



Proposed BMPs

1 of 10

(2A) 2096294

**EXPANSION OF THE LEIDY, BARNES GU #1**  
**Supplemental STORM WATER MANAGEMENT PLAN (SWMP)**  
Appendix NN 10 March 2009

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**1.0 SITE AND PROJECT INFORMATION**

Project Name: Leidy, Barnes GU #3; Well Pad Expansion

Project Location: The project is located on private lands located in Sec 2;  
T33N, R09W SUL La Plata County, Colorado N.M.P.M.  
Lat/Long: 37°08'10.46400" N 107°48'03.49200" W

Owner Name and Address: BP America Production Company  
380 Airport Road  
Durango, CO 81301

Facility Contact and  
Telephone Number: Dan Fauth  
(970) 247-6800

**Project Specifics**

- a. Description of the Construction Activity: Expansion of a well pad for a natural gas well on a 260' x 195' level well pad.
- b. Sequence of Major Construction Activities:
- . Well Pad Construction
  - . Well Drilling and Completion
  - . Interim Pad Reclamation
- c. Estimated Total Area of Site disturbance ~1.16 Acres
- d<sub>a</sub>. Estimated Runoff Coefficient, Before and After
- | Resource:          | Before: | After:    |
|--------------------|---------|-----------|
| Pinyon/Juniper     | 0.35    | 0.35/0.75 |
| Grasslands         | 0.40    | 0.40/0.75 |
| Existing Level Pad | 0.75    | 0.75      |

d<sub>b</sub>. Existing Soil Data:

Soil:	Area:	Erosion:
Ustic Torriorthents-Ustollic Haplargids Complex	Entire Pad	High

e. Description of Existing Vegetation and Estimate of Percent Aerial Cover:

Pinyon/Juniper ~60%  
Grasslands ~50%

f. Description of Potential

	Pollution Sources:	1) Diesel fuel and gasoline for equipment and vehicles; 2) Lubricating oil 3) Drilling mud (bentonite -based viscous fluid); 4) Casing cement.
g.	Description of Anticipated Non-storm water Discharges:	None Anticipated
h.	Name of Receiving Water and Type of Outfalls:	Cottonwood Gulch, Intermittent Stream

## **2.0 SITE MAPS**

The attached maps (Exhibit C) illustrate the approximate location of the well pad. Construction activities and areas of cut and fill and soil disturbance are limited to the area surveyed for the location. The maps illustrate the features required by the CDPS General Permit for field wide construction activities on fee lands under the field wide permit. There are no point-source outfall structures; runoff enters the receiving watersheds and water bodies by overland flow.

## **3.0 BEST MANAGEMENT PRACTICES FOR STORMWATER POLLUTION PREVENTION**

The Best Management Practices (BMP) to be employed during the construction of this well site and pipeline project are outlined in the field wide Storm Water Management Plan. Specific BMPs to be implemented during the proposed project are described in Exhibit B.

## **4.0 INSPECTION AND MAINTENANCE**

Inspections of the project site and maintenance of BMPs installed shall be conducted in accordance with the CDPHE CDPS permit and the field wide plan.

## **5.0 TERMINATION**

At this time no formal permit termination is necessary as the PHASE II rule under the CDPHE is covered under a field wide permit. Upon final stabilization of the site covered under this supplemental plan, the plan and its associated inspections should be kept for at least three years following the date of final stabilization.

**EXHIBIT A**  
Implementation Responsibility Transfer Log

By signing below, I certify under penalty of law that I understand and am responsible for the maintenance and implementation of the terms and conditions of the general Colorado Discharge Pollutant System (CDPS) permit and measures identified by the above site specific Storm Water Management Plan (SWMP) that may authorize the storm water discharges associated with my activities from the construction site identified in Section 6.0 of this site specific SWMP.

Site Responsibilities:

Name and Title (type or print): \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

By signing below, I certify under penalty of law that I understand and am responsible for the maintenance and implementation of the terms and conditions of the general Colorado Discharge Pollutant System (CDPS) permit and measures identified by the above site specific Storm Water Management Plan (SWMP) that may authorize the storm water discharges associated with my activities from the construction site identified in Section 6.0 of this site specific SWMP.

