

Attachment D

Site Drainage Map

V-shaped ditch (typ.) Diversion channel 18" deep with 2H:1V side slopes. @ Slope = 0.001. Flood Flow = 1.0 cfs. Flow Capacity = 5 cfs.

V-shaped diversion channel 1 ft deep with 1H:1V side slopes. Flood Flow = 1.2 cfs. Flow Capacity = 1.57 cfs @ Slope = 0.004.

Daylight Line Flowback Pit  
24" CMP Culvert @ 10% min. grade. Riprap discharge outlet area into V-shaped channel. Use riprap D<sub>50</sub> = 9" diameter. Flood Flow = 1.2 cfs. Flow Capacity = 40 cfs.

24" CMP Culvert @ 10% grade. Place riprap mat 8 ft. x 10 ft long, at outlet. Use riprap D<sub>50</sub> = 9" diameter. Flood Flow = 7.28 cfs. Flow Capacity = 40 cfs.

24" CMP Culvert @ 2% minimum grade. Flood Flow = 1.2 cfs. Flow Capacity = 18 cfs

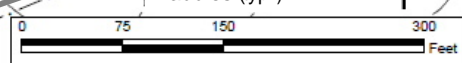
24" CMP Culvert @ 2% minimum grade. Flood Flow = 3 cfs. Flow Capacity = 18 cfs

Sedimentation Basin - 26,208 ft<sup>3</sup> with two 18" CMPs; one low CMP with slide gate & one high CMP for overflow. Daylight to natural channel.

Pit 3: 150'x600'x14' (36,320 cy. / 174,659 bbls.)  
Pit 4: 150'x600'x14' (36,320 cy. / 174,659 bbls.)

Note: No wells located on staging pad. Meter houses are located on the individual well pads.

Erosion Control Waddles (typ.)  
Tributary Drainage Area = 18.33 acres  
Pit 3 & 4 Surface Area = 4.13 acres  
Net Drainage Area = 14.2 Acres




Estimated Dirt Quantities (cy)			
ITEM	CUT	FILL	EXCESS
	SUBSOIL	TOPSOIL	
Pit 3	69,549	3,908	73,457 (C)
Pit 4	80,802	4,245	85,047 (C)
Staging	10,737	150,351	139,614 (F)
TOTAL	150,351	18,890	18,890 (C)

Notes:  
1. Subsoil from pits cuts (150,351cy.) used to create staging area.  
2. Topsoil (18,890 cy.) stored in separate pile from staging area.  
3. Topsoil volumes based on 8" soil depth.  
4. Total Disturbed Area = +/- 12.1 Ac.

SCALE: 1" = 150'  
DATE: 04.13.2011

Highlights Denote 5-26-11 Revisions



**SG Interests**  
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**Bull Mountain Unit**  
T. 11 S, R. 90 W, Section 26

**McIntyre Flowback Pits 3 & 4**  
**CONSTRUCTION LAYOUT**