

PROBING TIMES

Information for the ENVIRONMENTAL, GEOTECHNICAL, GEOTHERMAL, & EXPLORATION Industries

2014: Come Along for the Ride

*Geoprobe® blasts into 2014 with great energy and enthusiasm! What makes this the year to introduce **Two New Machines** and multiple **New Tooling Lines**?*

BUSY CUSTOMERS

Numerous customers are looking for ways to grow their Geoprobe® fleet in order to meet a growing workload. **Feedback from around the world is positive.** Their Geoprobe® equipment is performing well and completing more projects than anticipated.

EXCEPTIONAL TEAM

We see 2014 as a year for Team Geoprobe® to shine! Geoprobe® is a group of individuals that utilize their specific skills in a team approach to do good work. It's still work, but together we succeed.

NEW GEOPROBE® 3230DT

Geoprobe® machine engineers have done it again! After multiple years of design and test work, the new Geoprobe® 3230DT combination machine goes to production. **The 3230DT is rotary strong and direct push solid.** This unit was designed for the geotechnical driller, with the features needed to excel in the geotech market. Feedback on the 3230DT shows great industry opportunities.

NEW GEOPROBE® 8150LS ROTARY SONIC

Geoprobe® has engineers focused on sonic machines and tools. Our current sonic customers continue to succeed and their sonic business is expanding. Some of those customers have specifically requested **a larger sonic platform with more power to advance larger diameter tools to greater depth.** We're now in production of an all new Geoprobe® 8150LS large track rotary sonic rig with a Geoprobe® designed and manufactured GV5 Sonic Head (50,000 lb. dynamic force at 150 Hz).

NEW TOOLING

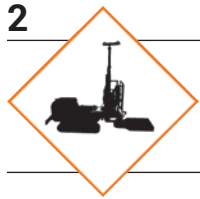
You can't have new machines without new tooling, and, true-to-form, the Geoprobe® tooling design team continues to improve and expand upon existing tooling. In 2014 you'll see new tooling options, such as 2.0 in. Slim Prepaks, DT37 and 3.75 in. tooling system, and DT60 tooling with an optional, compact liner system. And that doesn't include the new sonic tooling!

NEW DIRECT IMAGE® LOGGING TOOLS

The 2014 Geoprobe® product lineup also includes new specialty DI logging tools, and **there's no shortage of new technology here!** The next generation Low-Level MIP, new DI Probe Rod System, new MiHpt Probe, and Groutable Tooling lead the DI equipment list. Yes, more new ideas from Team Geoprobe®.

That's a long "NEW" list for 2014, but that's what we do. We believe the Geoprobe® team continues to grow in knowledge, capability, and industry value. And we're thankful for the opportunities we have to work with each of you. We believe 2014 will be a good year, and we invite you to enjoy the ride the us!





NEW Geoprobe® 8150LS Sonic

BIG SONIC POWER

Geoprobe Systems®
Takes Another Big Step
and Introduces a
Full-size Sonic Rig for
the Drilling Industry

There are many ways to advance casing in the subsurface. One option is sonic technology. In 2001, Geoprobe Systems® began investing significant engineering resources into the development of new sonic machines and tooling systems. In 2009 (the year of the first Geoprobe® Open House), we unveiled the 8140DT with our patented GV4 sonic head. The 8140DT was a mid-sized sonic machine, and the GV4 had the dynamic force required to advance 6-in. casing to depths in excess of 100 feet as well as surface casing up to 11-in. OD (the limit of the breakout). With up to 4,000 ft-lbf of torque and up to 120 rpm, the two-speed rotation on the GV4 had the torque needed to maintain rotation in tight formations (and has proven successful on drill sites around the world). But what if we had more power? What about those jobs that require larger casing to greater depths?

8150LS Unique Features

- COMPACT PACKAGE •

Fits into an ocean-going container.

- ROD HANDLING OPTION •

More powerful. Safely handle large diameter tooling off of vertical.

- DRILL MAST SIDESHIFT •

Quickly and easily line up on hole without moving the tracks.

Genuine
Geoprobe®



THE Probing Times

Machines



The NEW GV5 Sonic Head on the 8150LS is designed, built, and serviced by Team Geoprobe®. It has a theoretical dynamic force of 50,000 lb. at 150Hz, a substantial increase in power from our 8140 series sonics.



The 8150LS Sonic Design Engineers: Kaufmann, John Frost, Mark Abker and Brent Kejr.

• Superior Tooling

Design It. Test It. Manufacture It.

