

A business of Merck KGaA, Darmstadt, Germany

3050 Spruce Street, St. Louis, MO 63103 USA  
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757

February 23, 2016

Mr. George Alexander  
Nuclear Regulatory Commission  
11545 Rockville Pike  
Mail stop T8F5  
Rockville, MD 20852

RE: Proposed Groundwater Evaluation Plan for the Fort Mims Site  
Answers to recent NRC questions  
NRC decommissioning license number 24-16273-01

Mr. Alexander,

As requested in our recent phone conversation, I am sending along with this letter the most recent soil survey results for the Sigma-Aldrich site. The report is limited to Carbon-14. Tritium results are not significant and are not included. Those results will be in our final report.

Additionally, in response to the other questions you posed during the conversation, please see our responses below.

Q1: What are the specific references used to determine the direction of ground water (GW) flow?

A: Shallow GW flow direction (in soil) is based on topography, stream location and experience. The resulting GW elevation data should demonstrate the GW flow gradient/direction.

Q2: Are we drilling & sampling such that requirements of 10CSR23-4 are met.

A: Yes. Our licensed Missouri drillers are required to meet the referenced regulation.

Q3: Did we do ground penetrating radar outside of the concrete pad to help identify any septic components (laterals)?

A: No.

Q4: Are the screening locations for the wells continuous or at certain depths?

A: We propose to target and screen the approximate upper 10 feet of the saturated zone in soil.

Q5: The proposed groundwater evaluation plan indicates that the data taken from sampling will be used help accurately calculate DCGLs. Shouldn't site specific dose modeling be developed, considering there is contamination at depths greater than surface depth?

A: Yes. We are aware of this requirement. The plan is to include DCGLs in a supplemental document or amended plan that will include site specific dose modelling.

Please let me know if you have any questions or concerns regarding this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read "Thomas K Spencer". The signature is fluid and cursive, with a long horizontal stroke at the end.

Thomas K Spencer  
Radiation Safety Officer  
Sigma-Aldrich Manufacturing LLC