

ANDERSON GC C 2 & 3 PAD
Supplemental STORM WATER MANAGEMENT PLAN (SWMP)

Appendix PG 5 November 9, 2011

Revision C: January 9, 2012

1.0 SITE AND PROJECT INFORMATION

Project Name: Anderson GC C #2 & #3

Project Location: The project is located on private lands located in Sec 24; T34N, R08W SUL, La Plata County, Colorado N.M.P.M.
 Well Head #2: 37°10'24.561"N / 107°39'52.561"W
 Well Head #3: 37°10'24.568"N / 107°39'52.067"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: Construction of a natural gas well pad (300' x 195'), new access road, and reclamation of existing road
- b. Sequence of Major Construction Activities: . Access Road Construction
 . Well Pad Construction and Existing Road Reclamation
 . Well Drilling and Completion
 . Interim Pad Reclamation
- c. Estimated Total Area of Site disturbance ~3.7 Acres
- d. Estimated Runoff Coefficient, Before and After
- | Resource: | Before: | After |
|------------------------|----------------|--------------|
| Agricultural Grass Hay | 0.45 | 0.4 |

Existing Soil Data:

Soil:	Area:	Erosion:
Arboles clay	80%	Moderate
Bayfield silty clay loam	10%	Slight
Bodot clay	10%	Moderate

- e. Description of Existing Vegetation and Estimate of Percent Aerial Cover: Grass Hay ~80%

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- 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: Tributary to Ignacio Creek via overland flow & unnamed intermittent drainage

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.

3.0 BEST MANAGEMENT PRACTICES FOR STORMWATER POLLUTION PREVENTION

The Best Management Practices (BMP) to be employed during the construction of this, well site 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 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 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. **Well Pad and Access Road Clearing and Grading (See Maps, Pages 2-3)**
 - Implement wattles where shown on map.
 - Install Steel Line pipe culverts where shown on the map. The specific diameter of each culvert is identified on the drawings. Install wattles as inlet and outlet protection where shown.
 - Install 84" CMP culvert where shown on the map. Install inlet and outlet protection per the USACE permit obtained by landowner.
 - Avoid clearing and leveling ROW to the maximum extent practicable to retain existing vegetation.
 - Creek crossing shall follow conditions of permit issued by the USACOE obtained by landowner.

2. **Drilling Pad Construction (See Maps, Page 2)**
 - Pad shall be constructed utilizing gravel from reclaimed roadway. See 3 below.
 - Implement structural best management practices (i.e. wattles) where shown on maps prior to ground disturbing activities.
 - Store topsoil as shown on map west of the proposed pad. Track and temporarily mulch top soil to minimize off site siltation. Install sediment control logs as indicated.
 - Establish sub-base to route surface water as sheet flow off the north edge of location.
 - Establish base lift gravel to accommodate level drilling operations and stabilize pad surface.

3. **Existing Road Reclamation (See Maps, Page 4)**
 - Reclaimed gravel shall be utilized in pad construction. See 2 above.
 - Remove existing culverts.
 - Reclaim cut/fill slopes to match existing/natural grades.
 - Repair, replace, or install wattles as shown.
 - Following reclamation of pad, reseed and cover with 2 tons/acre of weed free straw mulch as soon as the season and weather allows. Tackify or crimp the mulch to the exposed soil surfaces.
 - Cut/fill slopes & topsoil storage area.
 - Seed mix should implement an annual cover or triticale.
 - Seed mixture = G-P

