



THE GEI MGP Reporter

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TarGOST® – High Resolution MGP Waste NAPL Characterization (Part 2 of 2)

By Randy St. Germain

What typically interests people most is the amount of NAPL that is present in the subsurface. The relative amount of NAPL closely follows the % Reference Emitter (RE) fluorescence on the x-axis of the main plot (Figure 2) with the depth below ground surface represented by the y-axis. In order to correct for any laser excitation energy drift or slight optical alignment changes from log to log, a stable fluorescence emitting reference material is placed on the sapphire window immediately prior to each sounding - thus the term Reference Emitter or RE. The %RE is calculated using the overall intensity of the 4 waveform peaks or “channels”. This ‘total fluorescence’ generally corresponds well with the amount of NAPL present (semi-quantitative response). Think of the TarGOST’s RE just as you would the isobutylene used to calibrate photo-ionization detectors (PID). In this manner, the TarGOST provides consistent screening of approximate coal tar concentrations vs. depth.

Figure 2 (on page 3) illustrates TarGOST’s delineation of narrow seams of NAPL (see feature @ 62 ft). Thin zones of NAPL fluorescence, some as narrow as an inch or two, are common in TarGOST logs. Confirmation sampling has shown that these narrow fluorescence responses are usually associated with mobile (low-viscosity) NAPLs being transported within thin deposits of silt/sand/gravel.

The response from 5 to 22 ft in Figure 2 shows the other extreme - that of MGP waste NAPL zones that are many feet thick. This type of distribution is fairly typical of those conducted near former holding tanks for example, where it is believed the NAPL was originally introduced into the subsurface or where the NAPL is pooling. Also, the more viscous tar-like NAPLs are often found distributed in this manner, where they appear to be “hung-up” across wider depth ranges due to their “stickier” tar-like properties.

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Editorial

Regulation and Reason

By Jerry Zak, GEI Consultants, Inc.

In a number of states, classes of clean-up standards are applied based on current and/or expected future site use. These programs are administered by state personnel on a regional basis. In theory, identical sites (and site owners) in different regions of the same state will receive identical guidance. In practice, this is not always the case. One reason is that regulators in one region may be hampered by political or public pressure that is absent in another region. If so, it's understandable that one regulator will have less flexibility in interpreting and applying regulations than another.

When a regulatory system is inconsistent, site owners cannot develop an effective response system. In the short term, this is a cost of doing business. In the long term, it's expensive and may derail productive relationships between site owners, regulators, and consultants.

Site owners always look for new ways to navigate this reality and end up with delisted sites. We hope that regulators don't hesitate to discuss reasonable approaches that make sense within the regulations and the particular setting.

MGP Reporter

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Newsbriefs

RCRA Suit Dismissed

A district court judge has dismissed a citizen's suit brought under the Resource Conservation and Recovery Act ("RCRA") after the defendant entered into an Administrative Order on Consent ("AOC") with the EPA to clean up the site under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). Citing CERCLA's pre-enforcement bar, District Court Judge Wayne R. Anderson of the Northern District of Illinois held in *River Village West LLC v. Peoples Gas Light and Coke Co.*[1] that the AOC served to bar the citizen's suit as a challenge to a remedial or removal action being supervised by the EPA, despite the fact that the AOC was negotiated and signed

years after the RCRA case was originally filed.

Although the issue presented by *River Village West* is one of first impression, the district court was able to rely on appellate decisions which confirmed its view that CERCLA § 113(h) could serve as a bar to RCRA citizen suits. The district court was also able to find other appellate authority (albeit under the Clean Water Act) sustaining the position that the CERCLA pre-enforcement bar applied, even where an AOC was entered into following the initiation of RCRA citizen suit litigation. Given that support, it will be interesting to see if Judge Anderson's decision has legs, since counsel for the plaintiffs has indicated that they intend to appeal the decision to the Seventh Circuit.

[18] If other courts around the country following the reasoning of the *River Village West* decision or if the decision is ultimately sustained on appeal, plaintiffs in RCRA citizen suits may find themselves facing claims of pre-enforcement bar, as Judge Anderson's decision provides an incentive for defendants to negotiate and enter into AOCs with EPA as a defensive measure. As noted in the Plaintiffs' moving papers, this result could provide a significant disincentive for citizens to initiate their own litigation under RCRA.

