

C LISCO #14-21

QC MJH

API # 001-07981**Loc. #320087****FIELD NAME** SONAR - #77635**Spud Date** 10/20/1981**Basin** DENVER - JULESBURG**Location** NENW 14 3S 64W 6**Elevation GL (ft)** 5425**Elevation KB (ft)** 5435**TD (ft)** 8210**PBTD (ft)** 7937**Formation Tops**

DENVER - 103'

UPPER ARAPAHOE - 645'

LOWER ARAPAHOE - 893'

FOX HILLS TOP - 1400'

FOX HILLS BASE - 1667'

Base of Upper Pierre - 2095'

No SUSSEX Fm Production w/in 1 mi.

No SHANNON Fm Production w/in 1 mi.

NIOBRARA - 7123'

FORT HAYS - 7338'

CARLILE - 7503'

GREENHORN - 7578'

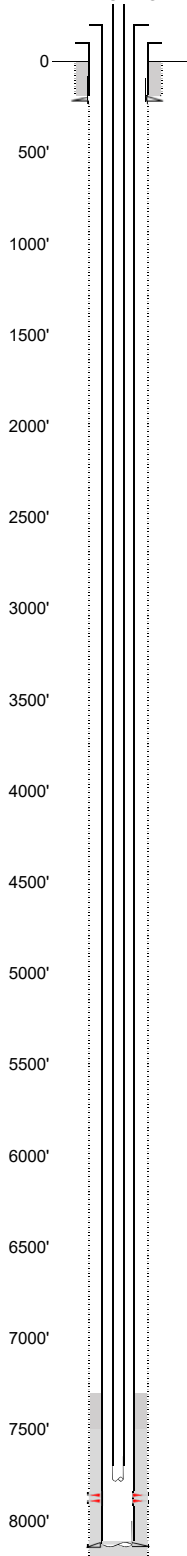
BENTONITE - 7787'

D SAND - 7882'

J SAND - 7922'

SKULL CREEK - 8043'

DAKOTA - 8082'

EXISTING**Existing Casing and Cement Coverage**

SURF: Size: 8.625", Hole Size: 12.25 in.
 Depth: 209 ft., Weight: 24
 Cement: 200 sx, Top: 0 ft., Method: Vis

Deepest DWR w/in 1 mi. = 877'

UPPER ARAPAHOE - 645'

LOWER ARAPAHOE - 893'

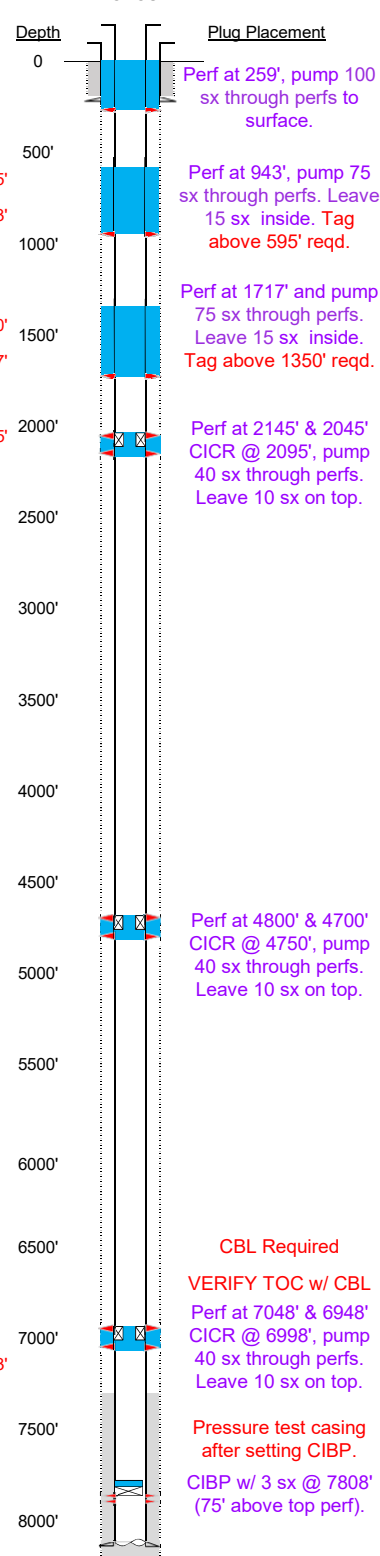
FOX HILLS TOP - 1400'

FOX HILLS BASE - 1667'

Base of Upper Pierre - 2095'

1ST, Size: 5.5", Hole Size: 7.875"
 Depth: 8128', Weight: 15.5
 Cement: 200 sx, TOC: 7330', Method: CBL

2-3/8" tubing set at 7777'
 TOC = 7330' (CBL)
 D Sand Perfs 7883' - 7889'
 PBTD (ft) 7937'
 TD (ft) 8210'

PROPOSED**Plug Placement**

Perf at 259', pump 100
 sx through perfs to
 surface.

Perf at 943', pump 75
 sx through perfs. Leave
 15 sx inside. Tag
 above 595' reqd.

Perf at 1717' and pump
 75 sx through perfs.
 Leave 15 sx inside.
 Tag above 1350' reqd.

Perf at 2145' & 2045'
 CICR @ 2095', pump
 40 sx through perfs.
 Leave 10 sx on top.

Perf at 4800' & 4700'
 CICR @ 4750', pump
 40 sx through perfs.
 Leave 10 sx on top.

CBL Required
 VERIFY TOC w/ CBL
 Perf at 7048' & 6948'
 CICR @ 6998', pump
 40 sx through perfs.
 Leave 10 sx on top.

Pressure test casing
 after setting CIBP.
 CIBP w/ 3 sx @ 7808'
 (75' above top perf).