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## 1984 - 2004 20 YEARS OF EXCELLENCE IN GEOLOGY & GEOPHYSICS!

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### Message from the President

*Twenty years. My, my. A milestone like this makes me momentarily reflect on where we've been and where we are going. As fond as I am of multitudes of memories from H-R's first twenty years, however, I find I can only look forward to the next twenty years with more eagerness than I ever felt or foresaw in 1984.*

*H-R started out, like so many consulting practices, simply as a way for me to try to scratch out a living after being 'downsized' from my old job. There was no grand plan, and certainly no business plan. But H-R eventually took on a life of its own. With two offices and a current staff of seventeen, H-R has evolved into a significant niche specialty firm with a national reputation for providing quality surface and borehole geophysical services.*

*The heart of H-R has always been people. In our case, 'people' means not just the H-R staff. 'People' also includes the client representatives with whom we work and the public for which the work is ultimately performed.*

*H-R has a superb staff, bursting with professionalism, patience,*

*perseverance, and pluck. Our staff makes me beam with pride every day.*

*H-R is fortunate to work with client representatives who realize that cheapest is not always best, who wisely set realistic goals, and who inherently recognize that although geophysics may not provide all the answers, it does provide valuable information about subsurface conditions not easily obtained any other way. Our client base includes so many individuals I admire, respect, and best of all, genuinely like.*

*As H-R has matured, I think we all have also become increasingly sensitive to how our geophysical contributions to geoengineering and geoenvironmental projects truly help to safeguard the public and preserve our natural and cultural resources. We feel privileged to be a part of the projects on which we work.*

*At the age of twenty, H-R is like a young adult – full of promise, eager to explore more of the world, and ready to try to help make it a better place. You can help us continue to grow and learn. You can **call us!***

*Cordially,*

*Dorothy Richter  
President*

## Quality Takes Time

Why is it that so many owners want instant results nowadays? We know that the time demands come from your clients, but we have received calls for reports before our crew has even left the site. One client rep actually clapped hands for our crew to move ahead before properly completing utility clearances, apparently not recognizing that haste can directly jeopardize health and safety. H-R has always strived to provide quality and timely results, but **quality takes time**. The Salem technical staff, **Steve Grant, Mark Kick, Mohammed Hayat, Suzi LeFrançois, and Jeff Reid** have been scrambling with projects at locations all over the northeast, including what has seems like a thousand major oil service station sites. The New Jersey technical staff, **Jim Coffman, Alexis Martinez, Rob Garfield, and José Carlos Cambero Calzada** continue to increase their intimate knowledge of the New York - New Jersey area by working at sites across the region. **Lyn Mercer and Bill Desmarais**, our fabled office anchors, assisted by **Oren Hunt**, have been breathless this year trying to keep up with the administrative and CAD work to support the firm. We have two requests – *please* allow us to complete your field work properly, and *please* give us the time to process the data and prepare a quality deliverable for you. If you want to be *pleased* with the results, **call us!**

## Focus on Borehole Geophysical Imaging

H-R spent much of its 20<sup>th</sup> year running borehole geophysical logging surveys that involve imaging in-situ conditions in bedrock. A few examples are:

- Acoustic televiwer, caliper, and natural gamma ray logging in vertical and angled boreholes for the Croton Water Treatment Plant and tunnels project at sites known as Eastview and Mosholu in New York. **Rob, Alexis, José, Jim and Jeff** all contributed to these two significant projects related to the New

York City water supply system for **Parsons Brinckerhoff**.

- Acoustic televiwer logging for the new Freedom Tower at the World Trade Center site. **Rob and Alexis** were proud to document bedrock fractures in exploratory boreholes at this special site for **Mueser Rutledge Consulting Engineers**.
- Continued acoustic televiwer logging for the 2<sup>nd</sup> Avenue Subway Project in Manhattan for **DMJM Harris - ARUP**. Our New Jersey staff – **Rob, Alexis, José Carlos**, and **Jim** participated.
- Acoustic televiwer logging for **The PB Team** for the No. 7 Subway Line Extension Project in Manhattan. Our New Jersey staff – **Rob, Alexis, José Carlos**, and **Jim** all contributed.
- Optical and acoustic televiwer logging as part of rock slope stability analysis for a new roadcut in Vermont for **Golder Associates**. **Rob Garfield** conducted the logging from the back of our Honda all-terrain vehicle. The work on this project led **Dorothy Richter** to participate in a joint paper/presentation with Pete Ingraham and Heather Crow of **Golder Associates** and Tom Eliasson of **VTrans** at a TRB geotechnical section meeting held in conjunction with the 55<sup>th</sup> Highway Geology Symposium in Kansas City in September.

It looks like H-R will spend much of its 21<sup>st</sup> year the same way, with continued work for two subway lines in Manhattan (2<sup>nd</sup> Avenue Subway Project and the No. 7 Line Extension Project) and future work, such as:

- Acoustic televiwer logging, crosshole seismic testing, and parallel seismic testing for the **Eastside Access Project**, a major project to provide railroad access between Queens and Grand Central Terminal for the **General Engineering Consultant** team.
- Borehole geophysical logging for the new **Upper Rouge CSO Tunnel** in Detroit for **Parsons Brinckerhoff**.

The value of borehole geophysical logging lies in the continuous information about in-situ subsurface conditions it provides. Geophysical logging provides data that otherwise might be lost in zones of poor core recovery. Televiwers provide reliable statistical information about dip and dip direction of fractures and fabric. H-R has invested in the latest generation downhole tools and processing software to provide quality data to our clients. Focus on what is important for your projects, then **call us!**

## H-R & the Lightkeeper

The first lighthouse in America was constructed in 1716 on Little Brewster Island in Boston Harbor. The original structure was destroyed by the British in June, 1776, and the present lighthouse was constructed in 1783. Boston Light is the last lighthouse in the country manned by active duty personnel from the U.S. Coast Guard.