None of the Geoprobe® sonic tooling design or manufacturing process is outsourced. It's the only way to maintain total control of production. And it's the way we can assure the delivery of high-quality products with the consistency of performance you've come to expect from the Geoprobe® brand. The Geoprobe® sonic product line has the widest array of bits and sampling systems available, from conventional telescoping soil coring to dual tubing and face flush bits for rock coring. Geoprobe® sonic tooling joints are engineered for ease of makeup and breakout with no galling or deforming in the thread area. Our goal: superior products that improve existing technology, and to develop new technology that increases efficiency and improve results in the field.

• New Sonic Head

More Power Needed from the Head

So we began a multi-year process of designing a new sonic head: the GV5. With a theoretical dynamic force of 50,000 lb. at 150 Hz, and a 2-speed rotation with 4,000 ft-lbf and up to 140 rpm, this new head is a substantial increase in power. And, most importantly, it's designed, built, and serviced by Team Geoprobe® so you can be confident when you take this head to the field.

• Big Horsepower

The Ripple Effect

Of course none of our existing carriers had the power needed to effectively run this new GV5 sonic head. So we designed a totally new track chassis.

The 225-horsepower 8150LS is unique in several ways. First, we added positioning functionality. Not only does the drill mast move fore and aft relative to the track base, it also can be shifted left to right, up and down, and run at angles up to 45 degrees off of vertical. Second, we added additional winch options, including a 400+ foot sand-line. Third, since an 8150LS can go deeper and accommodate larger tooling we added a 14-in. breakout option and a more powerful rod handler. Fourth, we made extras, like a shifting breakout and weight-on-bit control--standard. And finally, we wanted to make mobilization between international projects simpler, so we designed the 8150LS to drive right in to a 40 ft. high cube shipping container (door opening: 101in. x 92 in. [31 m x 28 m] tall).

Geoprobe® Carbide Bits, in 4-, 5-, 6-, 8- and 10-in. sizes, are designed with unique water channels for cutting through consolidated formations (rock) where face flushing is needed.



The 8150LS Sonic: a powerful, full-size sonic rig from Geoprobe®.



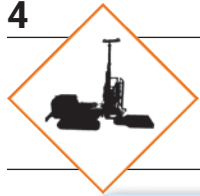
The new 8150LS features a 14-in. breakout option and a more powerful rod handler.

• Industry-Leading Support

Equipment Training and Service Support

Geoprobe Systems® has the best service center in the drilling industry. When our customers call with a need, we respond. We also offer comprehensive sonic training, typically to new operators that have never had sonic experience, but also to seasoned operators who are new to Geoprobe® equipment or who request our services. Trained operators are important in order for customers to maximize their investment. Our training includes instruction in the operation, maintenance and use of Geoprobe® sonic products. Hands down ... there's none better!

As a leader in sonic technology for the drilling industry, look to Team Geoprobe® to manufacture the highest quality machine that's totally Geoprobe®, from the mast to the toes. We see the 8150LS as an important addition to our lineup for drillers needing the power and control to complete complex holes.



NEW 3230DT

Most Versatile Geoprobe® Rig

We've had the opportunity to work with geotechnical drillers for many years. Fortunately, many geotechnical drillers have been successful utilizing our 78 series product line. But during customer interactions there commonly comes a point in the dialogue where the 'wish list' conversation gets rolling. It starts simple: "I sure wish we could do ____." Here's another one we hear: "Could you provide one rig that can do ___ plus ___? It sure is a pain to mobilize two rigs to one jobsite." And lastly: "If you made a rig with ___ we could increase productivity by ___ percent." Regardless of the request, Geoprobe® engineers take note and consider the best solution to the desire of the customer; in this case, the geotechnical driller.





The centerline side-shift function of the 3230DT allows you to move the head to the side so you can work the inside diameter of the rod without moving the foot.



Our dialogue with geotechnical drillers has come full circle! Geoprobe® is now releasing the all new Model 3230DT: a mid-sized tracked drill rig combining advanced direct push functionality with traditional geotechnical auger rig capabilities. Here's the scoop.

Mid-Sized Platform with More Power.

Geoprobe® is known for small base platforms, but there are times when the driller just needs a little larger base to work from and the drilling operations require more horsepower. The 3230DT base is slightly larger and comes equipped with a 99 hp diesel engine. This is a 41 hp boost over the 78 series line. The rig has the power needed to successfully complete geotechnical rotary work while reducing upfront and operating costs. And the sturdy Geoprobe® frame rail mounting system makes it simple to outfit the unit with accessories for your specific tasks. The 3230DT's rear stabilizer is compatible with the Geoprobe® Drop Rack System which can be used to move up to 3,000 lb. of tooling, water, and supplies to the hole.

