
From: Hohenstein, John
Sent: Friday, June 28, 2019 2:29 PM
To: Gremminger, Larry; Robert.Simcik@tetrattech.com
Cc: Rocco, Domenic; Styles, Monica L; Staron, Richard
Subject: Comments on HDD 0631 Re-Evaluation Report Submission

All,

The following is from the Department's PG review of the subject Re-Evaluation Report.

General Comments:

- This review considers only the geologic aspects of the HDD analysis.
- All plans, conditions, distances, and information contained in the supplemental HDD analysis submitted pursuant to the "Agreement" are considered to be true and accurate as presented to the Department. The reviewers have relied solely upon the reports and supporting documents sealed by a Licensed Professional Geologist to be true and correct.
- The reviewer(s) of this HDD Analysis are Licensed Professional Geologist(s). Recommendations and/or comments regarding the HDD section should not be portrayed in any way to validate, approve, or certify engineered aspects of this HDD analysis.
- A certain amount of uncertainty and unpredictability is inherent to Horizontal Directional Drilling activities. In the event that unpredicted, unplanned, and unanticipated drilling returns, consequences, or impacts to the waters of the Commonwealth occur, Sunoco Pipeline LP and/or its contractors shall immediately abide by the "Plans" as agreed upon in paragraph 15 of the "Agreement". The burden to prevent such incidents lay solely with SPLP or its contractor(s) regardless of the level of review.
- Pending resolution of the above listed deficiencies and as proposed by SPLP it is recommended that the following best management practices be incorporated as special conditions of the authorization:
 1. SPLP will require and enforce the use of annular pressure monitoring during the drilling of the pilot hole, which assists in immediate identification of pressure changes indicative of loss of return flows or over pressurization of the annulus, managing development pressures that can induce an IR;
 2. SPLP inspectors will ensure that an appropriate diameter pilot tool, relative to the diameter of the drilling pipe, is used to ensure adequate "annulus spacing" around the drilling pipe exits to allow good return flows during the pilot drilling;
 3. A produced water management system will be implemented before drilling begins to handle water in excess of that required for the HDD. If excessive water is generated during the HDD, all wells within a 450-ft radius of the HDD would be monitored periodically to evaluate changes in the water table;
 4. Soil cuttings will be carefully monitored for presence of volatile organics. If olfactory evidence, elevated photoionization detector (PID) readings, or a sheen suggests significant petroleum concentrations, drilling would be suspended until samples can be analyzed. Cuttings would be screened before disposal, as required by law;

5. SPLP will mandate short-tripping of the reaming tools to ensure an open annulus is maintained to manage the potential inducement of IRs;
6. Required monitoring of the drilling fluid viscosity, such that fissures and fractures in the subsurface are sealed during the drilling process;
7. Based upon the behavior of the soil overburden and near subsurface geology during the entry and exit of the pilot phase, casing of the pilot hole can be implemented to control IR where the profile depth is shallow and oversight of the pilot indicates a long-term risk of IR that should be controlled;
8. During the reaming phase, the use of Loss Control Materials can be implemented if indications of a potential IR are noted or an IR is observed, and
9. If LCMs prove ineffective to mitigate loss of returns or IRs, then grouting of the pilot hole may be implemented.

Site Specific Comments of the HDD Analysis:

- **The HDD Hydrogeologic Reevaluation Report (Section 2.2.7) stated that concentrations of magnetite were observed in the Wissahickon Formation at the subject site during drilling of the 16-inch HDD borehole sufficient to affect the steering of the S3-0631 pilot borehole. SPLP should indicate what precautions will be taken to minimize the effects of the magnetite on the steering of the pilot bit so the borehole does not veer off course so that pipe stress allowances are not exceeded, and which may result in a LOC and/or an IR.**

Recommendations:

Based on the technical review of the information submitted in the subject Horizontal Directional Drilling Analysis and the related comments listed above, it has been determined, that to the best of our information, knowledge and belief, the requirements regarding geologic information and geologic analysis detailed in the Corrected Stipulated Order, EHB Docket 2017-009-L ("Agreement"), **have not been met. Therefore, the DEP reviewer(s) are recommending "that the applicant be advised that additional information, identified in the site-specific comments section above be provided in order to complete review of the HDD re-evaluation portion of this site."**

Thanks,

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