



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

**2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us**



RYAN FLYNN
Cabinet Secretary-Designate
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 5, 2015

Mark Patterson
BRAC Coordinator
Ravenna Army Ammunition Plan
Building 1037
8451 State Route 5
Ravenna, OH 44266

Steve Smith
USACE
CESWF-PER-DD
819 Taylor Street, Room 3B06
PO Box 17300
Fort Worth, TX 76102-0300

**RE: BACKGROUND THRESHOLD VALUES - USE OF PROUCL 5.0
FORT WINGATE DEPOT ACTIVITY, NEW MEXICO
EPA ID# NM6213820974
HWB-FWDA-14-007**

Dear Messrs. Patterson and Smith:

This letter provides response by the New Mexico Environment Department (NMED) to the email received from Mr. David Henry on December 3, 2014, that expressed concern for use of current version of ProUCL (5.0.00) to calculate background threshold values (BTVs) for groundwater at Fort Wingate Depot Activity (FWDA).

The FWDA's expressed concern that the new update of ProUCL, i.e., version 5.0.00, has not been fully vetted; therefore, use of previous version of ProUCL to calculate BTVs would be more appropriate. In support of its concern with use of ProUCL 5.0.00, FWDA submitted a table of BTVs calculated using ProUCL Version 5.0.00. Only the table containing the results was submitted, no ProUCL input or output files or significant narrative accompanied the table. The table was proposed to replace Table 4 from FWDA's Groundwater Background Evaluation for Fort Wingate Depot Activity (Background Report). The table also included a comparison of the

results presented in Table 4 of the Background Report and the results obtained using ProUCL Version 5.0.00.

Of the 99 constituents listed in Table 4 of the Background Report, 27 exhibited different predicted BTV values when ProUCL Version 5.0.00 was used. The ratio of new to old values ranged from 0.86 to 1.82. The average ratio was 1.11. Eight of the ratios equaled or exceeded 1.11; only four constituents had ratios less than 1.00 (i.e., the BTV predicted by ProUCL Version 5.0.00 was less than the value reported in Table 4 of the Background report).

The newly submitted table also lists the basis for the BTV values from Table 4 of the Background Report and those obtained with ProUCL Version 5.0.00. Forty of the BTVs for the 99 constituents were calculated using the same basis. Of the 27 constituents exhibiting different BTV values, 24 show BTVs from different bases. The lowest ratio reported, 0.86, was obtained for a constituent that used the same basis for both BTV calculations.

It appears that use of ProUCL Version 5.0.00 may result in slightly higher background values compared to those presented in the Background Report. However, the validity of the ProUCL Version 5.0.00 values cannot be determined at this time due to a lack of information regarding the input data provided to the software and the output files it produced. While the email thread accompanying the submittal of the new table indicated that the basis for the new values was determined from consideration of the basis of the previous analysis, professional judgment, and ProUCL Version 5.0.00 output, a detailed narrative is required to better understand how the bases for the new values were chosen and to discern any discrepancies (i.e., handling of non-detects and/or outliers) between the two modeling inputs/outputs.

At this time, both the Environmental Protection Agency (EPA) and NMED are supporting the use of ProUCL 5.0.00. FWDA has not provided sufficient evidence to demonstrate that use of ProUCL 5.0.00 is not appropriate for their site at this time. If FWDA has continuing concerns over the applicability of ProUCL 5.0.00, it is suggested that a sensitivity analysis be conducted comparing the two versions and to determine which parameter(s) have the most impact on the results. This analysis may provide better insight on a site-specific basis.

FWDA also expressed concern about how ProUCL 5.0.00 handles elevated nondetect (ND) values (e.g. if an individual ND value is many fold higher than any detected value that exists in the data set and no distributional assumption appears valid, a cell in ProUCL output lists that ND value as the nonparametric Upper Tolerance Limit (UTL)). It is acknowledged that even with previous ProUCL versions, there have been issues with UTLs being generated that are significantly elevated when compared to the maximum background concentration. The latest revision of NMED Soil Screening Guidance (December 2014) addresses this issue and includes the following: "The exception to this would be on a case-by-case basis where the estimated 95% UTL is significantly greater (more than 1.5 times) than the maximum detected concentration. This may be an indication that the 95% UTL is based on the accommodation of low-probability outliers (which may or may not be attributable to the background population) or highly skewed data sets and/or possibly inadequate sample size. In these cases, the project team may choose to

Messrs. Patterson and Smith
February 5, 2015
Page 3

evaluate the possibility of additional potential outliers or collection of more data. In lieu of collection of additional data to resolve the elevated UTL issue, the maximum detected concentration should be used as the BTV."

In conclusion, it is still NMED's position that ProUCL 5.0.00 is appropriate for use at FWDA in evaluating BTVs. If you have any questions regarding this letter, please contact Neelam Dhawan at (505) 476-6042.

Sincerely,



Dave Cobrain
Program Manager
Permits Management Program
Hazardous Waste Bureau

cc: N. Dhawan, NMED HWB
V. Baca, NMED HWB
D. Henry, USACE
C. Hendrickson, U.S. EPA, Region 6

File: FWDA 2015 and Reading
HWB-FWDA-14-007, Background Threshold Values