Drill Mast.

The 3230DT drill mast may be one of the more unique aspects of this new offering. With a retraction force of 80,000 lb. at the cylinder and 84 in. of travel, the 3230DT has the pullback needed for direct push work. For DTH hammer and diamond coring work, the optional head feed pressure control allows the operator to simply control the weight on bit from the control panel. In addition, the 3230DT can be equipped with multiple winches and a telescoping winch mast allowing the tripping out of 20-foot sections of tooling. The drill mast outriggers are another feature that is useful for rotary work. Lastly, the 3230DT can be equipped with multiple tool breakout options.

High-Speed Rotary Heads.

There's no field work getting done without a head, so Geoprobe® engineers started out with the Model 8040DT CB8 head and tweaked it a bit. The basic layout of the head is the same ... parallel shaft gearbox with 26 in. of sideshift. We kept our patented hydraulic head clamp to safely and quickly pull rods while maintaining an open ID. For direct push work, we have a new hydraulic hammer; the GH70 (splitting the difference between our popular GH60 and GH80 class hammers). For rotary work, in addition to the 2-speed head, we offer a new 4-speed drive with 6,000 ft-lbf of torque and a top speed of 800 rpm. Rounding out the head is the new DH105, an automatic drop hammer for SPT work that is hydraulically swung out over the hole.

To date, the 3230DT offering may be the most versatile machine we've ever designed. It's a true combination machine. Field use is already proving that the 3230DT can do lots of things well. For the 3230DT user this results in quicker project completion, easier work for the operator, and higher utilization rates.



The 3230DT Machine Design Team: Nathan Peters, Jon Baier, Josh Dreiling and Darin Huelsman.

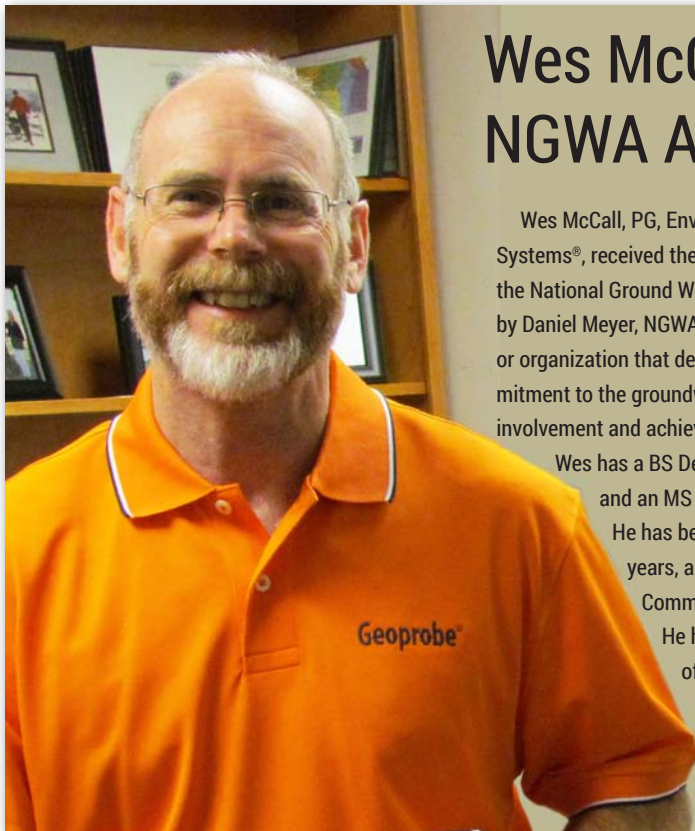


Taking SPT split spoon samples with the new 3230DT at a construction site.



Team Spotlight

THE Probing Times



Wes McCall Receives NGWA Award

Wes McCall, PG, Environmental Geologist at Geoprobe Systems®, received the 2013 Special Recognition Award from the National Ground Water Association. The award, presented by Daniel Meyer, NGWA President, is presented to an individual or organization that demonstrates dedication, service, and commitment to the groundwater industry and community through involvement and achievement on a local or regional level.

Wes has a BS Degree in Geology from Clemson University and an MS Degree from the University of Missouri.

He has been a member of Team Geoprobe for 19 years, and is an active member on the ASTM D18 Committee and an active member of the ITRC.

He has also authored or co-authored a long list of technical publications, and participates in presentations and training seminars at national and state conferences.

Congratulations, Wes!