Full article is available at:
<http://www.martenlaw.com/news/?20081022-rcra-citizen-suit-dismissed>

*Marten Law Group,
 Environmental News
 10/22/2008.*

TarGOST® ... from page 1

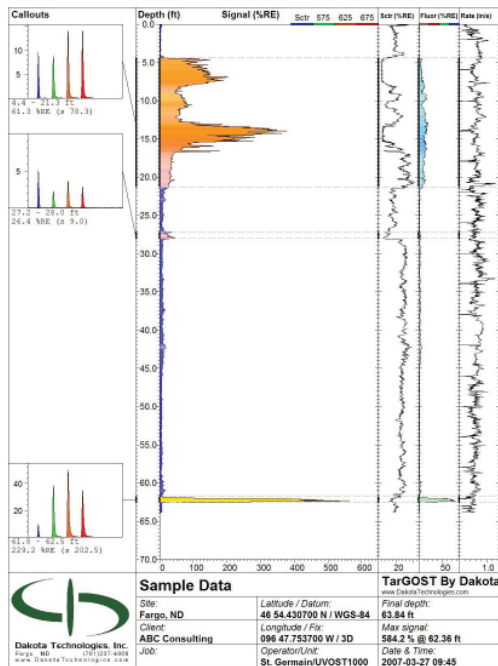


Figure 2

The size and shape of the raw “waveform”, shown at left as “callouts” in Figure 2, provides qualitative information about the nature of the fluorescent material that was observed just outside the sapphire window during “the push”. The shape (relative distribution of the 4 peaks) provides qualitative answers to questions such as “is it tar?”, “does this tar have the same signature as the tar on the other end of the site?”, or “is this small response due to a low concentration of tar or is it due to a naturally occurring false positive such as limestone or peat?”. Interpreting this aspect of TarGOST logs takes more experience and is more subjective. At some sites, especially those with little NAPL present or unusual background materials present, more expertise/experience is required to “make sense” of the logs. The majority of sites (those with significant NAPL impacts) do not require “expert analysis” of logs and the site consultant can interpret the logs based on previous knowledge and limited confirmatory sampling.

Some TarGOST users consider TarGOST more of an engineering tool than a formal chemical analysis tool. TarGOST logs are certainly useful for determining the distribution of the NAPL at a particular location, but the big payoff comes when the logs are viewed collectively to “paint a

picture” of the NAPL distribution site-wide. Figure 3 illustrates the utility of merging TarGOST with such GIS information in order to convey the maximum information about a site’s NAPL distribution. This site’s CSM was created with data generated from a four day investigation with 40 TarGOST locations. Three to five days and perhaps 30-100 locations of effort are typically required for site-wide distribution models such as Figure 3. Of course the optimum number of locations is entirely dependent on the size of the site and the degree of definition desired.

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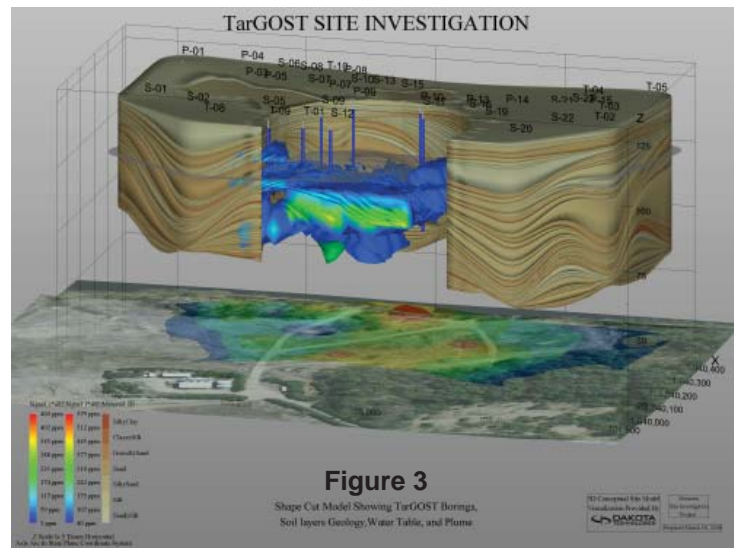
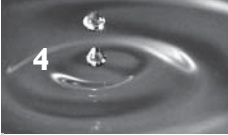


Figure 3

As of spring 2008 more than 4,000 TarGOST borings have been advanced at 63 MGP sites across the USA. Approximately 1/3 of the projects were sediment investigations conducted from a barge. Here are some guidelines and observations based on experience to date.

