



# THE GEI MGP Reporter

A Publication of GEI Consultants, Inc. | Serving the Utility Industry | Summer 2004

## Successful Control of Site Emissions Using Temporary Structures

By David R. Pluhar, senior project manager and Christopher Dawdy, senior environmental scientist,  
GEI Consultants, Inc.

In the spring edition of the MGP Reporter we discussed the keys to successful control of emissions using a temporary structure. In this edition we'll discuss the recommended monitoring techniques to evaluate the effectiveness of the temporary structure for emissions control. Air-monitoring programs we conduct at MGP sites are based on the expected project goals for site controls and air quality standards.

When incorporating a temporary structure into a site remedial action the goals of the monitoring program should include:

- Evaluating the concentrations of airborne chemical constituents and particulates on a real-time basis to guide the remedial action activities
- Using the real-time monitoring to identify air emission sources while the work proceeds in order to take immediate corrective actions
- Evaluating the performance of the temporary structure

- Evaluating the potential long-term risk-based air quality impacts
- Completing background (pre-remediation) and post-remediation air sampling to document air quality upwind and downwind of the site prior to and at the conclusion of remedial actions

GEI uses real-time air monitoring as an effective screening method to assess the work area and site perimeter. We use both fixed-station real-time monitoring systems (networks), and hand-held monitors. We recommend monitoring particulates, total volatile organic compounds (VOCs) and benzene. Additionally, odor assessments can be performed using ASTM Method E544-99. Sampling locations can include:

- For particulates – site perimeter and near the structure doors
- For VOCs and BETX (benzene, ethylbenzene, toluene, xylene) – site perimeter, near the structure doors, carbon filter exhaust, and inside the structure

*continued on page 3*

### What's News

#### Page 2

[Hot Topics in MGP Site Management](#)

#### Page 3

[Controlling Site Emissions Using Temporary Structures](#)

#### Page 4

[GEI's New Visual Identity](#)

# Editorial

## Hot Topics in MGP Site Management

By Dennis Unites, vice president, GEI Consultants, Inc.

The occasion of the biennial AGA Manufactured Gas Plant Workshop offers a chance to see which topics are hot in MGP site management and where the industry is going. The topics of cyanide and sediment contamination continue to generate interest. One of the stories regarding the latter that hasn't drawn much notice, but should, is the ability to better predict sediment toxicity using supercritical fluid extraction. This furthers the work on environmentally acceptable end points started by GRI and continued by GTI.

The major topics of discussion hinged around remediation and the community relations issues associated with it. As more sites go to remediation more folks are beginning to realize that failure of community relations because of noise, dust, odor and so forth can bring a remediation project to an expensive stop. A number of speakers discussed dealing with the often contradictory demands of the people living and working near the sites.

Vapor intrusion from contaminated soils and ground water and changing risk evaluation for a number of MGP constituents were identified as growing issues among a number of state agencies. These coupled with the New Jersey Natural Resources Damage campaign make it clear that there are still plenty of issues to keep an MGP site manager awake at night.

# Newsbriefs

### Artifacts Uncovered

Dozens of historically significant artifacts have been uncovered during the cleanup of a former MGP site in Augusta, Georgia. The city's executive director of the Augusta Canal Authority, Dayton Sherrouse, hopes one day to display them in the Augusta Canal National Heritage Area Interpretive Center at Enterprise Mill.

Over a century ago, industries such as flour mills and a pistol factory lined the canal. Today, artifacts including a military helmet liner and solid brass oil can have been unearthed, decontaminated, cleaned and stockpiled for transfer. According to the Interpretive Center's Web site, Mr. Sherrouse says the artifacts may help to teach visitors how Augusta used its waterways to "reinvent itself and define its destiny." *The Augusta Chronicle*. 7/10/2004.

### Coal Tar Artist's Medium

Sindh Secretary for Information, Mehtab Akber Rashidi, launched the exhibit of coal tar portraits by Iqbal Ahmad Khan. The three-day exhibition took place at the Arts Council in Karachi, Pakistan. *The Pakistan Newswire*. 5/27/2004.

