Well Construction Diagram

RNPU 197-3A2H

Location: SW SE Sec 3, T1S, R97W
Footage: 762' FSL & 2220' FEL
Elev: Graded Pad 6451', KB 6478'
Rio Blanco County, Colorado

20" Conductor set at 120'. Drill out w/ 17 1/2" bit w/ WBM 9.3 ppg

Set 13 3/8" 68 #/ft J-55 BTC surface casing at **4,950 ft**

Lead Stage 2 Cement: Top cmt 0 bot cmt 1200 ft — 400 sks Class G light, fluid loss, & free water control
Yield: 2.08 cuft/sx; Density: 12.5 ppg

Tail Stage 2 Cement: Top cmt 1200 bot cmt 2200 ft — 580 sks Class G, fluid loss,free water control, & retarder
Yield: 1.21 cuft/sx; Density: 15.6 ppg — **Calculation based on 17-1/2" hole size**

Lead Stage 1 Cement: Top cmt 2200 bot cmt 4450 ft — 750 sks Class G light, fluid loss, & free water control
Yield: 2.08 cuft/sx; Density: 12.5 ppg

Tail Stage 1 Cement: Top cmt 4450 bot cmt 4950 ft — 290 sks Class G, fluid loss,free water control, & retarder
Yield: 1.21 cuft/sx; Density: 15.6 ppg — **Calculation based on 17-1/2" hole size**

12 1/4" hole size. Drilled with WBM w/ 10.2-10.5 ppg

9 5/8" 40#/ft P-110 LTC csg: **11,000** ft MD **11,000** ft TVD

Lead Cement: Top cmt 4450 bot cmt 10500 ft — 910 sks Class G light, fluid loss, & free water control
Yield: 2.08 cuft/sx; Density: 12.5 ppg

Tail Cement: Top cmt 10500 bot cmt 11000 ft — 130 sks Class G, fluid loss,free water control, & retarder
Yield: 1.21 cuft/sx; Density: 15.6 ppg — **Calculation based on 12 1/4" hole size**

8 3/4" hole size. Drilled with WBM w/ 10.2-10.5 ppg

7" 32 #/ft P-110 LTC csg: **12,258** ft MD **11,862** ft TVD

Tail Cement: Top cmt 10,500 bot cmt 12,258 ft — 220 sks Class G, fluid loss,free water control, & retarder
Yield: 1.21 cuft/sx; Density: 15.6 ppg — **Calculation based on 8 3/4" hole size**

Lateral #1: 6" hole drilled with 10.5 ppg WBM

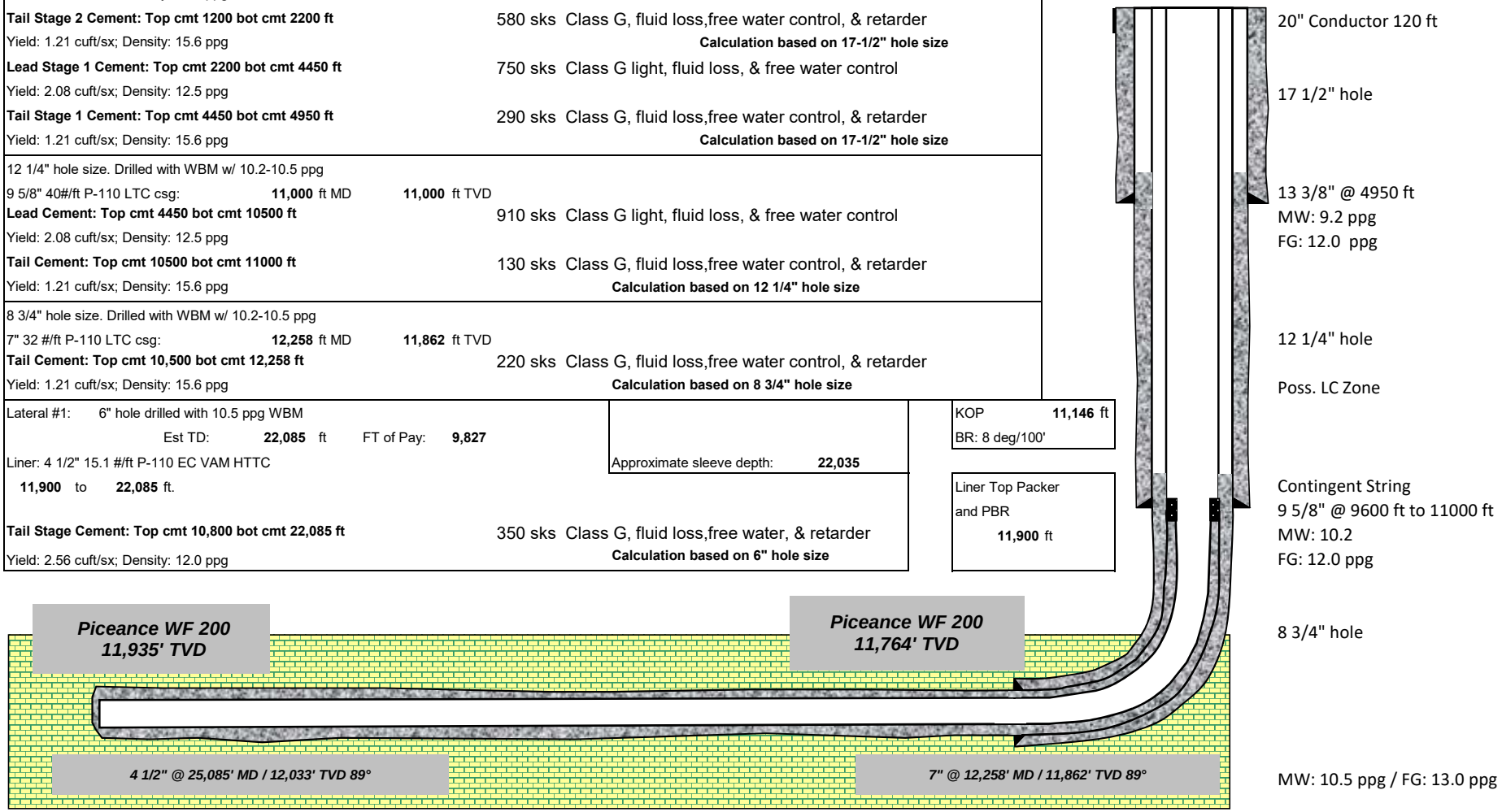
Est TD: **22,085** ft FT of Pay: **9,827**

Liner: 4 1/2" 15.1 #/ft P-110 EC VAM HTTC

11,900 to **22,085** ft.

Approximate sleeve depth: **22,035**

Tail Stage Cement: Top cmt 10,800 bot cmt 22,085 ft — 350 sks Class G, fluid loss,free water, & retarder
Yield: 2.56 cuft/sx; Density: 12.0 ppg — **Calculation based on 6" hole size**

KOP **11,146** ft
BR: 8 deg/100'

Liner Top Packer and PBR
11,900 ft