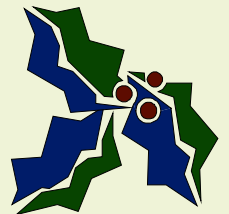
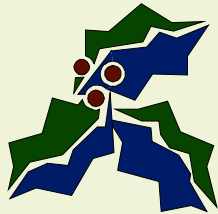
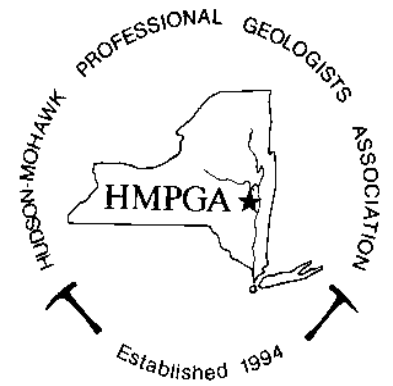


**H  
M  
P  
G  
A**

**Hudson-Mohawk  
Professional Geologists'  
Association**

*December Newsletter*

[www.hmpga.org](http://www.hmpga.org)



**HAPPY HOLIDAYS TO HMPGA MEMBERS!**

COME ONE AND ALL TO OUR ANNUAL HOLIDAY GATHERING ON

**WEDNESDAY, DECEMBER 21, 2005**

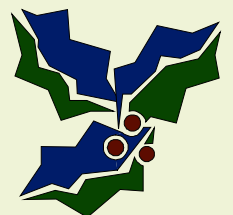
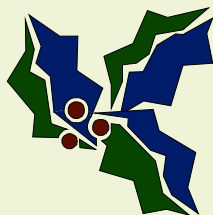
at the  
Calaway Grill in the Wingate Inn  
661 Albany Shaker Road, Colonie

from  
**5:00 pm to 7:30 pm**

**Hors D'oeuvres provided by HMPGA**  
(Beverages are on your own)

No Reservations Required

Bring along your spouse or significant other and  
join your friends and colleagues to share in the holiday spirit!



## Officers

### *President*

*Bill Wertz*  
(518) 402-9813  
[wertzfam@nycap.rr.com](mailto:wertzfam@nycap.rr.com)

### *Vice President*

*Ted Loukides*  
(518) 402-8072  
[tnloukid@gw.dec.state.ny.us](mailto:tnloukid@gw.dec.state.ny.us)

### *Treasurer*

*Tom Johnson*  
(518) 348-6995  
[tjohnson@alphageoscience.com](mailto:tjohnson@alphageoscience.com)

### *Secretary*

*Stefan Bagnato*  
(518) 782-2100  
[sbagnato@pirnie.com](mailto:sbagnato@pirnie.com)

### *Past President*

*Mark Williams*  
(518) 270-1620  
[mwilliams@h2hassociates.com](mailto:mwilliams@h2hassociates.com)

## Board Members

### *Justin Deming*

(800) 458-1158  
[jhd01@health.state.ny.us](mailto:jhd01@health.state.ny.us)

### *Jeanne Hewitt*

(518) 457-4052  
[jhewitt@dot.state.ny.us](mailto:jhewitt@dot.state.ny.us)

### *Stephen LeFevre*

(518) 218-1801  
[slefevre@bartonandloguidice.com](mailto:slefevre@bartonandloguidice.com)

### *William Miller III*

(518) 458-9203  
[wmiller@continentalplacer.com](mailto:wmiller@continentalplacer.com)

### *John Nadeau, Webmaster*

(518) 348-6995  
[jnadeau@alphageoscience.com](mailto:jnadeau@alphageoscience.com)

### *Mary Millus, Newsletter Editor*

[mmillus@continentalplacer.com](mailto:mmillus@continentalplacer.com)



## Inside the December 2005 Newsletter

	<u>Page</u>
<i>President's Message</i>	3
<i>HMPGA Corporate Sponsors</i>	5
<i>Announcements</i>	8&13

HMPGA sponsors, coordinates, and participates in events to help educate the community and its members with respect to geological or geotechnical issues. Events include regular meetings with evening dinners and guest speakers. Other events include workshops, short courses, or field excursions. If you have questions, comments, or suggestions for our organization, please contact a HMPGA Officer or Board Member.

