



GRL
engineers, inc.

PDI
Pile Dynamics, Inc.

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GRL Engineers, Inc.

GRL Engineers, Inc. is the new name of Goble Rausche Likins and Associates. The change reflects the retirement of founder and long time partner Dr. George Goble, and highlights the pride that GRL takes in its team of highly experienced engineers. GRL will continue to provide the same high quality dynamic testing services under the new name, as in the past. Phone numbers, faxes, e-mail addresses and office locations remain the same.

Berkel & Company Contractors Uses Latest Technology for Pile Monitoring and Testing

By Tracy Brettmann
Berkel & Company Contractors, Inc.

For the past several years Berkel & Company Contractors, a large auger pressure grouted (APG) pile contractor with multiple US offices, has been using Pile Dynamics' PIR-A (Pile Installation Recorder for Augercast Piles) and performing high strain dynamic testing on APG piles. This relatively new PIR-A technology for APG piles has been utilized on many of Berkel's large projects throughout the country.

The PIR-A equipment automatically monitors and records key aspects of the pile installation. Measured auger tip depth, hydraulic pressure (torque), and time are recorded during drilling. During auger withdrawal (grouting), depth, grout volume, grout line pressure and time are recorded. Grout volume is measured directly with an in-line magnetic flow meter rather than indirectly through a pump calibration. The results are then digitally recorded and printed. The PIR-A provides accurate, dependable and useful data for monitoring and reporting of APG pile installation.

High strain dynamic testing of APG piles has also been a new and growing technology for Berkel's projects. Dynamic Testing on APG piles is performed using a Pile Driving Analyzer® (PDA) and the results are analyzed using CAPWAP®. In order to better mobilize the high capacities developed with APG piles, Berkel employed GRL's APPLE Load Testing System. The significant ram weight of the APPLE (starting at 7.5 tons) easily activates pile capacities of 400 to 500 tons on 18-inch-diameter piles. (Higher loads can be proven on larger piles using larger GRL APPLE systems.) The results of the high strain dynamic tests have compared well with the static load testing results.

ASTM Standard for Cross Hole Sonic Logging

The American Society for Testing and Materials has issued a new standard for Cross Hole Sonic Logging, ASTM D-6760. The standard may be obtained from the ASTM website, www.astm.org. *Garland Likins* contributed his expertise to the preparation of this standard.

ASCE Deep Foundations Congress in Orlando, Florida, February 14 to 16, 2002

About 500 professionals met in Orlando for an ASCE sponsored three day update on the latest developments in deep foundation technology. There were 108 papers presented at six parallel sessions, producing more than 1,500 pages of proceedings. Approximately half of the papers dealt with design, the next largest group was on testing.

Participation by Pile Dynamics and GRL was significant: *Garland Likins* (PDI) led workshops on Low Strain and High Strain Testing and presented two papers, "Alternate Verification Methods for Augercast Piles" and, in cooperation with *Dr. Ken Bell* of Bechtel, "Proven Success for Driven Pile Foundations". *Brent Robinson* (GRL Central) presented "Dynamic Load Testing of Drilled Shafts at National Geotechnical Experimentation Sites", and *Mohamad Hussein* (GRL FL) presented "The Use of Superposition for Evaluating Pile Capacity". *Dr. Frank Rausche* (GRL Central) lectured on "Prudent, Practical and Efficient Use of NDT Software".



The cell phone to cell phone transmission capabilities of the remote PDA (PAL-R) were successfully demonstrated in conjunction with the Congress prediction contest. The contest consisted of predicting the static capacity on two previously driven pipe piles, one tested in compression and one in tension, and predicting blow counts on a third pile installed during the live field demonstration. Unexpected challenges were encountered: GRL performed the uplift test with its static test electronic measurement system. The test was interrupted when the tension bar yielded at 35 tons. The compressive test was performed by the University of South Florida and ended at 135 tons when the applied load exceeded the dead load reaction system. Thus, in both cases no ultimate load was verified.

The blow count part of the contest also presented difficulties since the relatively small APE 8-22 reached 1,200 blows per foot at a depth of 15 ft. After driving through this layer, the pile advanced to a final depth of 45 ft with final blow count of 55 blows per foot. The same APE 8-22 had driven the static test piles with maximum blow counts of 180 blows per foot in the upper dense layer. The test was instrumented, and data processed with the PAL-R. *Ameir Altaee* of Urkkada had predicted the highest blow count and won the contest. The rewards for the other two static prediction contests were given to universities.