- TarGOST productivity ranges between 250 and 500 ft/day depending on site conditions;
- TarGOST responds in a monotonic fashion to all MGP waste NAPL tested to date – the exception is stiff “asphalts” or hardened tars with no “solvent” which simply don’t fluoresce much at all;
- TarGOST’s typical limit of detection for MGP NAPL on site soil (or Fisher sea sand) is 100-500 ppm (weight of NAPL/weight of soil matrix + NAPL);
- TarGOST does detect moderate staining, smearing, and residual levels of MGP NAPL, as well as free product – but it can’t identify or “declare” these phases;

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- TarGOST responds to tar both above and below the ground-water table;
- TarGOST delineates MGP NAPL in sediments with the same efficiency as soils;
- Tar has “stuck” to the TarGOST window in only 5 or 6 occasions out of 4,000 and it is obvious when it does;
- TarGOST is “blind” to dissolved phase PAHs or BTEX;
- TarGOST does not reliably detect PAHs not dissolved in NAPL - such as those sorbed to carbon, wood chips, ash, or bound to sediment;
- TarGOST does occasionally generate positive responses to mineral and plant interference. Crushed limestone gravel fill, peat, and rotting wood/brush debris are most common and they are usually identifiable by the associated waveforms; and,
- TarGOST does not respond well, if at all, to lighter end NAPL/fuels like gasoline and kerosene – unless they contain co-dissolved MGP waste or creosote.

Dakota has been the exclusive provider of TarGOST service for four years now. A typical wait time for service is two to six weeks, which varies greatly with the seasons. TarGOST demand has traditionally been light during spring and summer, with fall and early winter being much busier and therefore more difficult to meet short schedules. Dakota has recently added its 3rd TarGOST system to address the fall/winter “rush”. Dakota is committed to seeing TarGOST move from relative obscurity to a commonly utilized tool in the battle to characterize a very stubborn, complex and challenging contaminant.

Randy St. Germain is President of Dakota Technologies, Inc. Questions? Please contact Randy St. Germain at stgermain@dakotech.com.

MGP USA 2008 Summary

GEI Consultants, Inc. recently organized the Third International Symposium and Exhibition on the Redevelopment of Manufactured Gas Plant sites. The conference was held September 23-25 in Mystic, Connecticut. Nearly 300 registrants attended the conference, including environmental engineers and consultants, utilities, attorneys, and state regulators. There were 27 exhibitors, 30 poster presentations, and 9 technical sessions. The technical sessions included topics such as sediment management, soil vapor intrusion, in situ chemical oxidation, and a panel discussion on third party issues. Please contact John Ripp at jripp@geiconsultants.com if you have any questions about the conference or would like to receive notification about upcoming MGP conferences.



Another Movie Gas Holder

By Jerry Zak, GEI

In October 1968, Warner Brothers released the film *Bullitt*, starring Steve McQueen. This film has become a classic. One of the reasons is the car chase through hilly San Francisco. It set a standard for airborne cars, squealing tires, unseated hubcaps, steely-eyed bad guys, and short range shotgun blasts.

So what's this got to do with gas holders? Well, just before the car chase, when *Bullitt* realizes he is being followed, there is a shot from the backseat of the bad guy's car. His eyes reflect from the rearview mirror. Beyond the mirror, through the front window, up on one of those San Francisco hills, is a large, looming, familiar round structure.

This gives gas holder fans a good reason to re-visit *Bullitt*. It also gives younger readers the opportunity to see an action hero defined by cool instead of body count.