### **DECEMBER'S Meeting and Event Information:**

**When:** December 21, 2005

**Schedule:**

**Calaway Grill**  
**The Saratoga Room**  
(attached to the Wingate Inn)  
661 Albany Shaker Road, Colonie

**ANNUAL HOLIDAY GATHERING!**



## PRESIDENT'S MESSAGE

### Happy Holidays HMPGA Members!

The holiday season is now in full swing, which means that its time to mark your calendars for the annual HMPGA Holiday Party. This year, the party will be held at the Calaway Grill on Albany Shaker Road on Wednesday, December 21<sup>st</sup>. The festivities will start at 5:00 P.M. Given the proximity of the venue to Wolf Road, I suggest leaving some extra time to negotiate what will surely be the abundant holiday traffic, and, leaving some extra room for the beer or other refreshments to take the edge off once you finally wend your way to the Calaway.

Because we are having the party, we will not have a speaker this month, but we do have a very interesting talk by John Delano, University at Albany, titled "Origin of Sustainable Life on Earth, and its Prospects Elsewhere: A Geologist's Perspective" lined up for January 18<sup>th</sup>.

During the November meeting, the HMPGA Board of Directors unanimously voted to recognize Don Cadwell's many contributions to the geologic community and to HMPGA by designating an annual lecture in his honor. On February 15, 2006 our own Sam Gowan, Alpha Geoscience, will be speaking at the first annual Cadwell Lecture on "Aerial Photographic Interpretation: An Art or a Science?" **Don, I'm sure I speak for all of your many friends at HMPGA, when I express my sincere thanks for all you have done to further the science of geology and for your many years of support of HMPGA.**

### Seasons Greetings to All!

#### Bill

*(Bill Wertz works for the Department of Environmental Conservation, Division of Environmental Remediation)*

December's Newsletter Deadline:  
**December 27, 2005**

Send MS Word documents via e-mail  
to [mmillus@continentalplacer.com](mailto:mmillus@continentalplacer.com)

Any content that appears to express an opinion  
on behalf of HMPGA will be reviewed by the  
President prior to publication.

## PRECISION Industrial Maintenance, Inc

*Providing Quality Industrial and Environmental Services*

1710 Erie Blvd  
Schenectady, NY 12308  
(518) 346-5800 • (Fax) 346-6077

P.O. Box 508  
Waterbury, VT 05676  
(802) 244-5979 • Fax (802) 244-8979

[www.precisionindustrial.biz](http://www.precisionindustrial.biz) • Toll Free 888-888-PIMI (7464)



Frank J. Williams, P.G.

**BROWN AND  
CALDWELL**

234 Hudson Avenue  
Albany, NY 12210  
Tel: (518) 472-1988  
fwilliams@brwncald.com

*Environmental Engineers & Consultants*



**EXPERIENCE IS THE SOLUTION**

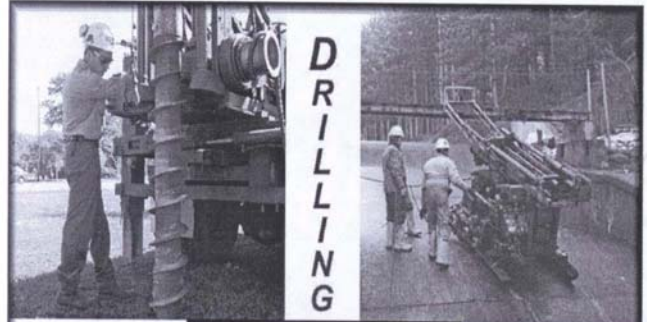
**Industrial hygiene**

**Product and materials testing • Certified laboratory analysis**

314 North Pearl Street  
Albany, New York

(518) 434-4546  
(800) 848-4983

*Serving the Northeast*  
[www.adirondackenvironmental.com](http://www.adirondackenvironmental.com)

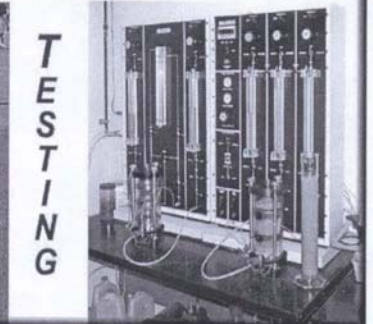
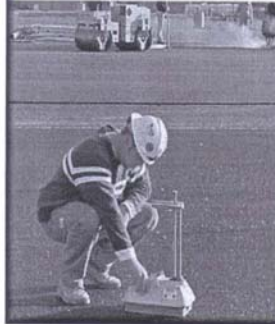


Albany, Buffalo, Cortland,  
Cuba, Jamestown,  
Rochester, Syracuse &  
Gilbert, PA



**ALBANY OFFICE**  
PO Box 2199  
Ballston Spa, NY 12020  
5 Knabner Rd.  
Mechanicville, NY 12118  
(518) 899-7491  
FAX: 899-7496