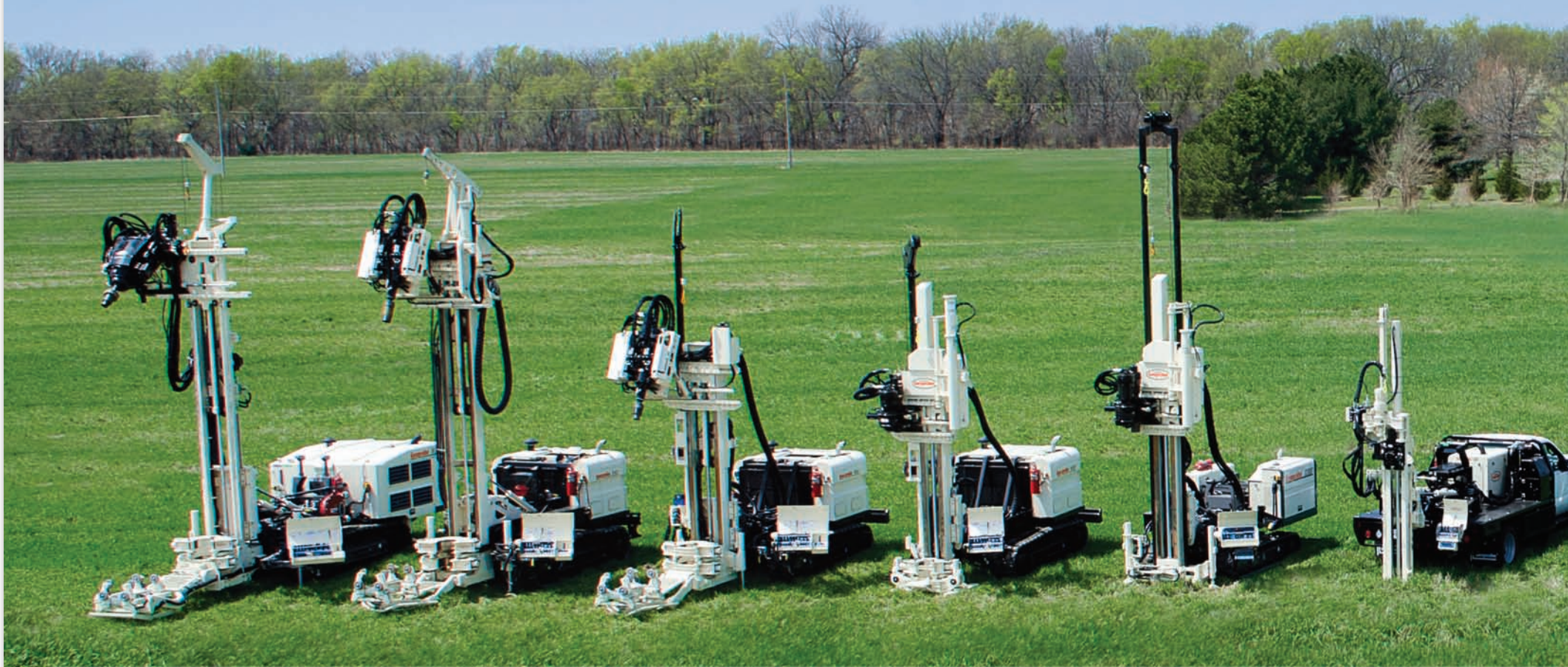
"I have worked with Wes for over ten years on different projects. His knowledge of things 'Geoprobe®' has always astounded me. No matter how complex the problem, no matter how logistically difficult it is, he always comes up with solutions. Down to earth, personable, creative, and always there when needed. Talk about when needed! I teach a field methods class every year and something always seems to go wrong at the last minute. A quick call to Wes usually fixes the problem, but most of all calms me down. Wes has the most wonderful demeanor. I cannot think of anyone more deserving of the NGWA award. Congratulations, Wes."

Gary A. Robbins • Professor of Geology • University of Connecticut • Storrs, CT

"The NGWA Special Recognition Award specifically recognizes 'dedication, service, and commitment to the groundwater industry.' I think that phrase is an appropriate description of Wes McCall. In his 19-year career at Geoprobe Systems® he has been tireless in applying our tools to solve real world problems. Wes has been responsible for testing our sampling products for many years, and more recently testing our logging tools. He has so much experience in the subsurface; that makes him very effective in training others in site investigation methods. In addition he has been the driving force behind the development of our permeability measurement tools. The NGWA certainly got this one right; our industry benefits from Wes's work.

Thomas M. Christy, PE • Vice President • Geoprobe Systems® • Salina, KS

Geoprobe® Drilling and Direct Push



8150LS Sonic

8140LS Sonic

8140LC Sonic

8040DT

3230DT

7800



Welcome!

