

Questions for EPA from TAG Technical Advisor George Rice

DNT¹

- Has EPA determined the toxicity of the less common DNT isomers?
- Does EPA believe there is a reliable method to analyze DNT isomers in water and soil?
- Is there any difference in mobility between the more and less common DNT isomers?

Slug tests

- The Army has relied primarily on slug tests to estimate hydraulic conductivities at LHAAP². However, estimates of conductivities based on slug test data are subject to large errors³. Does the EPA believe the Army should use another method (e.g., pumped aquifer tests) to estimate hydraulic conductivities?

Effectiveness of MNA

- The Army is relying on monitored natural attenuation at many LHAAP sites. What criteria will EPA use to determine whether natural attenuation is reducing contaminant concentrations at an acceptable rate?

Cleanup time

- At some sites, the Army has proposed remedial actions that will not cleanup groundwater for hundreds of years⁴. Does the EPA believe that such long cleanup times are acceptable? Is there a cleanup time that EPA would find unacceptable?

Background concentrations of thallium

- The Army has not determined a meaningful background concentration for thallium in groundwater. This is because the detection limits used in the background analyses were higher than the thallium MCL⁵. Does the EPA believe the Army should determine the background concentration of thallium in groundwater?

¹ Note: regarding DNT, more common isomers refer to 2,4-DNT and 2,6-DNT. Less common isomers refer to 2,3-DNT; 2,5-DNT; 3,4-DNT; and 3,5-DNT.

² See, for example: Shaw, 2007a, Appendix D, page 2-1; Shaw, 2007a, Appendix G, page 2-1; Shaw 2009a, page 1-3.

³ EPA 1993, page 1; and Butler, 1997, pages 4 and 5. Values of hydraulic conductivity derived from slug test data usually represent the lower bound of hydraulic conductivity in the immediate vicinity of the well (Butler, 1997, page 230).

⁴ See, for example: US Army, 2010b, page 23; and US Army, 2010a, page 4-8.

⁵ The detection limit used by the Army was 10 µg/L. The thallium MCL is 2 µg/L (Shaw, 2007b, tables 3-1, 3-2, and 3-3).

Models

- The models used by the Army to predict the transport of contaminants in groundwater assume homogeneous and isotropic conditions⁶. Does the EPA believe that the Army should use more realistic models? That is, models that account for variations in aquifer properties.
- The Army does not appear to have performed sensitivity analyses on its modeling results⁷. Does the EPA believe the Army should perform sensitivity analyses?

References

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Shaw, 2007b, *Final Evaluation of Perimeter Well Data for Use as Groundwater Background Longhorn Army Ammunition Plant, Karnack, Texas*, June 2007.

Shaw, 2009a, *Final Feasibility Study, LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas*, November 2009.

US Army, 2010a, *Final Addendum to Final Feasibility Study, LHAAP-16, Longhorn Army Ammunition Plant, Karnack, Texas*, March, 2010.

US Army, 2010b, *Final Proposed Plan For LHAAP-16, Longhorn Army Ammunition Plant, Karnack, Texas*, September, 2010.

⁶ Shaw, 2007a, pages 4-12 and 4-15.

⁷ See, for example: Shaw, 2007a, appendices D, G, and J.