1-800-821-5911



**Test Borings • Monitoring and Recovery Well Installations • Rock Coring  
Direct Push Sampling • Packer Testing • Downhole Video Services •  
Pumping Tests  
ORC/HRC Injection Services • Well Rehabilitation Services • Pump  
Installation Services**



Over 33 years of service to Federal, State and Commercial clients  
Medically monitored, hazardous waste operations - trained crews  
Licensed to drill in all states on the East Coast

P.O. Box 56, 5879 Fisher Road, East Syracuse, NY 13057 (p) 800-782-7260 (f) 315-437-1770  
P.O. Box 1029, 501 Millstone Drive, Hillsborough, NC 27278 (p) 800-627-7920 (f) 919-644-2817

[info@pwinc.com](mailto:info@pwinc.com) • [www.pwinc.com](http://www.pwinc.com)



<b><i>HMPGA CORPORATE MEMBERS</i></b>	<b><i>Contact</i></b>	<b><i>Phone</i></b>
<b>Adirondack Environmental Services</b>	<b>Steve Valle</b>	<b>(518) 434-4546</b>
<b>Alpha Geoscience Corp.</b>	<b>Tom Johnson</b>	<b>(518) 348-6995</b>
<b>Aquifer Drilling &amp; Testing, Inc.</b>	<b>Joe Miranda</b>	<b>(518) 274-3949</b>
<b>Atlantic Testing Laboratories, Limited</b>	<b>James Schidzick</b>	<b>(518) 383-9144</b>
<b>Barton &amp; Loguidice, P.C.</b>	<b>Stephen LeFevre</b>	<b>(518) 218-1801</b>
<b>Bond, Schoeneck, &amp; King, PLLC</b>	<b>Kevin Bernstein</b>	<b>(315) 218-8329</b>
<b>Brown and Caldwell</b>	<b>Frank Williams</b>	<b>(518) 472-1988</b>
<b>Continental Placer Inc.</b>	<b>Bill Miller</b>	<b>(518) 458-9203</b>
<b>Earth Tech, Inc.</b>	<b>Walter Howard</b>	<b>(518) 951-2387</b>
<b>ERM-Northeast, Inc.</b>	<b>Edward Hinchey</b>	<b>(315) 445-2554</b>
<b>Griggs-Lang Consulting Geologists,</b>	<b>Jeff Lang</b>	<b>(518) 373-7078</b>
<b>Groundwater Essentials, Inc.</b>	<b>Julie Rosenberger</b>	<b>(877) 994-9376</b>
<b>H2H Associates, LLC</b>	<b>Richard Hisert</b>	<b>(518) 899-3484</b>
<b>Hager-Richter Geoscience, Inc.</b>	<b>Dorothy Richter</b>	<b>(603) 893-9944</b>
<b>HydroGeologic, Inc.</b>	<b>Eric Evans</b>	<b>(518) 782-3435</b>
<b>LaFarge NA</b>	<b>Adrian Bilger</b>	<b>(518) 756-5077</b>
<b>Op-Tech Environmental Services</b>		<b>(518) 452-9641</b>
<b>Parratt Wolff, Inc.</b>	<b>Bill Morrow</b>	<b>(800) 782-7260</b>
<b>Precision Industrial Maintenance</b>		<b>(518) 346-5800</b>
<b>SJB Services, Inc.</b>	<b>Joe Genovese</b>	<b>(800) 821-5911</b>
<b>Spectra Environmental Group, Inc.</b>	<b>Robert LaFleur</b>	<b>(518) 782-0882</b>
<b>URS Corporation</b>	<b>Scott Hulseapple</b>	<b>(518) 688-0015</b>
<b>York Analytical Laboratories, Inc.</b>	<b>Marty Rowan</b>	<b>(518) 429-5059</b>
<b>Zebra Environmental</b>	<b>Matthew Ednie</b>	<b>(518) 456-9922</b>



## **CONTINENTAL PLACER INC.**

***Geologic and Environmental Consultants to the Mining and Minerals Industry***

- Exploration/Evaluation
- Environmental Permitting
- Market Studies
- Expert Testimony
- Quality & Quantity Studies
- Mining Engineering
- Acquisition Due Diligence
- Mine Planning
- Mineral Appraisals (Valuations)
- Safety & Health
- Environmental Services
- Groundwater Studies

26 Computer Drive West • Albany, New York 12205

(518) 458-9203 • Fax (518) 458-9206

[www.continentalplacer.com](http://www.continentalplacer.com)

