

NYE County NWRPO -Technical Data Report

RID No.	Transmitter	Org.	Receiver	Org.	Key word1	Title/Description
7339	Gilmore	NWRPO	QARC	Nye	10P	NC-EWDP-10P Alluvium Core and Cuttings and Non-Alluvium Drill Cuttings Logging Forms
Doc. Date	12/20/2007	General Doc. Type	QA Program Doc	Keyword2	core	
Entry Date	12/20/2007	Detailed Doc. Type	Alluvium/Non-Alluvium Logging	Keyword3	cuttings	
Data Originator Preparer	Kathy Gilmore					
Title of Data	NC-EWDP-10P Alluvium Core and Cuttings and Non-Alluvium Drill Cuttings Logging Forms					
Description of Data	Drill cuttings logging reports exported from drilling database (NC Drilling v3.6.mdb) in .pdf format [Alluvium Logging Form (0 ft. to 787.5 ft.) and the Non-Alluvium Drill Cuttings Logging Form (787.5 ft. to 910 ft. open hole) from 9/10/01 to 12/19/01].					
Data Collection Method	Samples collected at 10P during casing advance drilling to 791.8 ft. and open hole rotary drilling to 910.5 ft. with Ingersoll-Rand TH-75W drill rig.					
Data Location(s)	NC-EWDP-10P					
Data Collection Period(s)	9/10/01 to 12/19/01					
Data Source(s)	Visual field description per TP-8.0, Field Logging and Handling of Borehole Samples, Revision 2, 06/01/01, Section 5.5. Supporting Data: RIDs 4841, 5132, 5312, 6756.					
Data Censoring	Drive core sample 10-3 (347.74 ft. - 349.06 ft.) drilled 11/5/2001 had been stored in container under YMP-SMF lock. The core barrel shoe was ground off but the core barrel was also egg shaped on bottom. This sample was covered with double plastic covers on each end; however, moisture content is questionable. The sample has also been subjected to freezing and thawing conditions					
Data Processing	Data from field logging forms were entered into the drilling database, reviewed, and transmitted to the QARC.					
Data Limitations	<p>The following data omissions from log columns are listed with the following comments:</p> <p>DRIVE CORE SAMPLING: CORE BARREL 4-inch inside diameter by 30-inch recoverable length.</p> <p>a) 10-1, 57.83 ft. to 60.04 ft. b) 10-2, 167.49 ft. to 169.91 ft. c) 10-3, 347.74 ft. to 349.06 ft. (see data censoring) d) 10-4, 665.37 ft. to 668.16 ft. (tool lost in hole 12/1/2001, recovered 12/13/2001, and processed 12/14/2001) e) 10-5, 702.16 ft. to 704.85 ft. f) 10-6, 742.5 ft. to 744.8 ft.</p> <p>HOLE DIAMETERS:</p> <p>a) 0 ft. to 304 ft. = 10 inch b) 304 ft. to 480 ft., reamed to 7 7/8 inch c) 480 ft. to 791.8 ft., 7 1/8 inch (downhole hammer with eccentric button bit) d) 791.8 ft. to 910.5 ft., 5 7/8 inch (mill tooth tricone roller bit)</p> <p>SAMPLING TYPE:</p> <p>a) Drilling dry from 0 ft. to 275 ft. b) Drilling wet from 275 ft. to 295 ft. (injected water for improved sample recovery; hole moist possibly due to perched water from mud rotary hole 10S approximately 62 ft. south) c) Drilling dry from 295 ft. to 590 ft. d) Drilling wet from 590 ft. to 910.5 ft. open hole (water table @ ~ 580 ft.)</p> <p>SAMPLE WEIGHTS / VOLUME:</p>					

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a) Samples 247.5 ft. to 252.5 ft. contaminated with oil (compressor filter failed, possibly from auxiliary compressor connection on hole NC-EWDP-18P).

SAMPLE RECOVERY:

a) 250 ft. to 255 ft. due to moisture causing samples to stick on inside of casing and drill rods.

b) 290 ft. to 292.5 ft., reduced cuttings volume 57.5'-60.0', 167.5'-170.0', 347.5'-350.0', 665.0'-667.5', 702.5'-705.0', and 742.5'-745.0' due to extraction of drive core.

Problems were encountered with lifting drill cuttings (especially the coarse fraction of alluvium) using conventional circulation in this borehole. The impact of these problems and other factors affecting the grain size distribution of alluvium drill cuttings are described below following a brief discussion of the limitations of preliminary field estimates of grain size distribution.

The Alluvium Logging Form includes preliminary field estimates of grain size distribution for the approximately 787.5 ft of alluvium penetrated. The estimates are made on every 2.5 and 5 ft sample interval and used for preliminary layering information and general planning of wells and screen intervals prior to receipt of laboratory data. These field estimates of grain size distribution should not be considered representative of the geologic samples. However, grain size distribution data determined by laboratory analysis on every second 2.5 ft sample and every 5 ft sample interval are considered representative of the geologic samples. A comparison of preliminary field estimates with laboratory measurements of grain size distributions of alluvium geologic samples indicates reasonable correspondence.

In addition, the grain size distribution of all alluvium geologic samples are considered disturbed to some extent from in situ conditions as a result of both drilling and sample handling related factors. Major disturbing factors include: 1) sample degradation by the mechanical action of the rotary and hammer bits; 2) sample contamination due to hole erosion mixing of drill cuttings in the air stream between the drill bit and the cyclone separator; and 3) winnowing of fines at the cyclone collector during dry drilling; 4) loss of a portion of the fine fraction (and a relative increase in the coarse fraction) when attempting to homogenize saturated zone samples containing too much water. In addition, minor disturbance may have been introduced into samples by: 1) gravel accumulating on the rotating splitter during wet drilling; 2) unsaturated zone sample homogenization process and sample splitting; 3) loss of fines during pumping and siphoning of clear water from wet bucket samples; and 4) a very minor introduction of wind-blown fines during sample drying.

In summary, grain size distribution of alluvium drill cuttings in this borehole are considered significantly disturbed from in situ conditions due to a number of drilling and sample handling related factors. In addition, other parameters in the Alluvium Logging Form related to grain size distribution such as plasticity, grading, grain shape, cementation, and HCl reaction may also not be representative of in situ conditions. As a result of these limitations, the alluvium data in this borehole, including the Alluvium Logging Form and laboratory hydraulic parameter measurements are censored and no Summary Lithologic Log will be produced.

The above alluvium sample disturbing factors (including drilling and sample handling factors) are either not significant or are less significant in NC-EWDP-10SA drilled by small diameter reverse circulation methods at this same site. The alluvium data from NC-EWDP-10SA are not censored and should be considered representative (to the extent possible) of in situ conditions.

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**Governing
QA Docs.** TP-8.0, Field Logging and Handling of Borehole Samples, Revision 2, 06/01/01, Section 5.5

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**Frequency
of
Transmittal** once per borehole

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**Direct Questions
About Data
To-** NWRPO QA Records Center