Jump, Christine

From: Stuart Klaus <sklaus@geostatenvironmental.com>
Sent: Thursday, December 04, 2014 1:30 PM
To: Jump, Christine
Cc: Michael Stephenson; SMITH, MARTIN L; Brady Gerber; Tyson, Jim W; Weaver, Todd
Subject: Response to comment letter 11/06/14
Attachments: Response to Chris J. Comments on 110614 site visit.docx; RAE Systems -Technical-Note-106_A-Guideline-for-Pid-Instrument-Response_....pdf; RAE-Systems-PID-Training-Outline_04-05.pdf; Jim Tyson Resume 2014.pdf

Chris,
Please see attached response to comments, we have simply utilized your letter - and inserted responses to individual comments. One item that we wait to hear from you on (following USEPA's consideration of our response) is the selection of the PID lamp eV for field screening, as we indicate in the attached we are prepared to utilize either lamp, at the direction of USEPA.
I apologize this response was delayed but we were trying to get resumes together for Clean Harbor personnel, I will forward Todd Weaver's once it's available in a separate e-mail. IF you have additional questions or concerns, please feel free to respond.
Thanks
Stuart

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I went to the Wichita site on Wednesday 11-6-14 to observe the excavation and sampling activities and identified a couple of concerns I wanted to discuss with you.

Concern: Soil sampling is being conducted with the terra core samplers; however, it was being done by transferring soil (which is primarily sand) from the backhoe bucket into a Ziploc bag and then using the terra core to collect the sample from the bag. This is not acceptable. The point to using the terra core sampler is to handle the soil as little as possible to minimize volatilization. When I asked them to collect the terra core samples directly from freshly exposed soil in the bucket, they did so, but expressed concern that the sample would only be collected from one location, and in the Ziploc they could mix the sample from different areas in the backhoe. What they were describing is essentially compositing of the sample and VOC samples should never be composited. The sample must be collected from a single, freshly exposed location. The terra core samples should always be collected first, prior to collecting the sample for PID screening, metals analysis or anything else.

Response: Going forward Soil Sampling will utilize EPA's preference for leaving the soil in the excavator bucket and collecting samples directly from the bucket. The sample will be collected from only a single location within the bucket directly to the Terracore VOA samples - and then remaining soil jars/containers.

The intent of the sampling methods as conducted was to collect a representative soil sample, quickly, safely, and while also minimizing the volatilization of the disturbed soils as collected by the hydraulic excavator. The sample procedure was to quickly grab the required sample volume of disturbed soil from the bucket, contain it quickly, and allow it to be rapidly moved to a safer location to be placed in the required multiple sample containers. Removing the collected sample quickly from out of the bucket of the running excavator, transferring it immediately away from the area near the open excavation - to the relative safety of the sample processing area (sample vehicle tailgate) was felt to be important. The intent of collecting / grabbing several small pieces of soil (or several handfuls of sands - when only sand was present) from across the wide (up to 6' wide) bucket, and quickly filling up a plastic zip-lock bag was to get a more representative selection of the soils collected by the excavator bucket – as opposed to a single small soil area or clump of soil. This sample collection transfer bag was then quickly closed (sealed), while care was taken to provide no or minimal headspace in this bag. The collected sample was rapidly moved to the sample processing area – along with a similar bagged

grab sample, only for field headspace purposes, which collected less soil and sealed the bag with headspace.

These soil samples were never intended to be a composite sample, but a rather a representative sample obtained from the soils collected by the excavator bucket (sampling device). These soils were often varied with a layered selection of clay soils and sandy soils (or a variety of other soil types). Placing the selected soils within a closed zip lock bag was a temporary measure only used to quickly gather the soil and limit any further volatilization while allow it to be safely transport it away from the excavator and open excavation.

As a temporary disposable container the zip lock bag would; secure the required sample volume, allow sample transport to a safer area, protects the sample from any cross or outside contamination, and is a vapor tight container. Once placed in the zip lock bag and sealed the soil sample is isolated from the atmosphere, limiting any ongoing volatilization that could continue to be occurring from the disturbed soils remaining within the excavator bucket.

A second bag (headspace bag) was also collected from the excavator bucket at the time of sample collection; only this second bag contains less soil and is purposely sealed with air (headspace) left in the bag. Once sufficient time passed allowing for heating of recovered soils (producing off-gassing and vapors within the headspace of the sealed bags) a PID was used to measure relative concentrations of field headspace vapors. The relative concentration of these vapors can often be correlated to expected laboratory field results.

Concern: The backhoe operator was sometimes having difficulty getting samples from the side walls and started to knock soil from the wall and collect it from the excavation floor. The samplers rejected the sample and requested the soil be collected from the side wall. The samplers indicated that previously there was a different piece of heavy equipment on site that made it easier to collect side wall samples but that equipment is no longer available.

