

State of Colorado  
**Oil and Gas Conservation Commission**



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

FOR OGCC USE ONLY

#6128

OGCC Employee:

Spill  Complaint  
 Inspection  NOAV

Tracking No:

**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 Operator Number: <u>10323</u>	Contact Name and Telephone: <u>Kristen Stocks</u>
Name of Operator: <u>Entek GRB, LLC</u>	No: <u>(307) 200-1930</u>
Address: <u>535 16th Street, Suite 620</u>	Fax: <u>(866) 435-9424</u>
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u>	

API Number: <u>05-081-07231</u>	County: <u>Moffatt</u>
Facility Name: <u>Slater Dome</u>	Facility Number: <u>289418</u>
Well Name: <u>Brownlee</u>	Well Number: <u>13-9</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NESE 13, 12N, 89W, 6th</u> Latitude: <u>40.992714</u> Longitude: <u>-107.32093</u>	

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Drilling fluid with crude oil

**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.): undeveloped 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.): none

**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>residual drilling materials contained within unlined pit</u>	<u>visual observation and drilling materials sample taken</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):

Residual drilling fluid materials are present in the unlined pit located on the Brownlee 13-9 well pad (see Figure 1 for approximate pit location). A sample of the residual material has been obtained and tested for total petroleum hydrocarbons (TPH). Figure 2 illustrates the sample location. The sample analysis results indicate concentrations of greater than 500 mg/kg of TPH exist in the residual materials. Accordingly, the proposed initial action will be to uniformly mix the residual drilling materials with clean fill obtained from on-site borrow sources; to reduce TPH concentrations and other Table 910-1 parameter concentrations to acceptable levels and use the mixed material to backfill the pit.

**Describe how source is to be removed:**

To minimize the impact of the TPH contaminated material on areas adjacent to the Brownlee 13-9 pit, an earthen berm, constructed of clean, compactable fill material will be installed at, or near the midpoint of the pit. Once the earthen berm is in place, the residual drilling material from one side of the pit (excavation side) will be excavated and placed in the other side of the pit (stockpile side). Once in the stockpile side of the pit, all residual drilling materials will be uniformly mixed with clean soils.

**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 residual material has been removed from the excavation side, the excavation side bottom and sidewalls will be visually inspected for oil staining. Any visually identified oil stained materials will be excavated, placed in the stockpile side and mixed with clean soil. Confirmatory soil samples (discrete) will be collected from 2 locations in the excavation side and sampled for Table 910-1 parameters. In addition, 2 confirmatory soil samples (composite) of the uniformly mixed material located in the stockpile side will be sampled for Table 910-1 parameters. If all sample results are at or below Table 910-1 soil standards, stockpiled material will be excavated, placed and compacted in the excavation side. Once all material has been removed from the stockpile side, confirmatory soil samples (discrete) will be collected from 2 locations in the pit bottom and sampled for Table 910-1 parameters. If all sample results are at or below Table 910-1 soil standards, the stockpile side will be backfilled.



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

Page 2 REMEDIATION WORKPLAN (Cont.)

OGCC Employee: \_\_\_\_\_

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

Depth to groundwater in the vicinity of the Brownlee 13-9 pit location is reported to be greater than 400'. Accordingly, it is unlikely that groundwater has been impacted by the residual drilling materials.

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.

Once the pit has been backfilled with the mixed residual drilling material/clean fill, clean fill only will be placed in the upper two feet of the pit and the surface elevation of the backfilled pit will be shaped and graded to match the existing grade around the perimeter of the pit. Once activity at the well location has ceased, the surface will be roughened and broadcast seeded in accordance with revegetation procedures included in the Entek Storm Water Management Plan (SWMP). Well location restoration and revegetation shall be conducted in a manner consistent with BLM Best Management Practices for Noxious and Invasive Weed Prevention and the SWMP.

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:

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

Mixed with site soils and used to backfill pit up to 2' below ground surface. Remaining 2' to be backfilled with clean fill only.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 8/1 Date Site Investigation Completed: 8/31 Date Remediation Plan Submitted: 9/9 Remediation Start Date: 9/14 Anticipated Completion Date: 10/15 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: Tim Hopkins Signed: [Signature] Title: Regional Manager Date: 9/9/11

OGCC Approved: [Signature] Title: FOR Chris Canfield Date: 09/16/2011 EPS NW Region

COAs: 1) If SAR, pH, Ec > Table 910-1 for backfill material, use 3' of clean soil at the top. 2) When compacting material in pit, do it so that permeability does not decrease too much (avoid over-compacting)