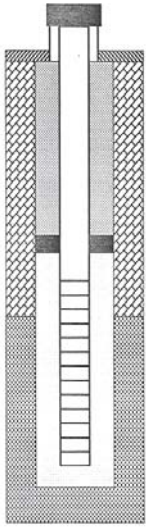
Albany, NY • Mechanicsburg, PA • Laconia, NH • Chicago, IL • St. Louis, MO





## AQUIFER DRILLING & TESTING, INC.

ENVIRONMENTAL / GEOTECHNICAL  
DRILLING & RELATED SERVICES



- AIR / MUD ROTARY
- HOLLOW STEM AUGER
- TRACK MOUNTED LIMITED ACCESS
- GEOPROBES® - TRACK / 5400 UNITS
- ROCK CORING
- TUBEX®

(800) 238-3745 NYC  
CALL JIM SEIDEL / BILL POUPIS

(518) 274-3949 ALBANY  
CALL JOE MIRANDA

(860) 243-0352 HARTFORD, CT  
CALL MARQUES LARABIE

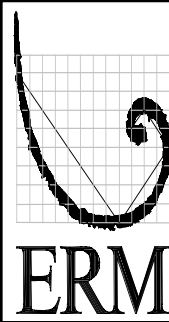
ADT DIAMOND DRILLING, INC.

(732) 502-9919

CALL MILFORD BRINKERHOFF / MARK PROSTKO

*Serving the Northeast & Mid - Atlantic States*

Visit Our Website @ [www.aquiferdrilling.com](http://www.aquiferdrilling.com)



- Environmental Consultants and Engineers
- Merger and Acquisition Advisory Services
- Site Investigations & Remediation
- Environmental Compliance
- Industrial Hygiene Services
- Environmental Claims & Litigation Experts

5788 Widewaters Parkway, Dewitt, New York 13214 (315)445-2554/(888) ERM4YOU

## B S & K Mining Related Legal Services

- Environmental  
(local law matters, air, enforcement,  
mine permitting, SEQRA)
- Labor
- Health and Safety

### Primary Contact

Kevin M. Bernstein  
One Lincoln Center  
Syracuse, NY 13202  
315-218-8000

### Additional Contact

Robert H. Feller  
111 Washington Ave.  
Albany, NY 12210  
518-533-3000

*Serving The Natural Resource Industry*

BOND, SCHOENECK & KING, PLLC  
ATTORNEYS AT LAW • NEW YORK FLORIDA KANSAS



Geologists

Scientists

Planners

Traffic  
Engineers

Environmental  
Engineers

Data  
Managers

Albany - Buffalo - New York City - Plattsburgh - Rochester

# URS

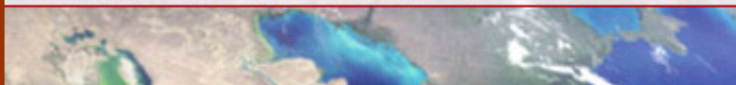
28 Corporate Drive, Suite 200  
Clifton Park, New York 12065

Tel: 518.688.0015

Fax: 518.688.0022

[www.urscorp.com](http://www.urscorp.com)



- Industrial Cleaning
- Lab Pack Services
- Tank Cleaning
- Waste Disposal
- Environmental Investigation & Remediation

(518) 452-9641    [www.op-tech.us](http://www.op-tech.us)    1-800-225-6750

# YORK

ANALYTICAL LABORATORIES, INC.



*Your Full Service Environmental Laboratory*

NYSDOH/NELAC Certified

*Offering unparalleled Service  
to the Hudson-Mohawk Region*

**Your source for TO-15 Volatiles Analysis  
to support Vapor Intrusion Studies**

*Free Courier Service      Competitively Priced*

**Contact: Marty Rowan**

*1-518-439-9012 or 1-518-429-5059 (cell)*

NY Sales Office 6 Gladwish Road Delmar, NY 12054  
Laboratory 120 Research Drive Stratford, CT 06615



Professional Services for Water Systems

**STEPHEN R. CROOK, P.G.**  
DISTRICT MANAGER

OFF: 518/295-8288  
FAX: 518/295-8289  
EMAIL: [srclayne@midtel.net](mailto:srclayne@midtel.net)

LAYNE CHRISTENSEN COMPANY  
ROUTE 30, P.O. Box 917  
SCHOHARIE, NEW YORK 12157

**ENGINEERED TO HANDLE  
SAND, SILT & OIL!**

**12 VOLT DC SUBMERSIBLE PUMPS  
FOR GROUNDWATER PURGING AND LOW FLOW SAMPLING**



**ALL PROACTIVE PUMPS RUN 24  
HOURS/7 DAYS A WEEK  
(NO NEED FOR A COOL DOWN)**

- RENT OR PURCHASE
- WATER LEVEL METERS
- .45 MICRON FILTERS

**ASK ABOUT OUR  
POINTS PLUS PROGRAM**

- PVC & POLY NON-WEIGHTED & WEIGHTED BAILERS
- POLY, SILICONE & TELFON TUBING
- 18 AMP & 38 AMP MOBILE BATTERY POWER PAKS

