ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Douglas A. Ducey
Governor

Misael Cabrera
Director

via e-mail

November 19, 2015
FPU16-109

Ms. Catherine Jerrard
AFCEC/CIBW
706 Hangar Road
Rome, NY 13441

RE: WAFB – ADEQ Comments – ST012 SEE Weekly Progress Reports Oct. through week ending November 9, 2015

Dear Ms. Jerrard:

Arizona Department of Environmental Quality (ADEQ) Federal Projects Unit (FPU) and ADEQ contractor UXO Pro, Inc. reviewed Steam Enhanced Extraction (SEE) progress report documents from October and November, 2015. General and Specific Comments are provided below.

General Comments

1. The criteria for transitioning from SEE to EBR are provided in Table 4-2 of the May 2014 Work Plan. Two primary criteria are diminishing mass extraction rates (less than 10% of peak rates during SEE) and benzene groundwater concentrations less than 500 ug/L. To date, neither of these criteria has been demonstrated nor have results indicated achieving these criteria in the near future. Until further progress is demonstrated, EBR transition discussion may be premature.

Specific Comments

Comments on Recent Weekly Progress Reports through November 12, 2015
Comments are stated, identified by report time frame, and followed by report excerpts and comment context explanations.

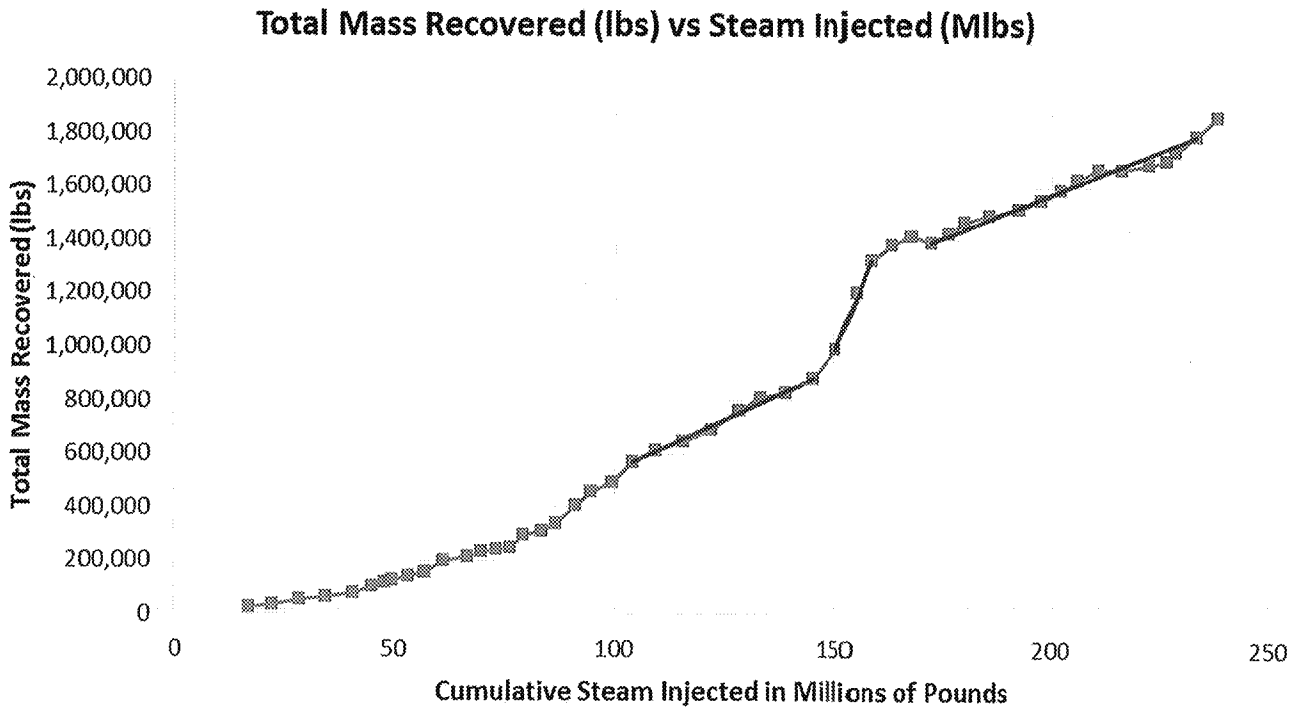
Section 4. Mass Removal

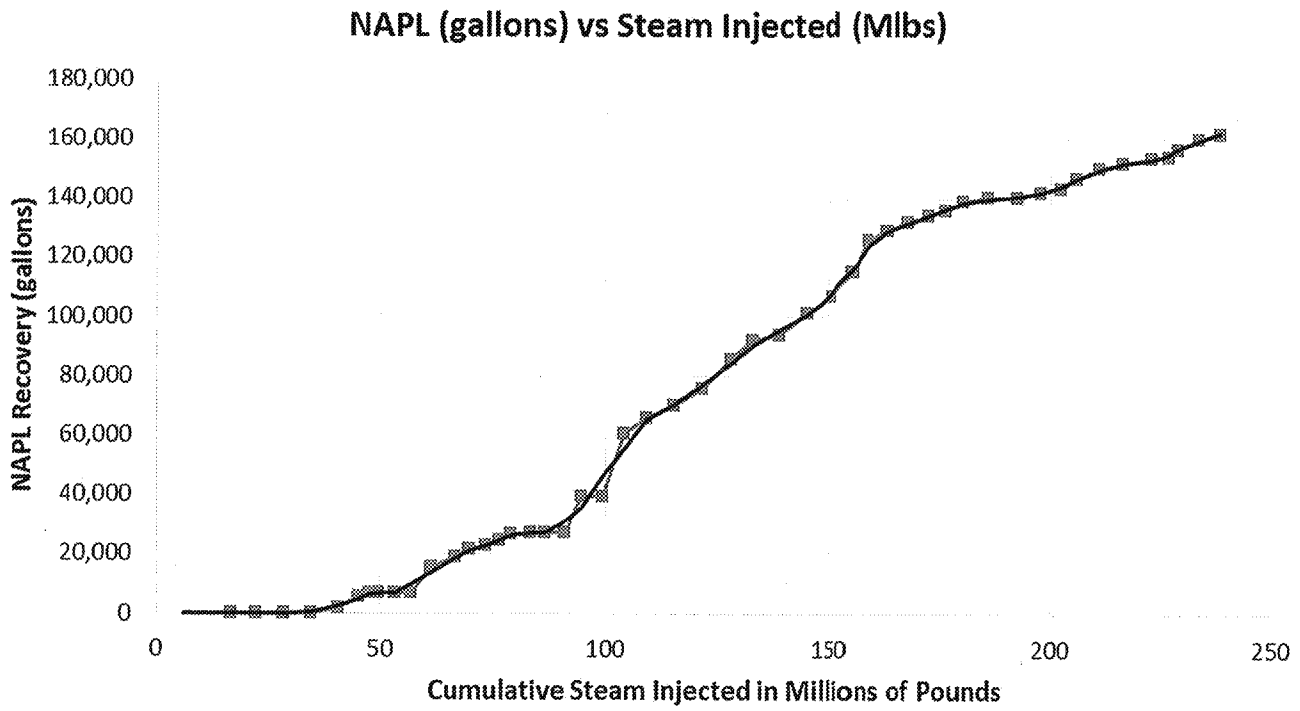
1) The inability to assess mass removal from individual treatment intervals (CZ, UWBZ, LSZ) hampers performance evaluation. (Oct. 2015).
2) The data do not indicate a significant decay in recovery rate after breakthrough. (Oct. 2015)
3) Clarify mass removal rate (Nov. 2015).
4) Verify benzene feedwater concentration (Nov. 2015).

From Oct. 2015 reports (comments 1 and 2):

The cumulative mass removal plotted in Figure 3 shows an inflection point for a decrease in the rate of mass recovery around June 20th coinciding with the initiation of de-pressurization in the LSZ. The inability to assess mass removal from individual treatment intervals (CZ, UWBZ, LSZ) hampers the evaluation of performance.

