

March 17, 2016

Mr. Dane Miller
Green Valley Limited Partnership
1551 Green Valley Drive
Ashland, KY 41102

Re: Proposal and QAPP for Site Characterization

Mr. Miller:

Pursuant to your request, Auxier and Associates, Inc. (Auxier) has prepared this Proposal to conduct a Site Characterization at the Green Valley Landfill, located at 1551 Green Valley Drive, Ashland Kentucky. It is our understanding that the Kentucky Department of Environmental Protection has alleged that NORM waste was sent to the landfill between the time period of May 2015 to January 2016. We understand that information is not currently any available regarding the specific radiological content of the waste alleged to have been disposed of at the site.

You have identified the relevant landfill unit as Unit 2 and the enclosed map reflects the area covered by the gamma walk conducted March 9, 2016, by the Cabinet for Public Health. We have reviewed the sampling results of that walkover which did not appear to identify any areas of elevation.

We are proposing a Radiation Survey and Site Investigation for the landfill property that is adequate to evaluate the risk posed to on-site and off-site receptors from current site conditions. All monitoring activities will be conducted by trained and certified Auxier personnel and according to established Auxier procedures. CVs for the Certified Health Physicist and the Project Manager are included with this proposal. All samples will be analyzed by a laboratory certified for the required analyses. A site-specific Sampling and Analysis Plan (SAP) which includes all required elements for a field sampling plan (FSP) and a Quality Assurance Project Plan (QAPP) will define data quality objectives, specify analytical requirements, and guide all investigation activities.

The scope of the investigation will include the identification of areas producing gamma radiation that is above an action level. This action level is a defined factor above background levels (~ two times background). Radiological surveys will be performed using Ludlum 44-10 (2" x 2") Sodium Iodide (NaI) detector coupled to a Ludlum 2221 survey meter modified to integrate and transfer data from the detector at a rate of once per second to a Trimble GeoPositioning Systems (GPS) which stores the gamma reading and the location of that reading. The detector will be hung approximately six-inches above the ground surface and advanced at a rate of 0.5 meters per second. Separation between the scanned transit lines will be approximately 1.5 meters unless influenced by terrain. Stored data will be downloaded and processed using commercially available software applications and plotted on a map of the area. Individual points will be assigned colors based on the magnitude of the instrument's response at that location.

Areas will be identified and marked where gamma surface scan measurements are greater than the action level. Exposure rate measurements will be collected at the surface and at one meter, and soil samples will be collected from identified locations. These samples will be analyzed for gamma emitting radionuclides via gamma spectroscopy. [is that correct?]

In addition, an appropriate area will be selected for determination of the Site's background gamma radiation levels soil radionuclide concentrations. Background gamma radiation and soil concentration information will be collected using the same methodology for the investigation area.

Surface water samples will be collected upstream and downstream of the investigation area to evaluate the concentrations of radioactive materials in storm water runoff. Samples will also be collected from any potentially impacted sedimentation ponds or leachate. These samples will be analyzed for gamma emitting radionuclides via gamma spectroscopy.

A summary report will be submitted to at the end of the project and will include all survey, sampling and analytical results. A map will be provided showing sample locations; survey maps generated from portable survey results married with GPS location data, field and analytical data tables, and data validation summaries. Analytical laboratory documentation, case narratives and all supporting documentation for a Level IV package deliverable will also be provided as part of the report.

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