**14 PUMPS  
TO CHOOSE FROM**

**GUARANTEED  
LOWEST PRICES  
ON TUBING**

Call Groundwater Essentials, Inc. Toll Free at  
**1-877-99-HYDRO**  
[WWW.GROUNDWATERESSENTIALS.COM](http://WWW.GROUNDWATERESSENTIALS.COM)





## CAPITAL DISTRICT BREAKFAST CLUB PRESENTATIONS:

The Capital District Environmental Breakfast Club is an informal group of environmental professionals that meets monthly to discuss current environmental issues. Each meeting features a speaker on a topic of interest, a regulatory update, and an open forum. Meetings are held on the first Friday of each month except July and August.

The Environmental Breakfast Club meets at the Holiday Inn Turf on Wolf Road in Colonie, New York. Meetings start at 7:30 am. The cost is \$12 per person which includes a full breakfast buffet.

*December's Topic of discussion:  
DEC in 2006, with Denise Sheehan, Acting DEC Commissioner*

You can find out more details about the Capital District Environmental Breakfast Club at their website:  
[www.youngsommer.com/CM/Custom/TOCEnvironmentalBreakfastClub.asp](http://www.youngsommer.com/CM/Custom/TOCEnvironmentalBreakfastClub.asp)



## Buffalo Association of Professional Geologists (BAPG)

The BAPG conducts regular membership meetings on the third Wednesday of the month, January through June and September through November, featuring distinguished speakers. Field trips and technical seminars sponsored by the BAPG encourage the exchange of scholarship and expertise.

Visit [www.bapg.org](http://www.bapg.org) for more information!



## Central NY Association of Professional Geologists (CNYAPG)

The CNYAPG conducts regular meetings on the second Thursday of each month from September to May. Meetings feature dinner and distinguished speakers whose presentations invite comment and discussion.

Visit [www.cnyapg.org](http://www.cnyapg.org) for details!



## LONG ISLAND ASSOCIATION OF PROFESSIONAL GEOLOGISTS

The Long Island Association of Professional Geologists (LIAPG) is a not-for-profit professional organization dedicated to the professional and business needs of geologists located in the Long Island / Metro New York area.

To contact members or view upcoming events sponsored by the LIAPG, go to their website:  
[www.liapg.org](http://www.liapg.org)



## Seeing Things Differently

# 3-D GPR Providing A New Field Tool

By LOUISE S. DURHAM  
*EXPLORER Correspondent*

***"This is what's driving the effort to make this particular 3-D imaging technology simple and efficient..."***

Legions of geologists have ventured forth to study the outcrop armed only with a trusty hammer and a pack full of sample bags. But technology encroaches on everything, including that outcrop of soil and rocks in the far reaches of the countryside. In fact, the emergence of 3D ground penetrating radar (GPR) technology has the potential to drastically alter the traditional approach to field work.

Where conventional outcrop observations, digital photography, laser scanning and remote sensing capture only the characteristics of the exposed geology, 3-D GPR imaging can quickly yet non-destructively extract information at sub-meter resolution from inside the rock volume. Instead of relying on the best guestimate of where to drill holes and take samples of the outcrop, 3-D radar data helps to accurately determine the best spot, some believe. Today, 3-D imaging is ubiquitous within the oil industry. On an entirely different level, it's also widely used in such diverse areas as medical imaging and airport luggage screening.

"For the scale in between these -- the sub-meter-to-meter shallow subsurface -- there's been nothing available which produces images of equal quality and resolution like where you can slice a volume in any direction and see features in high resolution resolved," said Mark Grasmueck, assistant professor marine geology and geophysics University of Miami, RSMAS.

"If it is available, it exists as academic prototypes, and then it takes weeks to months to process the data," Grasmueck said. "This is what's driving the effort to make this particular 3-D imaging technology simple and efficient in acquiring and processing information."

## New York Case Study

Grasmueck began working on 3D GPR in the early 1990s. For the last year or so he's been busy developing the new, next generation 3-D GPR imaging tool.

The tool was used earlier this year in a field test at the Palentine Bridge limestone quarry in New York. The effort was a collaboration between the Comparative Sedimentology Laboratory at University of Miami and the Reservoir Characterization Group at New York State Museum.

