Granite Wash Casing Profile

Texas Panhandle (District 10)
Western Oklahoma
“Zone of Critical Cement”
Bottom 20% of casing string with a minimum of 300 ft
At multiple stage cementing tool – immediate 300 ft above tool

Cement Blend Requirements
Cement in the “Zone Of Critical Cement” must meet and/or exceed a compressive strength or 500 psi before drill out and 1,200 psi in 72 hrs
Cement above the “Zone of Critical Cement” may contain extenders, however the cement must have a minimum compressive strength of 350 psi in 24 hrs after placement. Also the slurry weight cannot be less than 12.7#/gal with an API free water of no more than 6 mls per 250 mls of cement according to API RP 10R test procedure
Surface Casing Regulations

Centralizers

Surface casing string shall be centralized at the casing shoe.
If a multi-stage cementer is used, above and below the tool.
Plus 100 ft below the base of the usable quality water, a centralizer shall be placed every fourth joint to the ground surface or to the bottom of the cellar.

“Operators must notify the District Office in the event that the cement does not circulate to the ground surface.”

“A temperature survey or cement bond log well be required in the event that the cement is not circulated to the ground surface.”

District 10 Office is located in Pampa, Texas
Texas Railroad Commission - District 10 – Jan 1996
Surface Casing Regulations

Texas Railroad Commission - District 10 – Nov 2005

Maximum casing depth will not exceed 3500 ft
Surface casing shall be set before drilling into known shallow oil and gas formations.

“Zone of Critical Cement”
Bottom 20% of casing string with a minimum of 300 ft
From multiple stage cementing tool to the surface

Cement Blend Requirements
Cement in the “Zone Of Critical Cement” must meet and/or exceed a compressive strength or 500 psi before drill out and 1,200 psi in 72 hrs
Cement above the “Zone of Critical Cement” may contain extenders, however the cement must have a minimum compressive strength of 350 psi in 24 hrs after placement. Also the slurry weight cannot be less than 12.7 #/gal with an API free water of no more than 6 mls per 250 mls of cement according to API RP 10R test procedure
Excess Cement

“Operators are encouraged to use 150% excess is calibration of surface hole is not determined”
Surface casing below 2500 ft will require a multiple stage cementing tool at least 50 ft below potable water, cement must be circulated to the surface

Centralizers
Centralize the shoe
Centralize above and below the multiple stage cementing collar
Plus 100 ft below the base of the usable quality water, a centralizer shall be placed every fourth joint to within 140 ft of the ground surface

“Operators must notify the District Office in the event that the cement does not circulate to the ground surface”

“A temperature survey or cement bond log well be required in the event that the cement is not circulated to the ground surface”
Texas Panhandle Vertical Well

Intermediate Casing
- 9 5/8” casing set above the Brown Dolomite
- Cemented to the surface, single stage

Production String
- Casing run to total depth
- Cemented across the productive zones of interest
- 2 stage procedure to place cement across the Brown Dolomite interval
- Optional single stage cementing procedure using ultra light cement slurry to place cement from the total depth to above the Brown Dolomite interval

Productive Interval
Intermediate Casing
9 5/8” casing set in the Penn Shale, below the Brown Dolomite; Cemented to the surface, single or two stage Kick Off Point – Below the Cleveland and above the Oswego

Production String - Without the 7” casing string
Horizontal section cemented to place the top of the cement +/- 500 ft above the Kick Off Point
Cement placed across the Brown Dolomite with a single stage ultra-light cement slurry or two stage cementing process

Productive Interval
Texas Panhandle Horizontal Well

Intermediate Casing
9 5/8” casing set in the Penn Shale, below the Brown Dolomite; Cemented to the surface, single or two stage Kick Off Point – Below the Cleveland and above the Oswego
Optional 7” casing string set through the curve; cemented to +/- 500 ft above the Kick Off Point

Production String With the 7” casing string
Single stage cementing process to place the top of cement +/- 500 ft above the Kick Off Point

Productive Interval
Surface Casing Regulations

Oklahoma Corporation Commission (165:10-3-4c)
Minimum Surface Pipe Depth
“surface casing shall be run and cemented from bottom to top with a minimum setting depth which is greater of:
- Ninety (90) feet below the surface or
- Fifty (50) feet below the base of treatable water”

Maximum Surface Pipe Depth
“Shall not be more than 250 feet below the base of treatable water”

Minimum Cement Setup Time
“The cement behind the surface casing shall set at least eight (8) hours before further drilling.”
Western Oklahoma Vertical Well

Intermediate Casing
- Set to cover low reservoir pressure or lost circulation intervals.
- Cemented to cover the intervals of concern.

Production String or Production Liner
- Casing run to total depth
- Cemented with a “light weight” cement slurry with the TOC inside the intermediate casing string.
- Production liners have a minimum 300 ft overlap and minimum 200 ft of cap cement above the liner hanger.

Productive Interval
Links to State Commissions

- Railroad Commission of Texas
  - RRC: Railroad Commission Rules

- Oklahoma Corporation Commission
  - Oklahoma Corporation Commission-Home