4. **Drilling and Completion Operations**

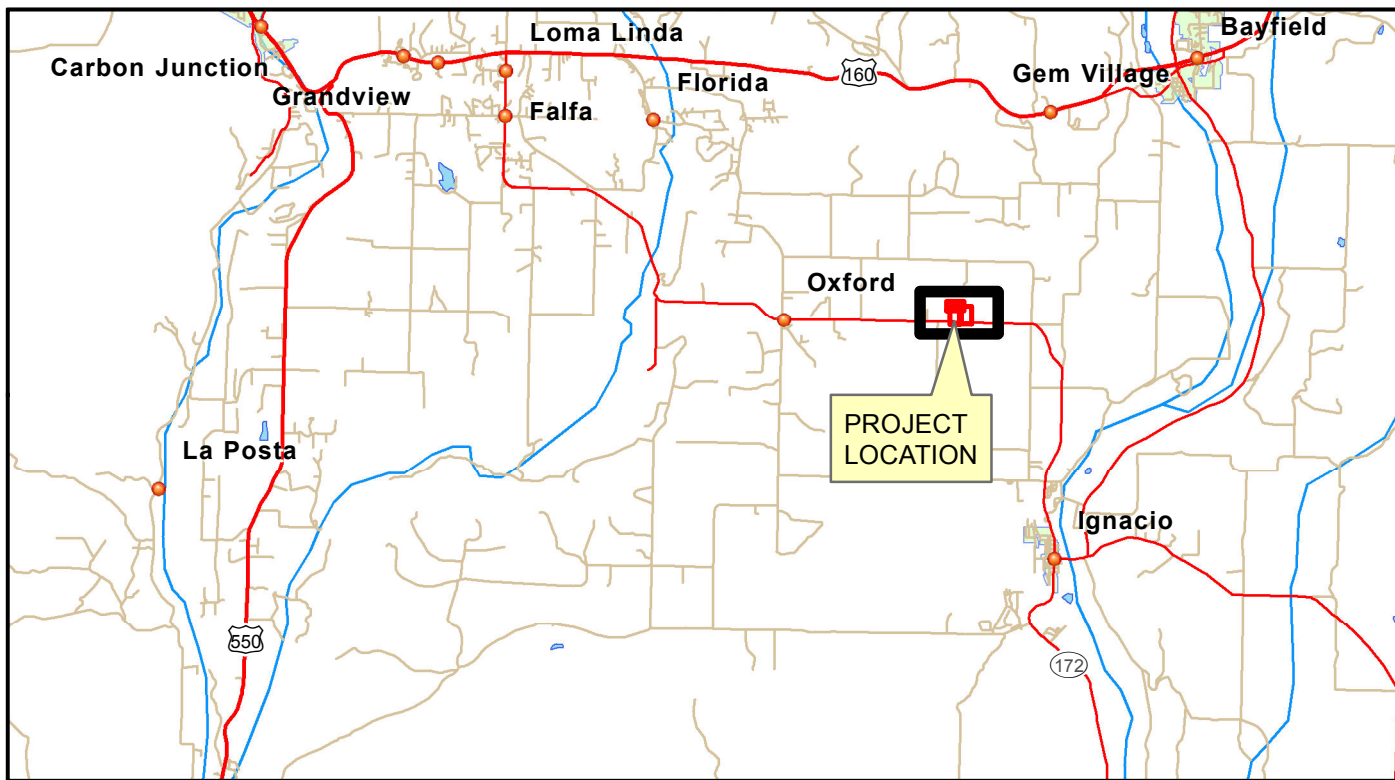
BMPs: Spill and Contaminated Soil Management

 - Fuel, mud products, drill cutting spoils, trailer septic tanks, etc. that may contribute to storm water runoff 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.