### Elizabeth River Goo

'Money Point' on the Elizabeth River in Chesapeake, Virginia used to house several creosote plants, which preserved wood products with a coal tar substance. As a result of dumping leftover creosote into the river, an explosion in 1963 which resulted in 130,000 gallons of raw creosote flowing into the River, and a storage tank spill four years later which dumped another 20,000 gallons into the shallows, the site is one of the most toxic hot spots of its kind in the world. Recently,

the River cleanup project received \$5.3 million in environmental compensation from A.P. Moller-Maersk Group, the world's largest shipping line. The Government required the payment as compensation for environmental damage. It's predicted to take three years to conduct the study and select a solution and another five to complete cleanup. *Associated Press*. 6/20/2004.

### Smelly Coal Tar Dreams

A study conducted at Brown University found that odors do not disrupt sleep. The study, involved six 20-something year old participants who were exposed to two scents: peppermint and pyridine – a component of coal tar that produces an offensive odor. When awake, participants smelled both odors, but in moderate to deep sleep, no one awakened

## MGP Reporter

### Editorial Board

Brian McCarthy  
bmccarthy@geiconsultants.com

Dennis Unites  
dunites@geiconsultants.com

### Designer

Melissa Shaffer  
mshaffer@geiconsultants.com

*The GEI MGP Reporter* is a quarterly newsletter covering selected environmental issues in the electric and gas industry. The newsletter staff welcomes articles and comments from members of the industry. When contractor and/or vendor names are listed anywhere in this publication, it is for information only and does not imply any endorsement whatsoever on the part of GEI or its co-sponsors.

GEI Consultants, Inc.  
188 Norwich Ave., PO Box 297  
Colchester, CT 06415  
phone (860) 537-0751  
fax (860) 537-6347  
[www.geiconsultants.com](http://www.geiconsultants.com)

©2004 GEI Consultants, Inc.

to the smell of peppermint and pyridine only occasionally caused a reaction, though never when in deepest stages of sleep. *The San Diego Union-Tribune*. 5/26/2004.

### Oshkosh \$400,000 Grant

The City of Oshkosh, Wisconsin won a \$400,000 EPA Brownfields grant to help redevelop contaminated areas. The grant will be split between two sites: Riverside Park, a former coal gasification plant which left coal tar as a by-product; and Pearl/Marion redevelopment area, a former industrial site with contamination from lead and sawdust. Oshkosh is expected to get funding in October. *Oshkosh Northwestern*. 6/17/2004.

# Temporary Structures ... from page 1

- For odors – site perimeter and near active work areas

Real-time sampling frequency can vary depending upon program objectives. GEI typically assumes the following range for monitoring schedules:

- For particulates – hourly or continuous (during work periods)
- For VOCs – hourly or continuous
- For benzene – when a VOC action level is exceeded
- For odors – hourly

Monitoring volatiles' breakthrough of the carbon beds on the structure ventilation exhaust is important for verifying that the carbon continues to perform the intended function of structure exhaust control. GEI recommends conducting daily monitoring of the carbon exhaust using either a PID or portable GC. When using a PID for monitoring, a portable GC should be available to measure benzene levels when a predetermined total VOC level is measured with the PID. The adsorption zone in the carbon starts at the bottom of the carbon bed and migrates upward as the adsorptive capacity of the carbon is exhausted (spent). Monitoring the carbon bed effluent will indicate when the adsorptive capacity of the bed is nearly spent. Placing sampling probes at varying depths down into the carbon bed allows more rigorous monitoring of the remaining bed adsorptive capacity.

As indicated in the spring MGP Reporter, maintaining a slight negative pressure inside the structure further controls the release of emissions from the structure. Continuous monitoring of the air pressure inside the structure can be accomplished using differential pressure sensors. The sensors monitor the pressure difference between the structure interior and exterior. Continuous monitoring of the air pressure inside the structure provides a means of evaluating whether the structure is effectively being maintained at a negative pressure. Pressure readings can be continuously recorded and logged.

Time-integrated air sampling provides the quantitative data that confirms site emission control measures are performing and documents the control of site emissions. Also, time-integrated air sampling generally is used to evaluate site emissions relative to project specific risk-based air quality standards. The emissions parameters usually monitored include:

- VOCs (BETX)
- Semi-volatile compounds (PAHs)
- Respirable particulates (PM-10)
- Meteorological conditions (wind speed and direction, ambient temperature, barometric pressure, and relative humidity)

The sampling equipment/method recommended for conducting time-integrated sampling includes:

- Summa canisters using EPA Method TO-14A for VOCs
- PUF samplers using EPA Method TO-13A for PAHs
- High-volume sampler with an impactor design size-select inlet using the EPA Method in 50 CFR, Appendix J for PM-10

The advantage of time-integrated sampling is that these samplers and methods allow for extended sampling periods (24 to 72 hours) thereby reducing analytical costs and providing lower detection limits than real-time methods.

