

# NYE County NWRPO -Technical Data Report

RID No.	Transmitter	Org.	Receiver	Org.	Key word1	Title/Description
7408	Gilmore	NWRPO	QARC	Nye	22PA	NC-EWDP-22PA Alluvium Logging Forms

Doc. Date 10/29/2007    General Doc. Type QA Program Doc    Keyword2 cuttings

Entry Date 1/30/2008    Detailed Doc. Type Alluvium/Non-Alluvium Logging    Keyword3 drive core

Data Originator Preparer Kathy Gilmore

Title of Data NC-EWDP-22PA Alluvium Logging Forms

Description of Data Drill cuttings and drive core logging reports exported from drilling database (NC Drilling v3.6.mdb) in .pdf format (Alluvium Logging Forms from 1/15/02 to 2/5/02).

Data Collection Method Samples collected during reverse circulation drilling of 22PA. Borehole drilling and sampling, and borehole depth control procedures. Logs were reviewed for accuracy of field data.

Data Location(s) NC-EWDP-22PA

Data Collection Period(s) 1/15/02 to 2/5/02

Data Source(s) Borehole drilling and sampling, and borehole depth control procedures. Logs were reviewed for accuracy of field data. Samples collected at 22PA during casing advance drilling to 780 ft. with Ingersoll-Rand TH-75W drill rig.

Supporting Data: RIDs 4969, 5128, 5530, 6756.

Data Censoring Particle Size Distribution data and USCS Group Name on Alluvium Logging Form. Water Production data for interval 495-780 ft., data recalculated in RID 5530.

Data Processing Data from field logging forms were entered into the drilling database, reviewed, and transmitted to the QARC.

Data Limitations NC-EWDP-22PA was drilled with a percussion hammer casing advance rig and used a 7-7/8 in. mill tooth tricone rock bit inside 9-5/8 in. drill casing with a 10 in. casing shoe for the first 358 ft. From 358-707 ft. a 6 5/8 in. casing with 7 1/4 in. downhole hammer bit was used. Within the drill casings, conventional air circulation was used to lift the drill cuttings. 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 780 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.

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.

The following data omissions from log columns are listed with the following comments:

DRIVE CORE SAMPLING: CORE BARREL 4-inch inside diameter by 30-inch recoverable length.

a) 22-1, 391.09 ft. to 394.01 ft.

b) 22-2, 522.14 ft. to 524.26 ft.

c) 22-3, 552.74 ft. to 549.99 ft.

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- d) 22-4, 572.33 ft. to 574.4 ft.
- e) 22-5, 669.61 ft. to 671.87 ft.
- f) 22-6, 709.23 ft. to 711.09 ft.
- g) 22-7, 740.5 ft. to 742.60 ft.
- h) 22-8, 760.3 ft. to 760.59 ft. (but no recovery)

**SAMPLING TYPE:**

a) Drilling dry from 0 ft. to 495 ft. Samples moist from 260 ft. to 280 ft. possibly due to perched water from mud rotary hole 22S approximately 60 ft. south.

b) Drilling wet from 495 ft. to 780 ft. (water table @ ~470')

**SAMPLE RECOVERY:**

- a) Loss of fines and sample amount due to wind for 0 ft. to 2.5 ft. and 167.5 ft. to 197.5 ft.
- b) Loss of fines or clay due to overflowing or drained buckets for 492.5 ft. to 500 ft., 512.5 ft. to 515 ft., and 552.5 ft. to 555 ft.
- c) Poor cuttings sample recovery from 670 ft. to 675 ft., 710 ft. to 720 ft., and 725 ft. to 775 ft.
- d) Smaller samples in overdrilled drive core section above.

**SAMPLE DESCRIPTION:**

a) Difficulty in determining cementation and/or grain size due to mechanical degradation by bit for 150 ft. to 225 ft. and 300 ft. to 367.5 ft.

**SAMPLE DENSITY:**

a) Not measured, except for volumes, due to wet samples for 495 ft. to 780 ft.

**Governing  
QA Docs.**

TP-8.0, Field Logging and Handling of Borehole Samples, Revision 3, 09/25/01, Section 5.5

**Frequency  
of  
Transmittal**

once per borehole

**Direct Questions  
About Data  
To-**

NWRPO QA Records Center