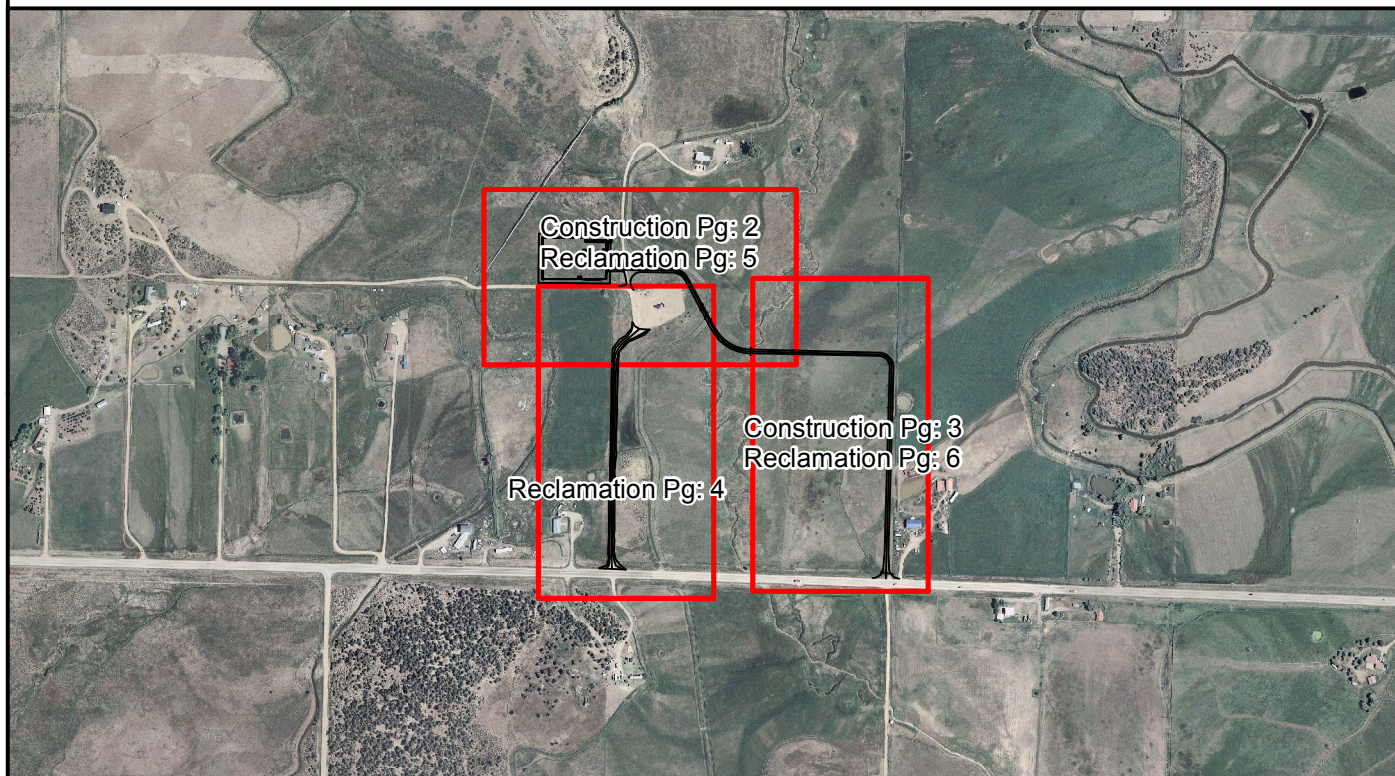
5. **Interim Pad Reclamation (See Maps, Pages 5-6)**
 - Reclaim cut/fill slopes to 3:1 or less. Use excess spoil material as initial reclamation of cut slopes.
 - Dispose of drill cuttings in accordance with COGCC 900 series rules.
 - Spread topsoil over fill slopes & blend to existing grade areas where sloping meets pre-disturbance grade.
 - Repair, replace, or install pad wattles if necessary or as shown.

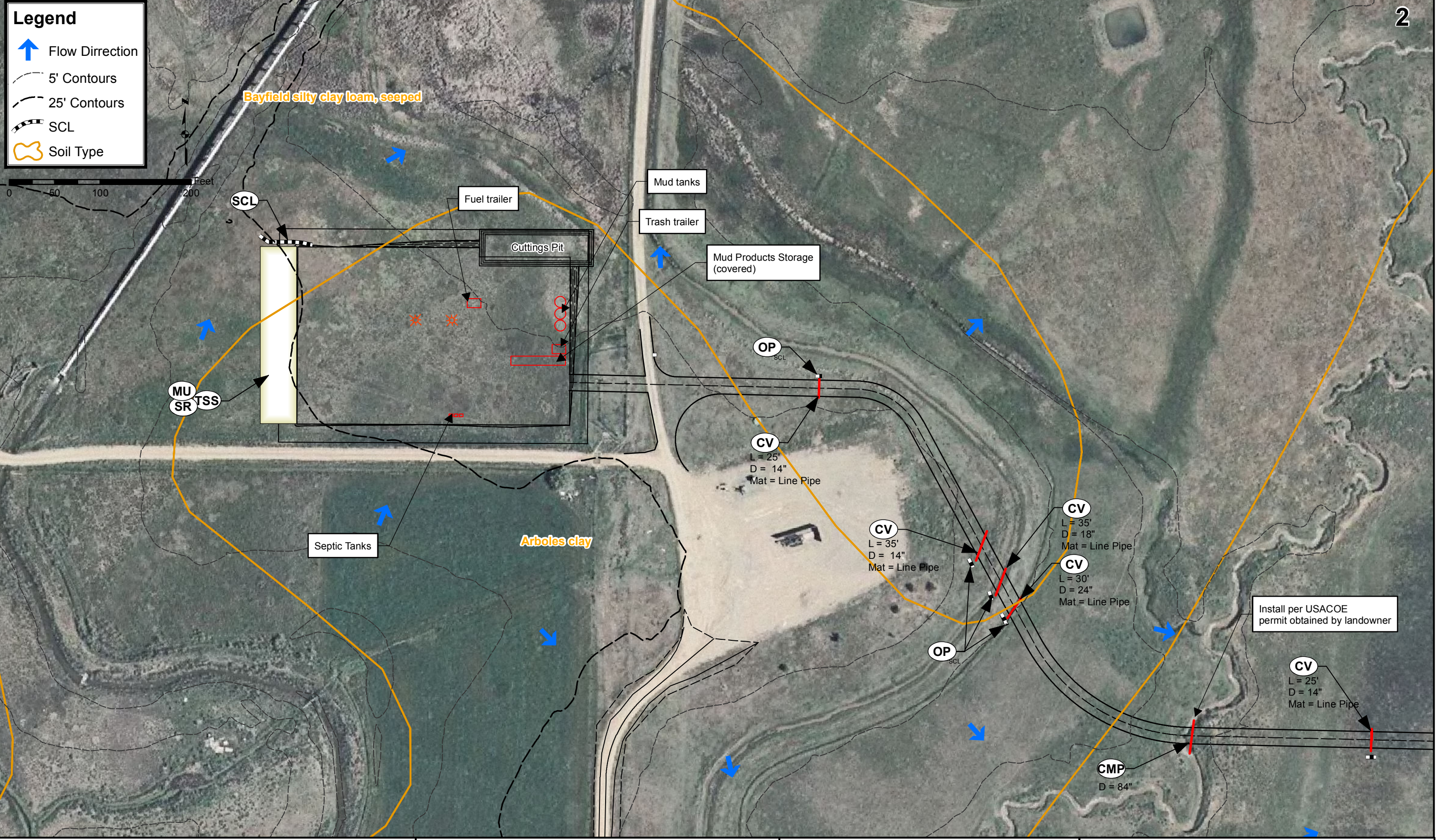
6. **Re-seeding & BMP Removal (See Maps, Pages 5-6)**
 - Following reclamation of pad, reseed and cover with 2 tons/acre of weed free straw mulch as soon as the season and weather allows. Tackify or crimp the mulch to the exposed soil surfaces.
 - Cut/fill slopes & topsoil storage area.
 - Seed mix should implement an annual cover or triticale.
 - Seed mixture = G-P
 - Upon 70% Re-Vegetation across site, remove wattles and any other temporary erosion and sediment control BMP.