The 3-D GPR survey's objective was to delineate the rubble-covered part of the fractured and hydrothermally-altered reservoir analog. Grasmueck noted the quarry could serve as a mini-analog to develop improved understanding of structural, hydrothermal and stratigraphic relationships in difficult to find and produce hydrocarbon reservoirs, e.g., the Texas Ellenburger and Michigan Albion Scipio.

Grasmueck presented a poster on the project titled "3-D Vision GPR: Reservoir Anatomy Beyond the Outcrop Surface," during the AAPG Annual Convention in Calgary. The poster was co-authored by Mark Grasmueck and David Viggiano of the University of Miami (Fla.); and Langhorne Smith Jr., and Richard Nyahay, both of the New York State Museum, Albany, N.Y.

## On the Move:

Effective November 28, 2005, H2H Associates, LLC will be located in historic downtown Troy. Contact information is provided below:

### H2H Associates, LLC

Geologic Consultants, Environmental Professionals,  
Construction Services

179 River Street  
Troy, New York 12180

Phone: (518) 270-1620

Fax: (518) 270-1672

[www.h2hassociates.com](http://www.h2hassociates.com)

*A SBA 8(a) Certified Company*



H2H Associates, LLC provides geologic, hydrogeologic, construction, regulatory and environmental services to private and public clients. We are a team of professionals, each bringing their own unique expertise and experiences in order to provide you with cost-effective and responsive service.

### *Article (from Page 9)*

A key finding of the Palentine Bridge project: Even with low penetration depth, full-resolution 3-D GPR can still provide a clear structural "floor plan" of an outcrop covered with rubble. In this particular project, the 3-D cubes precisely defined the "floor plan" of a buried en-echelon fault geometry in map view. During the project, the group developed a suite of software tools to fuse and process 3-D GPR and position data into interpretable cubes and animations within one-two hours after the last trace is acquired -- an effort that previously required several weeks.

"This opens the opportunity to start using 3-D GPR as an onsite imaging tool for outcropping reservoir analog field studies supporting ongoing structural and stratigraphic field work and sample collection," Grasmueck said. "The new 3-D GPR offers near-instant views inside the rock volume when outcrop exposure is limited and can be used to test geological hypotheses while still in the field.

"It used to be you went to the field and acquired a 3-D data set and months later you would get the final 3-D volume and then go back to the field," Grasmueck noted. "There was a disconnect between field work and having the 3-D result."

### **The Next Dimension**

Because the technology can acquire 3-D volumes so quickly, the team is starting to do repeat volumes to perform 4-D imaging of fluid flow to determine how the fluid moves in the near-surface. This has not been possible before because fluid flow is not observable with boreholes.

"We can see what's happening with fluids around the borehole as they migrate toward the hole," Grasmueck said. "We're bridging the scale between borehole observation and conventional 3-D seismic information."

The impact of 3-D GPR imaging in the oil industry could be substantial. "The use of 3-D GPR will help develop better reservoir models in less time with fewer but more critical samples," Grasmueck said, "integrating sedimentology, stratigraphy, structure and geochemistry in an accurate 3-D spatial framework."

## **The hot rock**

Rensselaer County is a Saudi Arabia of graywacke, a valuable deposit prized for highway construction; so what could be the problem?

By **BOB GARDINIER**, Staff writer

First published: Albany Times Union (Sunday, December 4, 2005)

**BRUNSWICK** -- With one explosive shot in the Callanan Industries mine off Route 2, \$350,000 worth of sparkling gray rock tumbles into a pile of SUV-size boulders, riches from the hills of Rensselaer County.

It's called graywacke, pronounced GRAY-wack, or by some in the mining industry, GRAY-wacky. A huge deposit of it, in some places 1,500 feet deep, runs just under the topsoil through eight of the county's 14 towns. The bedrock under the whole town of Grafton is graywacke. "We take about half a million tons a year out of this site," says Andy Stokes, the senior vice president of Callanan Industries in charge of carving this rock of ages out of hills at the end of Palitsch Road in the hamlet of Cropseyville.

Rensselaer graywacke, borne of an ancient ocean, is found nowhere else in the state. The rock, with its high quartzite content, is excellent for road construction. Its grittiness is essential for nonslip highway surfaces. Graywacke also is used to build everything from homes to shopping malls, roads to railroad track beds.

Yet as valuable as the rock is, the communities lucky -- or unlucky -- enough to be part of Rensselaer county's unique geology have sometimes paid an even higher price. The county is home to two graywacke mines with proposals for two more. Callanan and Troy Sand & Gravel each have applications before the state Department of Environmental Conservation to take the rock out of separate locations just over a mile apart along Route 66 in Nassau. Opponents say the mines are noisy and dusty and fill the roadways with large, heavy trucks. They worry the blasting could damage wells and house foundations.

