NYE County NWRPO -Technical Data Report

RID No.	Transmitter	Org.	Receiver	Org.	Key word1	Title/Description
7576.00	Walker	NWRPO	QARC	Nye	13P, 16P,	Phase V Geologic Cross Section A-A'

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Doc. Date 12/11/2008 **General Doc. Type** QA Program Doc **Keyword2** EWDP V

Entry Date 12/11/2008 **Detailed Doc. Type** Map **Keyword3** cross section

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Title of Data Phase V Geologic Cross Section A-A'

Description of Data Geologic cross section compiling and projecting geologic information data from EWDP wells (NC-EWDP-13P, 27P, 16P, 28P, 24P and 22SA) and geologic inferences (thickness and structural pattern) from geophysical datasets (magnetics and gravity). Section is a general interpretation of structural-stratigraphic relationships derived from EWDP drilling and geophysical studies. Cross section consists of an AutoCAD 2007 vector graphics file ("Phase V section A-A'.dwg"). The section graphic is also converted to a high resolution Adobe Acrobat file (Phase V Section A-A'.pdf").

Data Collection Method Product compiled from existing datasets. Geological information from summary lithologic logs. Borehole location data collected by GPS surveys. Water level data from routine water level sounding data. Geophysical data from USGS/YMP studies including airborne magnetics and gravity surveys with inversions.

Data Location(s) N/A

Data Collection Period(s) 12/2008

Data Source(s) Borehole survey data: RIDs 5785, 5047, 6027, 6999.
Summary Lithologic Logs: 13P (RID 7281), 27P (RID 6708), 16P (RID 6705), 28P (RID 6709), 24P (RID 6707), 22SA (RID 5472).
Water table (water level) data: RID 7421.

Data Censoring None

Data Processing The cross section line (A-A') was projected through wells NC-EWDP-16P and 24P. Borehole data from wells 13P, 27P, 28P and 22SA were projected on to a plane defined by A-A' (see Figure 1.4-1 in the Phase V Drilling Report). No borehole deviation data was used in the construction of the section. Boreholes were drawn as vertical lines. Thicknesses of Miocene volcanic groups were interpreted based on intercepts in EWDP boreholes, the relationships in the Phase IV section B-B' and cross section B-B' of Potter, et al (2002), Geologic Map of the Yucca Mountain Area, Nye County, Nevada. The depth to Pre-Cenozoic (Paleozoic rocks) was derived from gravity inversions of Blakely and Ponce, 2001 with steeper (and generally deeper) gravity gradients interpreted as early growth faults that are buried by Paintbrush Group members, that are subsequently cut and/or reactivated by steep "late" faults interpreted primarily from aeromagnetic data (Blakely et al, 2000; Perry et al., 2005). A preliminary version of this section was presented as a talk entitled "Update to Conceptual Cross-Sections and Associated Interpretations" at the Devils Hole Workshop in May 2008. Approximate water table surface was drawn based on recent water level soundings. The topographic profile was drawn as a simplified surface based on topographic maps.

Data Limitations Cross section presents a generalized geologic interpretation of data from many varied sources. As such, it is meant to illustrate only general geologic relationships. Alternative interpretation or conceptualizations are possible and likely based on the limited subsurface data available. The section presents a geologic model that places Paintbrush tuffs in an unconformable relationship on thinned and possible eroded Crater Flat and pre-Crater Flat units across much of the southeastern section of Yucca Mountain and western Fortymile Wash. This relationship is expressed only in

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boreholes 28P and possibly 24P. Subsequent data acquisition (drilling and geophysics) will confirm or refute this model. A discussion of the geologic and hydrologic significance of sectional interpretations is contained in the Phase V Drilling Report. The difference between "depth to Pre-Cenozoic" and the base of Tvo/Ts rocks shown for the section line A-A' at the 28P location may be attributed to the distance, approximately 5,100 ft, across which drill hole data is projected. The line of projection of the drill hole data is nearly perpendicular within a south-southwest plunging basin based on gravity data. Unit thickness of the Crater Flat volcanics as shown on the CJS footwall thicken in the area the A-A' section relative to the 28P location, but the 28P data is projected to demonstrate the variability of preservation of Crater Flat units in the basin, probably at the thinnest section of Crater Flat volcanic units.

Governing QA Docs. QAP-3.2, Rev. 3

Frequency of Transmittal As required

Direct Questions About Data To- NWRPO QA Records Center