EXHIBIT C
Maps



- | | | | |
|-----------------------------|---|---------------------------|--|
| (SCL) | Sediment control log "wattle" | (WB) | Water bar or slope break |
| (CD) _{SCL} | Sediment control log as a check dam | (CWA) | Concrete wash area |
| (CD) _{ROCK} | Rock check dam | (TS) | Temporary Seeding |
| (SF) | Silt Fence | (PS) _{MU} | Permanent seeding and Mulching (Straw, Hay, Hydro-Mulch) |
| (CV) | Culvert | (SR) | Surface roughening or Track Depressions |
| (FL) | Flume | (ECM) | Erosion control matting |
| (CMP) | Corrugated Metal Pipe | (ECB) | Erosion control blanket |
| (IP) _{SCL} | Sediment control log as inlet protection | (DW) | Dewatering location |
| (IP) _{ROCK} | Rock (Rip-Rap) inlet protection | (TSS) | Topsoil Storage |
| (OP) _{SCL} | Sediment control log as outlet protection | (SMZ) | Stream management zone |
| (OP) _{ROCK} | Rock (Rip-Rap) outlet protection | (VB) | Vegitated buffer |
| (SCE) | Stabilized construction entrance | | |
| (DV) | Diversion Ditch | | |
| (DD) | Diversion Dike | | |
| (RD) | Rundown or spill way (Rip Rap) | | |





**CLEARING/GRADING/CONSTRUCTION
SUPPLEMENTAL STORM WATER
MANAGEMENT PLAN**

**BP AMERICA PRODUCTION Co.
ANDERSON GU C #2 & #3
WELL PAD & ACCESS**

LA PLATA COUNTY, COLORADO

DRAWN BY: MJW
CHECKED BY: CK
DATE: 01/09/2012
PAGE 2 OF 6






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"Dedicating resources to tomorrow's environment for today's industry."
150 ROCKPOINT DR DURANGO, CO (970) 385-4732

Note: Prymors Environmental Consulting is not responsible for the accuracy of the data provided for this project. This map is to be used as a reference drawing only not established for surveying or engineering. No underground utilities are outlined on this map contractors are encouraged to make a "one call" prior to ground disturbance activities.