Response: Collection of soil for sampling from discrete intervals on the large sidewall face is only an issue that arises when access to the top of the excavation sidewall is blocked, as it was during the sample collection witnessed during your recent site visit. The large pile of rubble from Building D and the Process Areas were blocking access to the top (north side) of the large excavation. As you may recall while collecting the last sample, the excavator had to take some time to

clear a path and crawl over some of the Building D debris to get to the north side and collect the sample. In the future (for both quality control and scheduling purposes) we will plan our sampling events such that we have ready access from the top of the sidewalls, or we will have a quick-attach reversing bucket excavator on-site to collect the samples from within the bottom of the excavation.

Concern: I also noticed that a PID with an 11.7 eV lamp was being used for screening. When I asked why, I was told that the PID response had not been very good at the site and it was thought the ppbRAE 11.7 might help. An 11.7 eV lamp will potentially detect additional compounds; however it is less sensitive and less accurate than a 10.6 eV lamp (and more expensive). According to the RAE website, the 10.6 lamp is essentially 10 times more powerful than the 11.7 lamp. Since the primary compounds of interest at this site have an ionization potential less than 10.6 eV, I recommend using the 10.6 lamp.

Response: Initial field screening at the site was conducted with 10.6 eV lamps; field headspace response was consistently very low to Non Detect even when lab results were showing levels exceeding IAO's. The exception has been the excavation immediately west of Building I – which showed more benzene compounds – and elevated response with the PID.

When looking at PID instruments and lamps during the Building J excavation and contacting various manufactures and vendor's to provide a more effective field screening tool, one common suggestion was to use 11.7 lamp and low level (PPB) instruments. The thought process was that due to the possibly very low level headspace gas levels of PCE/TCE, possibility of compounds (possibly breakdown compounds) other than PCE/TCE including other chlorinated hydrocarbons that could have higher eV values.

From Rae's website (see two attachments): *Correction Factors are scaling factors used to adjust the sensitivity of the PID to directly measure a particular gas compared to the calibration gas. The lower the Correction Factor (CF), the more sensitive the PID is a gas or vapor.*

Also from the RAE website published CF values for TCE and PCE are both lower for 11.7 (0.43 and 0.31) lamps – than for 10.6 (0.54 and 0.57) lamps. Which would indicate that for these compounds the 11.7 lamps would be more sensitive, despite the higher power of the 10.6 eV lamp.

With EPA's consideration of the above information concerning 10.6 or 11.7 lamps. Clean Harbor's is prepared to utilize either lamp eV level moving forward on the project.

Concern: The QAPP lists Anthony Carmelli as the field supervisor for the field work. Is this still accurate? I know the samplers are documenting the samples being collected and chain of custody forms, however, it is my understanding that they are not always on site while the excavation is occurring. While asking questions about several site specifics (such as the vertical pipes in the building D excavation) I received inconsistent answers from different people, which concerned me. It is unclear to me who is performing the overall day to day field documentation for the IRM work, such as PID screening while removing "clean" soil over impacted soil, documenting staining and odors, or other anomalies (like the vertical pipes) and deciding whether additional sampling is necessary based on those observations, documenting when specific areas are being excavated, or backfilled, etc...

Response: The field supervisor is Todd Weaver and/or Jim Tyson (Clean Harbor), Mr. Tyson's resume is attached, Mr. Weaver's is being updated and will be available soon and will be forwarded once available. Mr. Weaver, and Mr. Tyson both have multiple years of experience on multiple high profile hazardous waste sites across the country and while working for several nationally recognized contractors.

Samplers: Stuart Klaus, P.E. and Brady Gerber (iSi Environmental) have completed all the rinse water sampling and soil excavation sampling efforts during 2014. While they are not on-site on a daily 8-5 basis they are on site if not daily then at least two to three times per week whenever the site has been active. During these site visits the project status and progress is discussed, photos are taken, and sampling is scheduled if not completed. While the sampling team members may not be present during all excavation activities and waste loading/hauling/disposal action. The samplers are present for; all confirmation sampling, will verify excavation dimensions (together with Merstone, KS registered land surveyors), and are present often enough to verify confirmation to the overall work plan.

Additional Response: Requested sampling completed at the bottom of the excavation under Building D, saturated soil sample near former vertical piping. While Clean Harbor's agreed to collect and analyze the sample of stained soil at the water table under Building D. It is not

our interpretation of the work plan that collection of samples at or below the water table, even if stained or otherwise showing signs of contamination is required of the workplan. Given the already known on and off-site groundwater impacts, it is not expected that a saturated soil sample will be very meaningful. However, Clean Harbor's is agreeable to perform the above and beyond request for EPA's informational purposes.