CHAPTER 2

SOILS

TABLE 2-1

Topsoil Volumes*

Well No.	Cubic Yards of Material
G-1	415
G-2	3,104
G-3	1,182
G-4	1,100
G-5	1,909
G-6	792
G-7	1251
G-8	543
G-9	1,574
G-10	2,344
G-11	254
G-12	563
G-13	2,162
G-14	1,544
G-15	1,475
G-16	1,092
G-17	797
G-18	~~2,195~~ 2,841
G-19	2,037
G-22 & Access Road	2,103
G-31	~~4,624~~ 4,202
Access Road	~~9,167~~ 11,224

* These total do not include soil salvaged from short roads accessing well sites which is bladed to the side of the road.

where possible, for laboratory analysis. The analyses will be incorporated into Attachment 2-1. Two additional soils samples were taken along the road corridor, these samples were labeled AMV SP-1 and AMV SP-2. These samples were dug by hand with a shovel and pick. The lab analysis of these samples is included in Attachment 2-1.

Per the review of aerial photography taken of the area in November 2006, there does not appear to be rock outcrops along the path of the AMV access road. When Mr. Clements walked the road area in conjunction with the soil survey, he identified no concerns with the soil map units designated on Plate 1 included in Attachment 2-1.

During the construction of the AMV road large boulders were encountered, collected and used to construct and stabilize the road between WB2 and WB3 (refer to Plate 3 in Attachment 5-4). By salvaging and using the encountered boulders the operator was able to prevent the road from going thorough a drainage The topsoil available for salvage was reduced due to the large boulders. During reclamation activities the boulders will be returned to the slope surface and placed to resemble the surrounding topography.

The soils report for G-22 including the access was prepared by Ryan Sweetwood (Attachment 2-1). The soil text pits for well site G-22 and access road (SP10 thru SP13) provided two soil series, soil pits SP-11 and SP-12 closely matched the soil series designated in the NRCS, Web Soil Survey. SP-10 has a profiles not characteristic of Rottulee Series, the physical and chemical properties match more closely to the Stubbs Series.

223 Soil Characterization

The topsoil evaluation described in this chapter was performed by Daniel M. Larsen, Professional Soil Scientist and Dean Stacy, NRCS Range Management Specialist in accordance with the standards of the National Cooperative Soil Survey. The topsoil evaluation for Wells G-18, G-19, G-31 and the Access Road were performed by Craig Clement, P.G. and Dean Stacy, NRCS Management Specialist in accordance with the standards of the National Cooperative Soil Survey and using the USDA/NRCS WEB Soil Survey utility.

The topsoil evaluation for well G-22 and access road was performed by Ryan Sweetwood, his resume is included in the report for the G-22 well and access road in Attachment 2-1.

TABLE 2-2 (Continued)

Topsoil Stockpile Dimensions*

Well No.	Description	Length (ft)	Width (ft)	Height (ft)
G-15	Pad	90	90	19
G-16	Pad	100	80	12
G-17	Pad	85	55	10
G-18	T-10	118	80	20
G-19	Lower Road	235	8	5
	Pad	140	52	35
G-22 and Access Road	Pad & road	100	80	15
G-31	T-8	85	67	7
	T-9	128	100	13
Access Road	T-2	40	90	8
	T-3	108	95	11
	T-4	12	45	5
	T-5	95	110	13
	T-6	95	138	14
	T-7	110	150	21

* The height represents the elevation difference between the lowest point and highest point of the topsoil stockpile. The topsoil thickness will vary with the slope of the native ground surface. When stored on steep slopes the topsoil thickness will be much less than the estimated height of the stockpile.

See Section 234.200 for detailed information on the topsoil stockpile(s).