LITTLE SNAKE RIVER

COUNTY ROAD 129

MOFFAT COUNTY  
ROUTT COUNTY

BROWNLEE 13-9 PIT

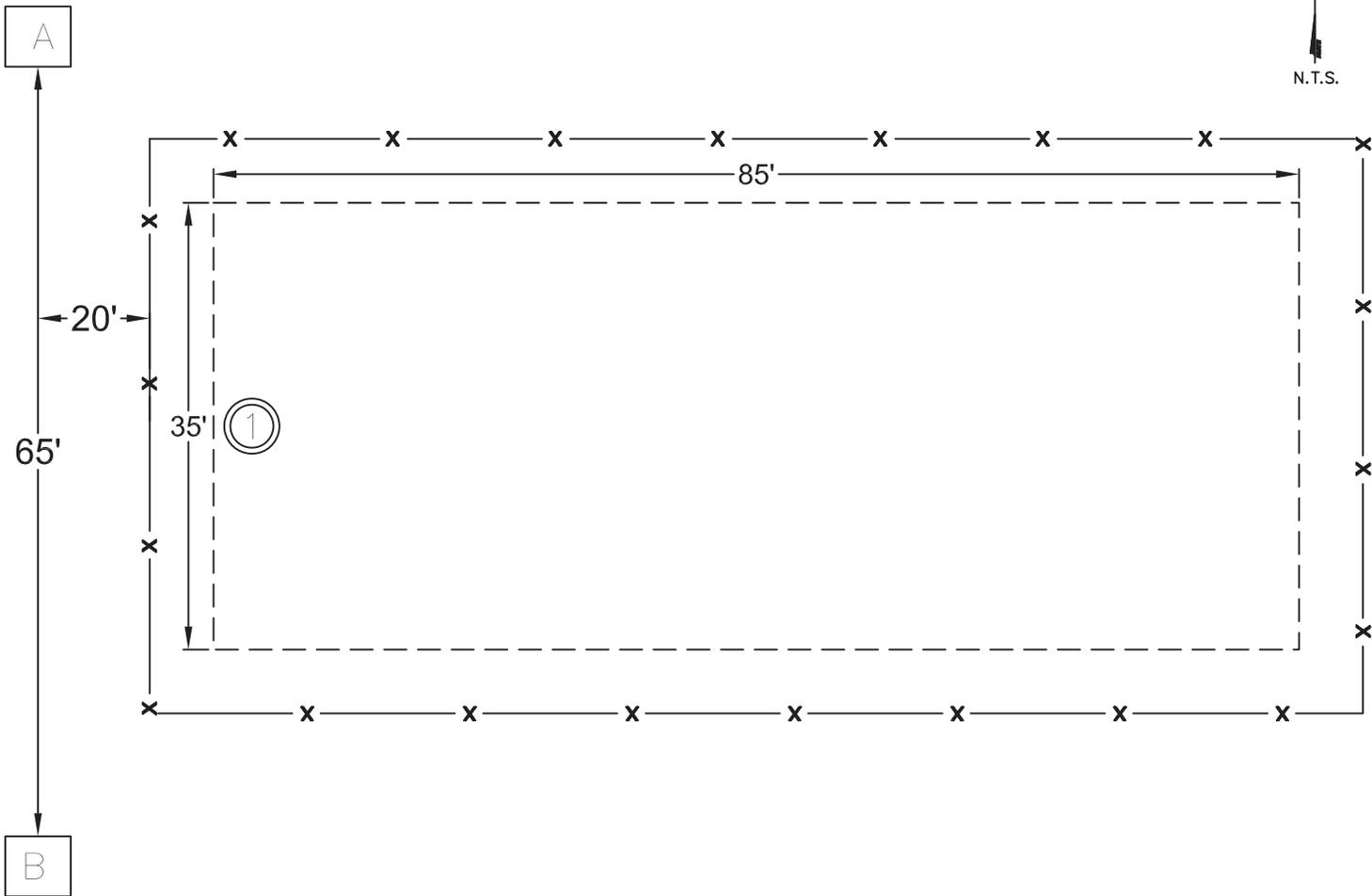
GRAVEL ACCESS ROAD

**FIGURE 1**  
BROWNLEE 13-9  
SLATER DOME FIELD  
SEPTEMBER 9, 2011



N.T.S.





**LEGEND**

-  PIT SAMPLE LOCATION
-  BACKGROUND SAMPLE LOCATION (TPH ONLY)
-  PIT PERIMETER
-  FENCE

**FIGURE 2**  
 BROWNLEE 13-9  
 SLATER DOME FIELD  
 SEPTEMBER 9, 2011

