

Email from Jim Griswold to James McDaniel XTO 3/7/16 "Continuing groundwater investigation at Hare GC F#1 release site (OCD Case #1036)

James,

I have reviewed the *Action Plan for Groundwater Investigation* dated 2/22/16 and submitted on XTO's behalf by LT Environmental regarding the Hare Gas Com F #1 release site near Bloomfield. The OCD case number for this release incident is 3R-1036. Please include the case number in all future correspondence. This workplan is approved with the following conditions/comments:

The proper order of events for well installation and sampling should be; 1) a well is installed, 2) the well is developed until relatively clear of fine-grained materials, 3) the well is allowed to equilibrate for at least 24 hours, 4) depth to groundwater in the well is gauged, 5) the well is purged, and finally 6) the well is sampled. The workplan otherwise indicates step 1, 4, 2+5 combined, 3, then 6.

The top-of-pipe elevation of each monitoring well must be established with an accuracy of 0.01 feet. The top-of-pipe elevation in feet mean sea level is not mandatory, just relative to one another. The horizontal position of each well must be established with an accuracy of 0.1 feet. The depth to groundwater in each well must be gauged to an accuracy of 0.01 feet. This information will allow for a preliminary verification of the direction of groundwater flow.

Page 2 of the workplan says, "*If laboratory analytical results indicated [sic] groundwater is in compliance with NMWQCC standards, XTO will plug and abandoned [sic] the temporary monitoring wells.*" Existing monitoring well TMW-1, should not be plugged until multiple samples spanning possible seasonal variability indicate concentrations have remained below standards.

Figure 1 provides some soil sample data and says "*ONLY ANALYTICAL RESULTS EXCEEDING NMOC D STANDARDS ARE PRESENTED.*" There are no OCD "standards" for soil. I suppose what was meant are those hydrocarbon concentrations provided in the 1993 guidance. Nonetheless, the data should be provided.

Figure 2 has an arrow indicating a probable direction of groundwater flow toward the south-southwest. However, the proposed two new well locations are both situated south and east of TMW-1. The well farthest south should be shifted toward the west.

To provide complete delineation of the groundwater impact, at least two additional monitoring wells should be installed; one to the west and another to the north of TMW-1.

The OCD District III office in Aztec must be given at least 48 hours notice before drilling and sampling to provide an opportunity to witness the field work.

In addition, there is no absolute requirement that XTO leave the excavation open. If XTO believes all the contaminated soil that can be practically removed has been taken out, you should backfill to mitigate the hazard associated with an open hole. However, you may be leaving source material in place which could delay closure of the groundwater issue. Those soils might need to be dealt with by alternative means.

Please retain this email for your files as no hardcopy will be sent. Thanks.

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