The total mass recovery is plotted below as a function of cumulative steam injected instead of date. Steam breakthrough in a number of wells may coincide with the jump in mass recovered between the cumulative steam injection of 150 to 160 Mlbs. However, the rate of mass recovery, illustrated by the slope of the red line, is similar in value before and after the jump in mass recovery. The data do not indicate a significant decay in recovery rate after breakthrough. Similarly, the NAPL recovery alone is also plotted as a function of cumulative steam injected instead of date. The NAPL recovery rate remains relatively steady from 160 million pounds of steam and beyond.

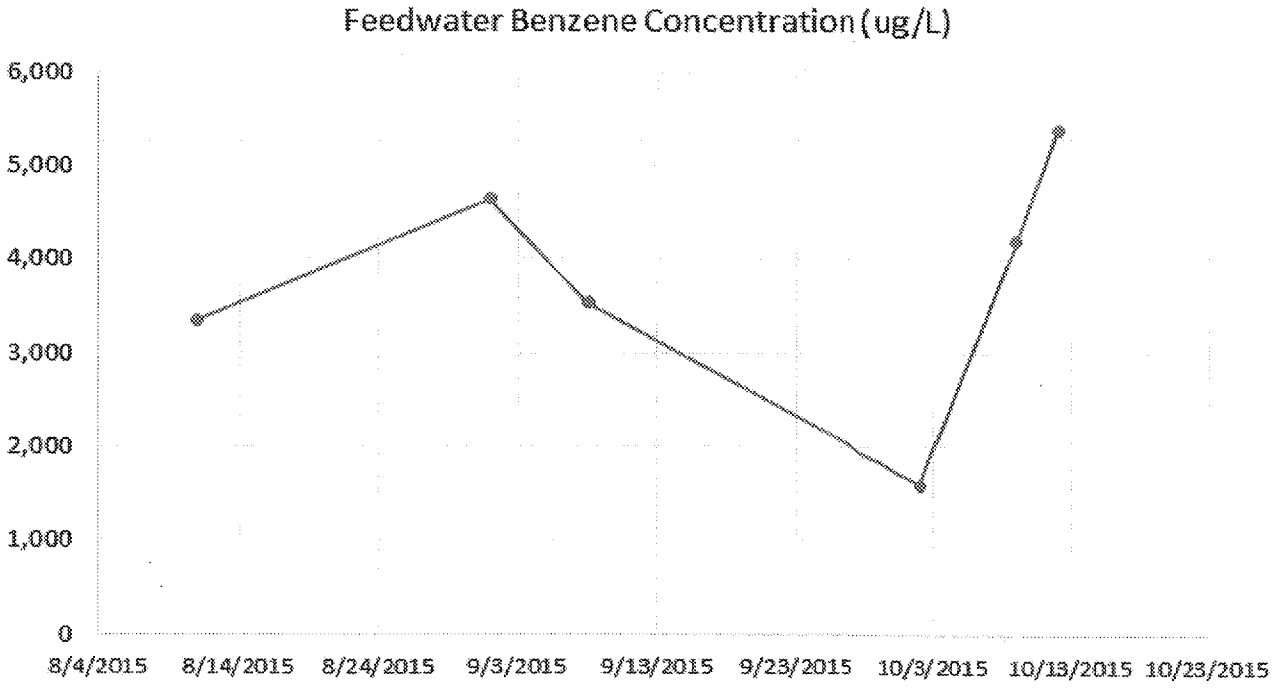




From Nov. 2015 reports (comments 3 and 4):

The reported mass removal rate 3,800 gallons for the week does not appear to have significantly decreased. Consider the reported 0 gallons of NAPL recovery, but the equivalent vapor treatment recovery.

The data do not show a benzene decrease in the extracted groundwater. Consider the benzene in the feedwater to the eductor pumps should be going down since the water is continually recirculated.



Closure

ADEQ may add or amend comments if evidence to the contrary of our understanding is discovered at the referenced location; submitted; if received information is determined to be inaccurate; if any condition was unknown to ADEQ at the time this document was signed; or if complementary regulatory agencies bring valid and proven concerns to our attention.

Thank you for the opportunity to comment. Should you have any questions regarding this correspondence, please contact me by phone at (602) 771-4121 or e-mail miller.wayne@azdeq.gov.

Sincerely,

Wayne Miller
ADEQ Project Manager, Federal Projects Unit
Remedial Projects Section, Waste Programs Division

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