Scale:	File	Revision
1"=100'	BP Anderson GC C No 2 & 3 SWMP1 11-1027MW.mxd	C - 1/9

Legend

-  Flow Dirrection
-  5' Contours
-  25' Contours
-  SCL
-  Soil Type



**CLEARING/GRADING/CONSTRUCTION
SUPPLEMENTAL STORM WATER
MANAGEMENT PLAN**

**BP AMERICA PRODUCTION Co.
ANDERSON GU C #2 & #3
WELL PAD & ACCESS**

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DATE: 01/09/2012

PAGE 3 OF 6

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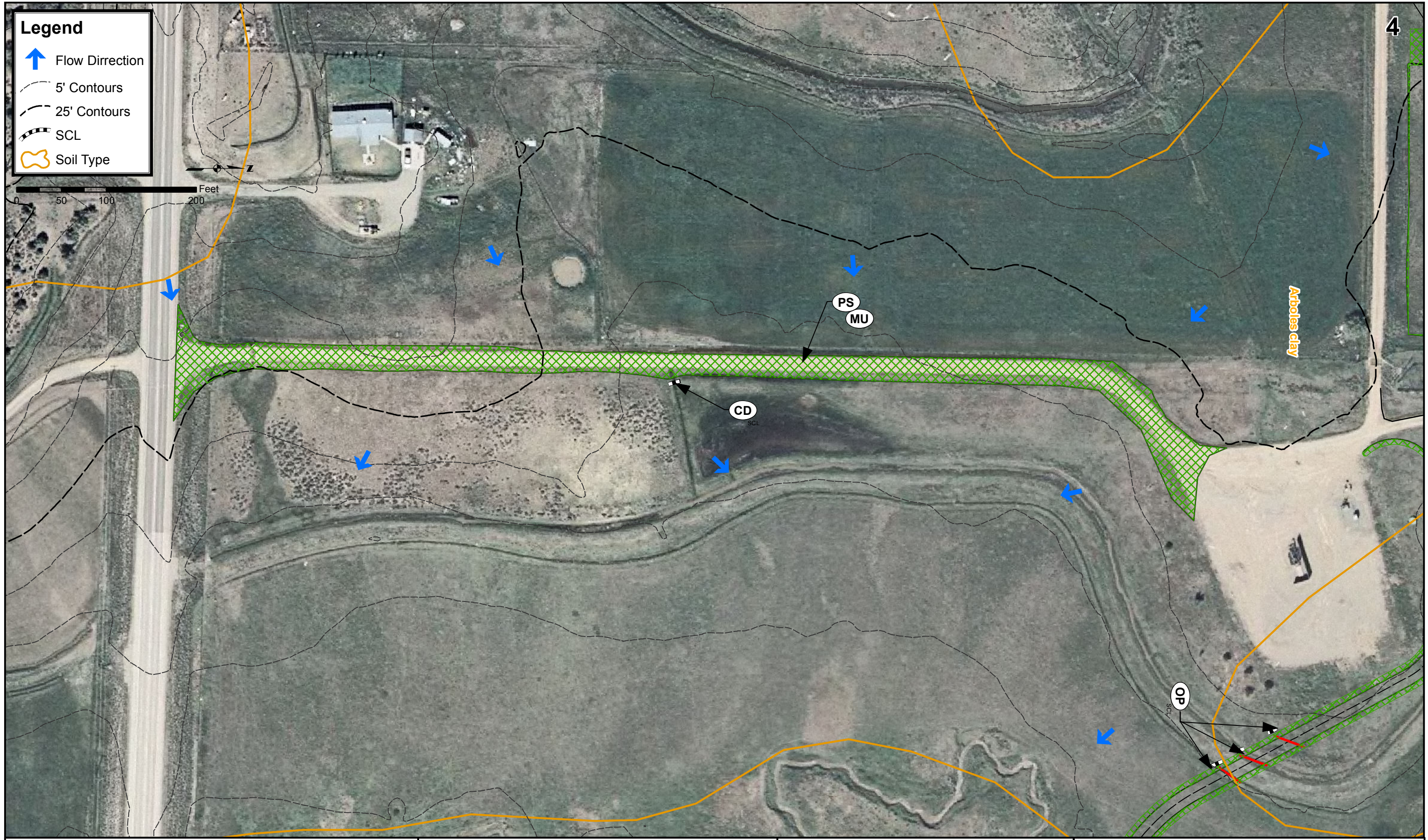