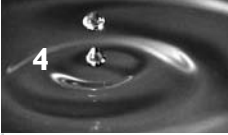
The use of temporary structures for emissions control includes a multitude of project operational and financial consequences. Is my investment in this control technology providing the level of control necessary to meet my air quality and risk management objectives? With that question in mind, the value of the air monitoring data collected during the remedial action while using a temporary structure is confirmation that this control technology is providing the anticipated benefit.

*For more information on using temporary structures, please contact David Pluhar, at 1-800-707-9939 or via e-mail at [dpluhar@geiconsultants.com](mailto:dpluhar@geiconsultants.com).*

The advantage of time-integrated sampling is that these samplers and methods allow for extended sampling periods (24 to 72 hours) thereby reducing analytical costs and providing lower detection limits than real-time methods.

## Speak Up

**MGPs in the Movies** Reader, Keith Drescher of Florida Power & Light Company, e-mailed to let us know the movie "Spider" features a gasholder in many of the scenes. We'd love to hear from you. E-mail Dennis Unites at [dunites@geiconsultants.com](mailto:dunites@geiconsultants.com) with your MGP movie sighting, trivia, etc.



## GEI Consultants, Inc. Launches New Visual Identity

Winchester, Massachusetts — July 6, 2004 — GEI Consultants, Inc. has introduced a new visual identity that reflects the significant broadening of capabilities that has occurred over the past 30 years. Since the early 1970s, GEI has expanded our presence across the country and introduced a portfolio of new services to better serve our clients.

“We want to build our new look on our very strong technical roots and the solid foundation of hard work, integrity and dedication to high quality,” said GEI president, Frank Leathers. “Today we are bringing our look up to speed with our capabilities.”

The GEI brand is most recognized as the Greek letter Phi, which was chosen for its clear connection to the specialized practice of geotechnical engineering. The Phi represents shear strength of soil, and that engineering constant has helped establish GEI’s image. By the mid 1980s, our practice area had expanded beyond just geotechnical to include environmental and water resources engineering.

Today, we have new leadership; we have expanded our services, capabilities, and locations; and we are positioning ourselves to serve our clients better. This new logo represents our commitment to expansion of our technical expertise and client service.

The visual changes will not be restricted to the logo alone. To further communicate the expanding capabilities of GEI, the new visual will be incorporated into our all future communications, advertising, and collateral materials—including the redesigned *MGP Reporter*.

GEI Consultants, Inc. provides environmental, geotechnical, water resources, and civil engineering services to a broad range of private-sector clients, utilities, and federal, state, and local government agencies. The GEI mission is to deliver professional services of exceptional value to our clients. GEI has 16 offices nationwide.

*For more information, please contact Meg Edwards at [medwards@geiconsultants.com](mailto:medwards@geiconsultants.com) or (781) 721-4000.*

## Coal Tar History

### Rabbit Proof Fences

In 1859, 24 rabbits had been introduced to Australia for sport; by 1901, 200,000 rabbits were being poisoned each night to try to cut down on the rapidly spreading horde. Ten rabbits could eat as much as one sheep. In their hundreds of thousands they ate out pasture, ring-barked trees and devoured crops. In July 1901, by orders of the royal commission, the No. 1 Rabbit Proof Fence line was laid. When the fence was completed it was the longest fence in the world, stretching more than 1 137 miles. By 1902 rabbits were already building up against the No. 1 fence, so inner fences, No. 2 and No. 3, were constructed. Fences were finished by 1907, and covered a total of 2021 miles. Much of No. 1 still stands today, perhaps with the help of the netting below ground, which was dipped in coal tar to preserve it. Today the State Barrier Fence (a combination of No. 1 and others) is maintained to bar the way of migrating emus. *The West Australian (Perth). 5/26/2004.*

## WebWatch

### Websites of Interest

US EPA’s One Cleanup Program

<http://www.epa.gov/swerrims/onecleanupprogram/index.htm>

US EPA’s Ground Water Task Force

<http://gwtf.cluin.org/>

Air Force Center for Environmental Excellence

<http://www.afcee.brooks.af.mil>



1021 Main Street  
Winchester, MA 01890

RETURN SERVICE REQUESTED



Prsrt Std  
US Postage Paid  
Brockton, MA  
Permit No. 402

