NYE County NWRPO -Technical Data Report

RID No.	Transmitter	Org.	Receiver	Org.	Key word1	Title/Description
7675.00	Kryder	NWRPO	QARC	NWRPO	29P	Raw and processed seismic reflection data collected near NC-EWDP-29P.

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Doc. Date 9/5/2007 **General Doc. Type** QA Program Doc **Keyword2** Seismic

Entry Date 8/11/2009 **Detailed Doc. Type** Data Packet **Keyword3** Reflection

Data Originator Preparer Levi Kryder

Title of Data Raw and processed seismic reflection data collected near NC-EWDP-29P.

Description of Data

One cd containing the raw seismic reflection data collected from 8/25/07 to 9/5/07 near NC-EWDP-29P. These data were collected by NWRPO personnel in accordance with Test Plan TPN-12.1 to determine the utility of the seismic reflection method for imaging the contact between alluvium and bedrock in the area. Also included on cd are GPS locations for the shot and receiver points, photos detailing the seismic work, processed and interpreted final stacked seismic sections, summary spreadsheet of seismic locations on the Main Line, a copy of the operators manual for the Geometrics NZ-II seismograph, and scanned pages 1 through 19 of Scientific Notebook #176. Each of these items are described in more detail below.

Raw data - Data files for the "main line" are in SEG-2 format, and are numbered sequentially from "151.dat" to "503.dat". More information regarding each of these files is listed in "Seismic Locations Summary Main Line.xls". Included in the Raw Data folder are LogFiles which describe test parameters for each raw data file.

GPS Locations - Folder contains one Excel file (Seismic locations GPS.xls) that contains the shot and receiver locations for the main line and the south line. GPS data were collected with a Trimble GeoXH GPS unit belonging to University of Texas, Austin and therefore was not collected under technical procedure TP-9.8. GPS data is for information only.

Processed and Interpreted - Folder contains six stacked sections as follows: Final Stack with FK Coherent Noise Reduction showing the interpreted alluvium/tuff interface, a fault, and wells 19D and 29P (MainFKhorizflt.pdf); Final Stack with FK Coherent Noise Reduction showing the interpreted alluvium/tuff interface and wells 19D and 29P (MainFKhoriz.pdf); Final Stack with FK Coherent Noise Reduction showing wells 19D and 29P (MainFKuninterp.pdf); Final Stack with FK Coherent Noise Reduction and FX Decon showing wells 19D and 29P (MainFKFXuninterp.pdf); Final Stack with FK Coherent Noise Reduction and FX Decon showing the interpreted alluvium/tuff interface and wells 19D and 29P (MainFKFXhoriz.pdf); and Final Stack with FK Coherent Noise Reduction and FX Decon showing the interpreted alluvium/tuff interface, a fault, and wells 19D and 29P (MainFKFXhorizflt.pdf). This folder also contains the PowerPoint presentation MainLineInterpretation.ppt, which illustrates the steps involved with processing the data.

Photos - Miscellaneous digital photos documenting data collection.
Seismic Locations Summary Main Line - Contains a summary of seismic data collected by location, line, filename, and day.
GeodeNZES-3000ManualRevK4.pdf - This file contains a manual for the Geometrics NZ-II seismograph used to collect data during the survey.
Scanned Scientific Notebook pages - Scientific notebook 176, pages 1 - 19.

Data Collection Method

Data collected during surface-based geophysical testing near NC-EWDP-29P.
Seismic data was collected using a portable stand-alone seismic module. Seismic energy source used was a truck-mounted vibrator for Main Line data files 151.dat through 503.dat. Data for all other data files was acquired by using a metal plate and hammer seismic source.

GPS data - Geographic location coordinates collected at each geophone station

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Data Location(s) Near NC-EWDP-29P

Data Collection Period(s) 8/25/07 to 9/5/07

Data Source(s) Seismic data were collected using a Geometrics NZ-II seismograph.

GPS data were collected using a Trimble GeoXH GPS (belonging to the University of Texas, Austin [UTA]). Note that the internal GeoXH antenna was used during data collection; no external antenna was present.

Supporting Data Scientific notebook 176, pages 1 - 19

Data Censoring None

Data Processing Seismic data - Data files for the Main Line and Tpt Hill (data files 151.dat through 476.dat and 477.dat through 503.dat respectively) were processed by Precision Interactive Processing, Inc., of Denver, Colorado using ProMAX software, and interpreted by Norwest Questa Engineering using Landmark Kingdom software. All other files have not been processed and interpreted.

GPS data - GPS data were post processed and exported using Trimble Pathfinder Office software by UTA personnel. Exported location data were used during the seismic interpretation to generate surface maps showing shot and receiver locations.

Data Limitations The data collected are considered to be of limited utility. There are a number of features evident in the data, but no obvious contrasts in properties (i.e., reflections) were recorded. This may be to a combination of geologic conditions, a poor signal to noise ratio, and the short offsets used in the acquisition procedure between the seismic source and the geophones. Attempts to reduce some of the signal noise were successful; however, even with the suppression of the noise a reflection signal is not clearly imaged. Data acquisition for the Main Line began on 8/28/07 using 40 Hz geophones, but it was discovered that use of 14 Hz geophones resulted in a higher signal to noise ratio, as judged by looking at the seismograph display in the field. Therefore only 14 Hz geophones were used during the rest of the Main Line acquisition period. A possible Alluvium/Tuff contact has been interpreted, however, the reliability of this pick is questionable due to the data quality.
Data in SEG-2 format require specialized geophysical software to read them.

Governing QA Docs. TPN-12.1 Rev. 0 and TP-9.8 Rev. 1

Frequency of Transmittal As needed

Direct Questions About Data To - NWRPO QA Records Center