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Revision: C - 1/9



**POST CONSTRUCTION/RECLAMATION
SUPPLEMENTAL STORM WATER
MANAGEMENT PLAN**

Scale: 1"=100'	File BP Anderson GC C No 2 & 3 SWMP2 11-1027MW.mxd	Revision B - 12/22
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ANDERSON GU C #2 & #3
WELL PAD & ACCESS**

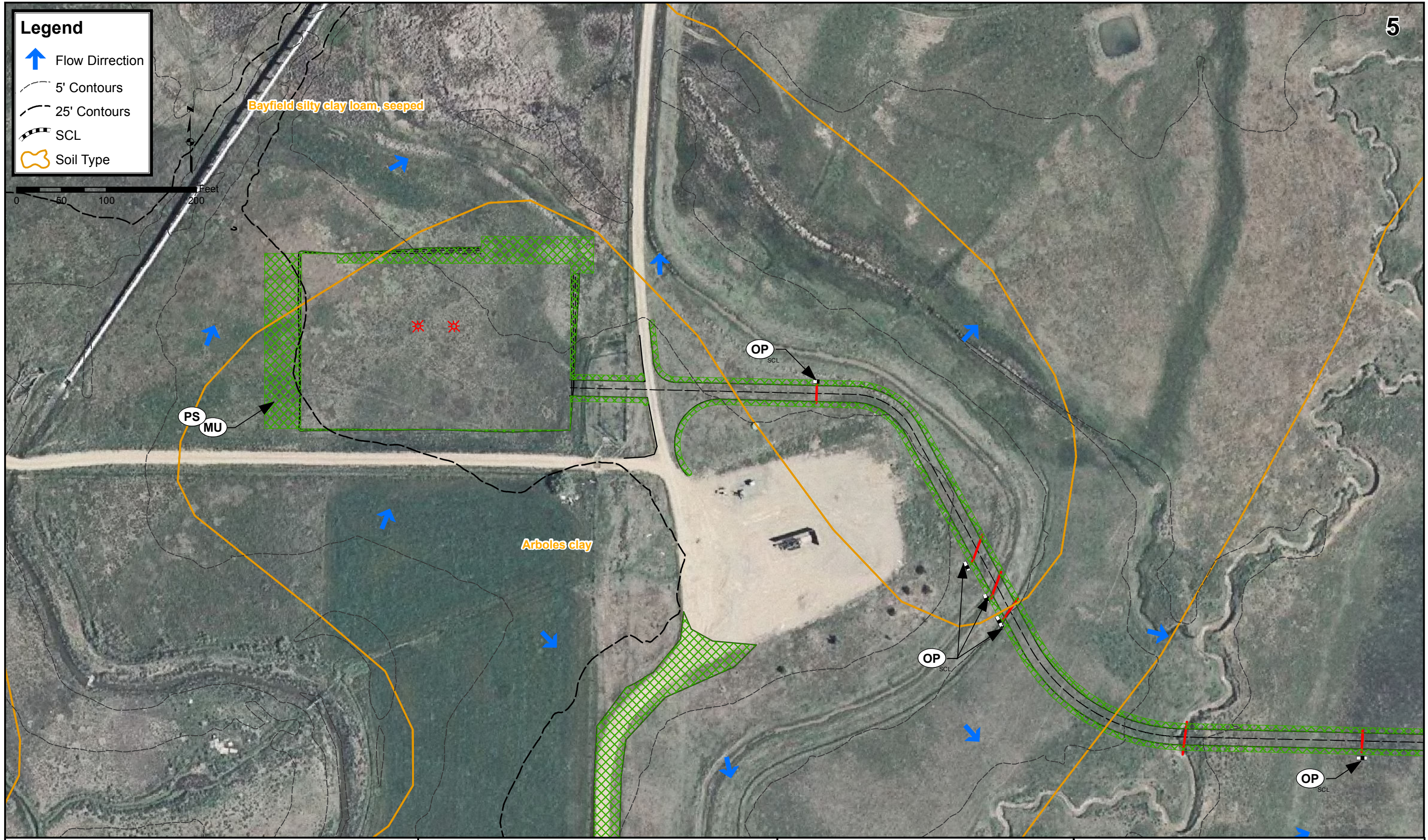
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SUPPLEMENTAL STORM WATER
MANAGEMENT PLAN**

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ANDERSON GU C #2 & #3
WELL PAD & ACCESS**

LA PLATA COUNTY, COLORADO






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Legend

-  Flow Dirrection
-  5' Contours
-  25' Contours
-  SCL
-  Soil Type




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SUPPLEMENTAL STORM WATER
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