The industry and the state say the mines are a necessary evil: The rock they yield saves lives on state highways. "We require it on highway projects and roads with many lanes and many lane changes, exit and entrance ramps, lots of stopping and going and high volume and frequency of volume," says Peter Graves, state Department of Transportation spokesman. Rensselaer graywacke, Graves says, provide unparalleled skid resistance. "Imagine rubbing coarse sandpaper across your face," Stokes says, putting his hand to his cheek. "It's not only like that on the road surface, but the unique hardness of the Rensselaer graywacke has a long life span. It is not easily rounded off or smoothed."

Stokes, in a yellow hard hat, stands near towering gray pyramids of the piled stone in the company's stock yard. The graywacke is fresh from huge manganese steel crushers that chew up the large, blasted chunks and spit out a variety of sizes, each dumped in a separate pile for trucks to load. Graywacke sells for \$5.95 to \$13.05 a ton depending on the size and how clean it is. The most valuable size -- 1/4 -inch to 1/8 -inch rocks, called 1A -- is prized by the state and federal government for a highway paving process called Superpave (SUPERior PERforming Asphalt PAVEMENTS).

The federally funded Strategic Highway Research Program set Superpave standards about 10 years ago to help highway engineers and contractors design asphalt pavements that will perform better under extremes of temperature and heavy traffic loads. The study determined graywacke is a premier ingredient for better highways, Stokes says. This past summer, many tons of the rock from the Callanan mine made the new smooth riding surface of reconstructed I-90 between the Patroon Island Bridge and Thruway Exit 24 toll plaza.

The super-hard rock sits in a deposit called the Rensselaer Graywacke Bedrock, a 6- to 8-mile-wide deposit that runs from the southern edges of Pittstown and Hoosick south about 24 miles ending near the southern edge of Nassau and Stephentown. The rock formed 400 million to 500 million years ago from

sediments that fell to the bottom of an ocean that once covered the county. "If you go back, let's say 10,000 years, there was a ice sheet a mile thick covering the area," said **Gerald Friedman** of the Northeastern Science Foundation in Troy, emeritus professor of geology at Rensselaer Polytechnic Institute. "Erosion from receding glaciers also helped expose the rock." The rock was formed when older igneous and metamorphic rocks eroded and the sandy sediment, consisting of quartz sand, settled to the ocean floor. It was then cemented together with silica or calcium carbonate, **Friedman says**. "It was very far beneath the surface but upheavals in the Earth's crust pushed it closer to the surface and then ages of erosion exposed it to the light of day," **Friedman** said.

Mining at the Callanan site began in 1951 when it was run by Fitzgerald Bros. Construction. In 1982, the business merged into Callanan, which is owned by Oldcastle Inc., a subsidiary of the multi-national Dublin, Ireland, based CRH-PLC. The mine can produce 350 tons of graywacke an hour.

The state has strict guidelines for mine approvals and, especially, for hiding mining activities from residential neighbors. But that is not always a perfect science. G. Lawrence Kronau, a retired state trooper, moved to Bulson Road, just over a half-mile from the western rim of the Callanan mine, in the 1970s. He paid it little mind until recently. "When I first moved here they were mining a section farther away from our house but they have been moving their operation closer," Kronau said. "We always heard or felt the blasting, but now we can hear, sometimes even inside the house, the rock crushers, trucks and other equipment, especially if the wind is in the right direction."

The movement to limit mining in Nassau was vigorous enough to influence recent elections. Longtime incumbent Supervisor Carol Sanford lost to newcomer Raymond Seney, a mining opponent, in an upset. Democrat Michael I. Roland, who is also against mining, won a spot on the Town Board in the Republican-dominated town. Opponents of the two mining proposals in Nassau and East Nassau formed grass roots groups, Residents Against Mining (RAM) and the Dunham Hollow Civic Association. The two have regular fundraisers to get the money to fight the proposals.

The town of 4,818 residents has been in upheaval for more than two years over the proposals. "One of the big concerns is that, if they get approval, what happens after that," said George Firth, member of the Dunham Hollow Civic Association and a mining opponent. "Once they get approval is it easier to expand, move in other operations. We are going to do everything we can to fight these mines." The Dunham Hollow Civic Association and some residents of that hamlet are in the midst of a fight to form their own village to wrest zoning and planning power from the town. "You try as much as you can to work with your neighbors but I think there is no question that over the past five to 10 years there is a growing perception by the public on how and what people can successfully protest," Stokes says. The controversy is nothing new for Nassau. The village of East Nassau was formed in 1997 by mining opponents after an eight-year fight against a proposal to mine graywacke on Snake Mountain. Lane Construction of Connecticut lost that battle after the state decided the project would mar the view.

