of Completion for this remediation project.

Any impacts identified below the earthen pit would be documented and reported on a Form 4 following successful remediation of impacts.

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.:

In the event that below pit impacts are identified, the following approaches to remediation would be utilized:

- In most cases impacted material would be removed and remediated onsite through blending and natural attenuation, and then returned to the excavation upon successful remediation of impacts. Complete removal of impacted materials and successful remediation of impacts will be demonstrated through sample collection and laboratory analysis.
 - Occasionally due to operational considerations the pit may need to be closed after impacted material has been removed. Excavated material would then need to be remediated and disposed of independently of the pit closure, and any onsite disposal of that material would be carried out in accordance with COGCC Rule 907 and documented on a Form 4 (Sundry Notice).

NARRATIVE ATTACHMENT FORM 27 (SITE INVESTIGATION AND REMEDIATION WORKPLAN)

Earthen Pit Closure (Great Basins Federal #1 & 2)
Document Date – 12/10/2015

- In the event that groundwater contamination is identified, or the depth of contamination makes removal of impacted material through conventional excavation impractical, the vertical and lateral extent of contamination would be determined by a third party contractor and an appropriate insitu remediation and monitoring plan would be developed and submitted to the COGCC for prior approval.

All remediation activities are verified with sample collection and laboratory analysis, conducted in accordance with COGCC Rule 910, and when necessary under an approved monitoring plan and analytical suite. These activities would be described in the Notification of Completion for this remediation project.

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

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

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.

The footprint for the backfilled earthen pit occurs within the pad boundary for this well pad. The backfilled pit will become part of the pad's surface. Final reclamation requirements will be based on discussions with BLM specialists during on-site meetings and agreed up final reclamation requirements.

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:

The site investigation for this project will be carried out as described above. All analytical data collected in support of this remediation project will be provided to the COGCC in the Notification of Completion. A site diagram showing the location of collected samples will also be provided in the notification of completion.

In the event that groundwater contamination is identified, or the depth of contamination makes removal of impacted material through conventional excavation impractical, the vertical and lateral extent of contamination would be determined by a third party contractor and an appropriate insitu remediation and monitoring plan would be developed and submitted to the COGCC for prior approval.

NARRATIVE ATTACHMENT FORM 27 (SITE INVESTIGATION AND REMEDIATION WORKPLAN)

Earthen Pit Closure (Great Basins Federal #1 & 2)
Document Date – 12/10/2015

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

Final onsite disposition of E&P waste would be detailed in the Notification of Completion, and if necessary in a Form 4 (Sundry Notice). Documentation of offsite disposal of E&P waste generated during this project would be kept on record at NFC's Fruita Field Office and would be available upon request.

November 25, 2015

**Re: Sensitive Area Determination
Great Basins – Federal 1 & Federal 2 Well Pad
Mesa County, CO**

The Sensitive Area Determination is intended to accompany the Colorado Oil and Gas Conservation Commission Site Investigation and Remediation Work Plan (COGCC Form 27) for the National Fuel Corporation Great Basins – Federal 1 & 2 well site.

The site is located approximately 13 miles north-northeast of Fruita, Colorado in Section 29, Township 8 South, Range 100 West in Mesa County. The Sensitive Area Determination was performed following the guidelines set forth by the COGCC 900 Series Exploration and Production Waste Management rules. A desktop review of available information pertaining to the ground water, surface water, geology, and soils of the site and surrounding area was performed.

GROUNDWATER AND WATER WELLS

There is not a groundwater or water well within 3 miles of this site.

SURFACE WATER

Generally, a well pad location within 0.25 mile radius to a perennial drainage is required to be classified as within a sensitive area. The site is located approximately 100 feet west of Little Salt Wash, inside the .25 mile radius.

OTHER HYDROLOGIC CONSIDERATIONS

The site is not located in a Wellhead Protection Area. The site is not in close proximity to a domestic or Public Water Supply well. It is not underlain by a designated groundwater basin and is not within a Surface Water Supply Area.

GEOLOGY

The surface geology at the site is the Williams Fork of the Mesa Verde Formation. The formation consists of several thousand feet of interbedded fluvial sandstone, shale, coal and mudstone.

SOIL

A review of the National Resource Conservation Service (NRCS) soil report for the site indicates that the Rock outcrop - Torriothents complex 15 – 90 percent slopes is the predominant soil type in the steep slopes surrounding well site.

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Grand Junction, CO 81505
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Lakewood, CO 80215
(303) 431-8500**
www.ruleengineering.com

501 Airport Drive, Ste 205
Farmington, NM 87401
(505) 325-1055

DETERMINATION

A review of the geologic and hydrologic information indicates that groundwater at the site is may be relatively deep. There are no developed or identified groundwater resources in the area. However, the site is inside the standard .25 mile radius for sensitive area classification.

Based on this information, it is determined that the site is constructed in a sensitive area.

Rule Engineering,

Sean T. Norris

Sean T. Norris
Geologist / Area Manager

Cc: Andrew Busch, National Fuel Corporation
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