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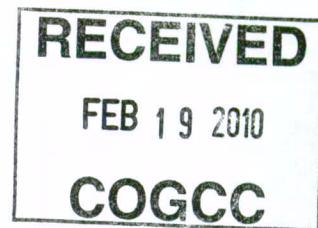
Site Responsibilities:

Name and Title (type or print): \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_





**EXHIBIT B**  
Detailed BMPs & BMP Alterations Log

## **BMPs**

### **Identified Implementation Locations:**

#### **1. Drilling Pad Construction (See attached Figure 1)**

BMPs: 2, 14, 24 & 40

- Implement wattles where shown on maps.
- Implement run-on diversion dike to NE corner.
- Establish sub-base to route surface water as sheet flow off the south end of location.
- Establish base lift gravel to accommodate level drilling operations and stabilize pad surface.
- Store Top soil as shown on map
- Store Spoils from excavation as shown on map for use in reclaimed slopes.

#### **2. Drilling and Completion Operations**

BMPs: Spill and Contaminated Soil Management

- Fuel, Mud Products, drill cutting spoils, Trailer Septic Tanks, etc. that may contribute to storm water run-off shall be maintained within the graveled well pad area and contained in proper containers and/or sheltered from exposure.
- Any equipment maintenance shall be avoided during drilling and completion—in the event maintenance must occur, it shall be conducted within the graveled pad area, fluids shall be captured within spill proof containers, and absorbent mats shall be utilized beneath maintenance operations.
- Contaminated soil should be collected and disposed of at an appropriate soil farm or similar facility.

#### **3. Interim Pad Reclaim (See attached Figure 2)**

BMPs: 2, 24, & 34

- Reclaim cut slopes to 3:1 or less.
- Trench and bury remaining drill cuttings when material is 95-100% dry.
- Re-establish run-on diversion dike to NE corner
- Spread top-soil over fill slopes & blend to existing grade areas where sloping meets pre-disturbance grade.
- Establish borrow ditch turn-outs to divert borrow water prior to its entry onto the pad.
- Repair, replace, or install pad wattles if necessary or as shown.

#### **4. Re-seeding & BMP Removal**

- Re-seed as soon as possible following reclamation of pad-provided season and weather permits and cover with 2 tons/acre of weed free straw mulch. Tackify or crimp the mulch to the exposed soil surfaces.
  - Cut/Fill Slopes, access foreslopes, & Top-Soil Storage Area.
- Seed mix should implement an annual cover or triticale.
- Upon 70% Re-Vegetation across site, remove wattles and any other temporary erosion and sediment control BMP.

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**EXHIBIT C**  
Maps



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STORM WATER CONTROL MAP-DRILL PAD LAYOUT  
CLEARING AND GRADING  
Figure 1



NOTES:  
1. TOPOLINES 4-7 & PROJECTION NAD83 (CONTINUED)  
2. This map is informational in nature, not accurate by surveying standards, and is provided without representations or warranties by Primorys Environmental Consulting, Inc.

N  
Sec. 2, T. 33N, R. 9W  
N.M.P.M.  
(La Plata County, CO.)

**LEGEND**

- Limit of Disturbance
- SCL Sediment Control Log (Wattle)
- DD Diversion Dike
- Offsite Water Flow Pattern
- Onsite Water Flow Pattern
- Proposed Well Pad Access

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**NOTES:**  
 1. TOPO LINES 4.7 ft. PROJECTION: NAD83 (GCS83)  
 2. This map is informational in nature, not accurate by surveying standards, and is presented without representation or warranty by Prymoris Environmental Consulting, Inc.



Sec. 2: T 33N, R9W  
 N.M.P.M.  
 (La Plata County, CO.)

LEGEND	
	Limit of Disturbance
	Sediment Control Log
	Diversion Dike
	Permanent Seeding & Mulching (2 tons/acre of weed free straw mulch)
	Onsite Water Flow Pattern
	Offsite Water Flow Pattern
	Proposed Well Pad Access

10 Mar 2009

