

15A NCAC 05H .1610 WELL INSTALLATION FOR INTERMEDIATE CASING

Intermediate casing shall isolate groundwaters that have not been isolated by the surface casing and isolate flow zones, lost circulation zones, or other geologic hazards in accordance with the following:

- (1) if used to isolate groundwaters, the casing shall be set into competent bedrock to a depth of at least 200 feet below the deepest groundwaters. The casing string shall be cemented from the bottom to a minimum of 100 feet above the top of the shallowest groundwaters;
- (2) if used to mitigate geologic hazards, such as heaving shale, abnormal pressure, annular flow or other potential flow zones, the casing shall be set to a depth appropriate to mitigate the hazard. The casing string shall be cemented from across such hazards and from the bottom to 200 feet above the base of the previous casing string;
- (3) the permittee shall collect correlation logs, core samples, and drill cutting samples to identify groundwaters, zones of formational instability, and competent bedrock to submit to the Department with the submission of Form 12 – Well Drilling Report as required in Rule .1623 of this Section;
- (4) if the intermediate wellbore penetrates one or more potential flow zones, the cement used to control annular gas migration from the potential flow zones shall be designed to comply with API Standard 65-Part 2 "Isolating Potential Flow Zones During Well Construction," which is incorporated by reference, including subsequent amendments and editions. This document may be viewed online for no charge at <http://publications.api.org/>;
- (5) a cement bond log (CBL) for the intermediate casing string shall be completed after cement has reached a compressive strength of 500 psi to demonstrate the cementing operation was completed in accordance with this Rule and to locate casing collars and centralizers. Drilling shall not commence until the CBL is complete;
- (6) if there is a failure to isolate groundwater zones, the permittee shall submit a plan of remediation to the Department for approval and implement such plan by performing remedial operations prior to continuing drilling operations. If the deficiencies cannot be remedied, the oil or gas well shall be plugged and abandoned in accordance with Rule .1618 of this Section;
- (7) a formation integrity test (FIT) shall be completed after drilling out below the base of the intermediate casing, into at least 20 feet, but not more than 50 feet of new formation. The FIT shall be completed in accordance with API Standard 65-Part 2. If the formation fails the FIT, the permittee shall consult with the Department to determine remedial or corrective actions necessary before operations continue; and
- (8) the permittee shall identify the top of the cement and submit a plan of remediation to the Department for approval and implementation if operational parameters, such as fluid returns, lift pressure, and displacement indicate to the permittee inadequate coverage of any flow zones, lost circulation zones, or any strata containing groundwater.

History Note: Authority G.S. 113-391(a)(5)c;
Eff. March 17, 2015.