KNOCK OFF BLIND WELLS – AN INNOVATIVE METHOD TO COMPLETE SINGLE ENDED HORIZONTAL ENVIRONMENTAL WELLS

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Background/Objectives. Horizontal well installation technology has been utilized since the late1980’s for a wide variety of monitoring and remediation activities. The installation methodology consists of two types of well configurations. (1) Continuous or double ended wells – wells completed using methods similar to utility installations having an entry and exit location, with the well materials pulled into the borehole in tension. (2) Single ended or blind wells – wells completed with only an entry location, with the well materials pushed into the borehole in compression. Blind wells have distinct advantages in applications where surface constraints limit the availability of an exit location. However, maintaining an open borehole in certain types of geology (gravels, cobbles, poorly consolidated sands and swelling clays) while pushing well materials into the well bore is risky for the contactor, and that risk is normally transferred to the project as increased cost. Approach/Activities. Utilizing large diameter (5” I.D.) drill pipe and a specially designed drill bit assembly, three inch (3”) and four inch (4”) well screen and casing can be installed inside of the drill pipe. The well materials “lock into” the drill bit, which detaches from the drill pipe and anchors the screen and casing into the end of the borehole. The drill pipe is then pulled from the subsurface, leaving the screen and casing in contact with the formation. This innovated well installation technique is called the “Knock Off” blind well installation method.

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