Little Brewster Island is a part of the Boston Harbor Islands National Park Area, which is managed by a partnership of thirteen public and private agencies. One of the missions of the partnership is to make the islands more accessible for public recreation. As part of a baseline survey of cultural resources on Little Brewster Island, H-R was contracted by the **Island Alliance** to conduct an island-wide geophysical survey to search for possible archeological artifacts under the technical direction of the **Archeological Branch** of the **National Park Service Northeast Cultural Resource Center**.

Hey, another fun archeological project at an historically significant site, we thought. And indeed it was. After all, the tiny island has been inhabited for ~288 years. **Jeff Reid and Suzi LeFrançois** spent three beautiful indian summer days on the island conducting high resolution geophysical surveys using EM, magnetics, and GPR. The best part of the field work, they will tell you, is that they stayed two nights in the historic lightkeeper's house with the current Coast Guard lightkeeper and the official lighthouse dog, a privilege verrry few people enjoy! Keep the light shining on your project goals. **Call us!**

## H-R & the Gravedigger

H-R has conducted geophysical surveys in both modern and historic cemeteries on numerous occasions. It is always interesting and touching work. So it was no surprise when we were asked by a cemetery 'operations' manager to conduct a survey at another cemetery last spring. Little did we know, however, that the cemetery was part of a extremely touchy public relations issue between a church and its neighbors.

**Suzi LeFrançois** and **Jeff Reid** were in the thick of it. Suzi tactfully fended off the press and several uninvited visitors while conducting high resolution geophysical surveys using GPR and an EM61-MK2. Jeff interacted with attorneys for the church and the county and even representatives from the police.

H-R was retained for its technical excellence, but our sensitivity to confidentiality was respected by both the client and the public representatives. Only the media folks were disappointed because they could not pry a story out of us. Needless to say, H-R's geophysical work is a critical element in as-yet unresolved issues at this site.

When a project requires sensitivity to public relations as well as technical excellence in geophysics, you should *call us!*

## H-R & the Case of the Missing Pool

H-R routinely performs geophysical surveys to detect structures in the subsurface such as tanks, utilities, drums, foundations, and whatnot. But this project was the first case in which we were asked to locate a large buried swimming pool. **Jim Coffman** used EM (Geonics EM61) and GPR to survey a vacant parking lot situated over a former fairgrounds. The anomaly produced by a 100' by 45' former swimming pool is nothing short of spectacular. Even the shallow end of the

pool can be distinguished by the sharply higher amplitude anomaly at one end.

Don't hesitate to get your feet wet, *call us!*

## H-R & the Big Dig

Boston's Big Dig has been getting a bit of bad press lately, but that issue is unrelated to H-R's participation in the complex engineering project. Ten years ago, in February, 1994, we received a call to provide geophysical services to designate the locations of underground utilities for a day or so for **The BSC/Cullinan Associates**, the survey managers of Boston's Central Artery/Third Harbor Tunnel Project.

H-R had previously provided various geophysical services on a short-term basis for other portions of that gigantic project, and we assumed this would be a routine brief engagement. We sent one of our excellent staff geophysicists to perform the survey. A few days later, we received another call asking if that geophysicist could be assigned to the Project for a somewhat longer basis – like a year or more. Our geophysicist obviously made a very good impression.

Ten years later, H-R is still providing excellent technical personnel for the Big Dig. **Carl Gruszczak** holds the record as H-R's longest dedicated person on the Project, having started in 1997 and still learning new skills. **Mike Ryan** and **Paul Heffernan** are working on a separate Big Dig contract for **Cullinan Engineering**. We are so proud of them.

H-R's excellent staff is a primary reason to *call us!*

## H-R Service Areas

- **Surface Geophysics** – Ground Penetrating Radar (GPR), Seismic Refraction & Reflection, Multi-channel Analysis of Surface Waves (MASW), Electromagnetic Induction (EM31, EM61), Resistivity Soundings and Imaging, Magnetics, VLF, Blast/Vibration Monitoring, Subsurface Utility

Detection/Designation, and more.

- **Borehole Geophysics** – Borehole Geophysical Logging (Acoustic Televiewer - ATV, Optical Televiewer - OTV, Heat-Pulse Flow Meter - HPFM, Caliper, Fluid Temperature, Fluid Resistivity, Natural Gamma Ray, SP, Normal Resistivity, EMI conductivity, etc.), Borehole Video Logging, Video Inspection of Deep Drilled Shafts, Crosshole Seismic, Borehole Radar, and more.
- **Non-Destructive Testing Services (NDT)** — Piles and Foundations, Void Detection, Rebar Detection.
- **Dimension Stone Testing & Evaluation Services** — ASTM Testing, Failure Analysis, Quarry Evaluations.
- **Litigation Support Services** — Document Review, Consulting, Expert Testimony.

Surely those are reasons enough to *call us!*

## Our Mission

*To fulfill our clients' needs in geoscience, using experienced professionals who enjoy their work and are totally committed to quality and professional development.*

## WBE/DBE Certifications

- New Hampshire DOT
- Vermont AOT
- Maine DOT
- SOMWBA (Massachusetts)
- Mass Highway, MassPort, MBTA
- Connecticut DOT
- Rhode Island Dept. of Development
- Empire State Development (NY)
- New York State DOT
- Metropolitan Trans. Authority (NY)
- The Port Authority of NY & NJ
- New Jersey Dept. of Commerce
- New Jersey DOT
- New Jersey Transit Authority
- Ohio DOT
- Indiana DOT
- Illinois DOT
- Texas DOT

## H-R STAFF

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