One thing is for sure. After a mine is approved, it's a business that lasts. Rock was first blasted out of the Callanan site 54 years ago and the mine has a life of up to 20 more years, Stokes says. Callanan also has a mining permit for an adjacent property that could keep the operation going for many more years.



## AIR AND WASTE MANAGEMENT ASSOCIATION (AWMA) NORTHEAST SECTION:

The Mid-Atlantic States Section of the Air and Waste Management Association (MASS-A&WMA) is a professional non-profit association of engineers and scientists working in the environmental field, with a particular focus on issues related to air and waste. The Association strives to provide an opportunity to enhance the profession by providing opportunities for its members to network with other professionals.

Visit the AWMA website for information on professional activities and updated news!

[www.mass-awma.net](http://www.mass-awma.net)



## THE GEOLOGICAL SOCIETY OF AMERICA (GSA)

The GSA strives to be a leader in advancing the geosciences, while enhancing the professional growth of its members, and promoting the geosciences in the service of humankind.

Discover events and information at their website: [www.geosociety.org](http://www.geosociety.org)



## New York State Museum

The **New York State Museum** is a major research and educational institution. It is dedicated to promoting inquiry and advancing knowledge in the fields of geology, biology, anthropology, and history, through the investigation of material evidence germane to New York State's past, present and future.

For information on upcoming exhibits visit: [www.nysm.nysed.gov](http://www.nysm.nysed.gov).

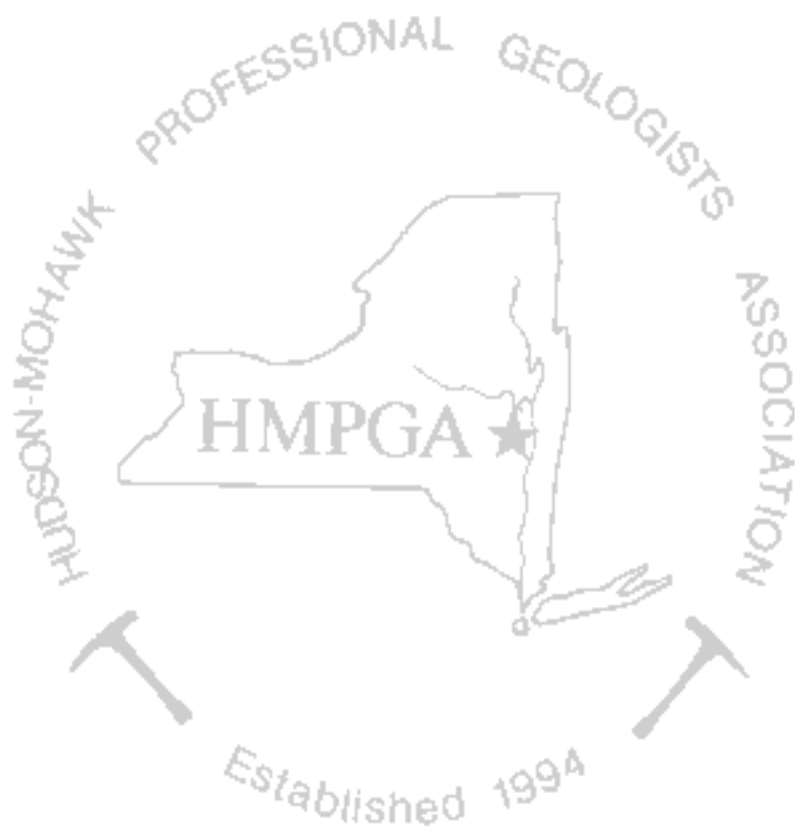


## New York State Council of Professional Geologists

*The **NYSCPG** strives to strengthen and advance the geologic sciences as a profession, promote the protection of public health and welfare and the environment through the professional practice of geologic sciences, and create high standards of ethical conduct among its members and within the profession of geology, as well as the legal standing of geologists and their ability to practice geology in New York State by promoting the licensing of geologists in New York State through statutory regulation.*

To learn more about supporting the licensure of professional geologists in NYS, visit: [www.nyscpg.org](http://www.nyscpg.org)





---

**HMPGA**  
**P.O. Box 5506**  
**Albany, NY 12205-0506**

*Forwarding Service Requested*

**First Class**