Geoprobe Systems® welcomes Steve White and Todd DaBell to the Geoprobe® Customer Service team. Both have extensive experience in the technical drilling industry. Steve will be based in the Houston area, working with customers in the southcentral areas of the U.S. Todd will be located in Indianapolis and looks forward to meeting Geoprobe® customers in the midwest states. Both will continue the tradition of exceptional Genuine Geoprobe® service. Feel free to give them a call to introduce yourself and get acquainted.

Steve White

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Houston, TX
1-800-436-7762
whites@geoprobe.com

Todd DaBell

Geoprobe® Customer Service
Indianapolis, IN
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dabellt@geoprobe.com

Machines for the Technical Driller



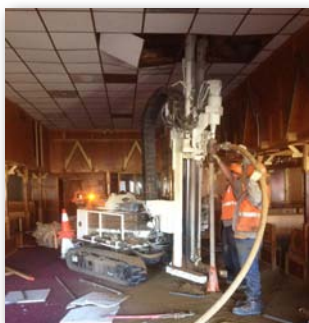
7822DT 7822LC 6622CPT 6712DT 5410 54LT 540MT 420M



Geo Lab's 7822DT: "Our Swiss Army Knife"



Phillip Ricker, Geo Lab Lead Driller, advances 8.25 in. ID hollow stem augers with their 7822DT for 4-in. PVC recovery well installation.



A Geo Lab 6620DT, one of several 66 series track rigs in the Geo Lab fleet, is used to run a 3.5 in. DTH Air Hammer in Roswell, GA, for a pre-purchase property assessment. The work had to be accomplished in a facility with a 14-ft. ceiling. A rock layer was encountered at 18 ft. which necessitated the need for the air hammer.

Brian Strickland, Vice President of Geo Lab in Dacula, GA, believes he's learned a lot since he and a friend drove to Kansas and picked up their first Geoprobe® track rig in 1999. They had already found success with several 5400 truck rigs, but were tired of turning down jobs that required off-road trekking, or even more importantly, hollow stem augered well installations. The new rig headed to Georgia already had several weeks of work scheduled. From their first 66DT to their new 7822DT, Brian and his field team continue find more uses for their Geoprobe® rigs.

Versatility

In a word, he said, it's the versatility that allows Geoprobe® track rigs to be so successful. It starts with the rig's ability to weave through tight spaces within crowded manufacturing facilities, and to crawl through heavy underbrush to access boring locations. Remote locations are now mostly accessible. The low ground pressure allows them to pass through wetlands and move down paths difficult to walk on. But versatility doesn't just apply to all-terrain trekking and limited access capabilities.

Easily Converts from One Technology to Another

"The Geoprobe® brand has come to mean so much more to us than just probing," he continued. "With our fleet of 66, 77 and 78 series track rigs, we've come to rely on their ability to easily convert from one technology to another. We may start with direct push



Robert Taylor and Phillip Ricker set up to bore through rock with the Geo Lab's 7822DT and 3.5 in. DTH Air Hammer.

sampling or logging with MIP/HPT, but then convert to solid stem auguring if we encounter weathered rock."

Bedrock is No Longer Refusal

Bedrock is an invitation for the Geo Lab field team to convert to rock drilling with a DTH Air-Hammer.

Hollow Stem Augers

Geo Lab regularly advances hollow stem augers ranging from 4.25 in. ID to 8.25 in. ID for installation of monitoring and remediation wells, as well as anodes for cathodic protection systems. Brian said they are pleased that the machines adapt to the ever-changing lithology they encounter, as well as the specific requirements outlined in each work plan.

Mud Rotary and Rock Coring

Recently, they began providing mud-rotary services by advancing tri-cone roller bits of various sizes and recirculating drilling mud using a 7822DT and the on-board Moyno® pump. Brian continued, "We're tooled up to provide NQ rock coring services as well. While we haven't yet made the leap to Geoprobe® Sonic, we recognize it's just another step Geoprobe Systems® made to further increase the capabilities and functionality of the 'Swiss-army knife' of downhole investigation machines.

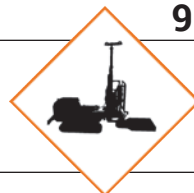
"We can take on each new project with confidence, knowing that we have the right rig combined with a tool in our arsenal for a job well done," Brian added. "We're happy to brag on the machines that make us successful!"



During monitoring well installation, Scudday Horner advances a tricone roller bit with a 7822DT while circulating mud with a Moyno® pump to stabilize the borehole.

Brian Strickland • Vice President
Geo Lab • Dacula, Georgia

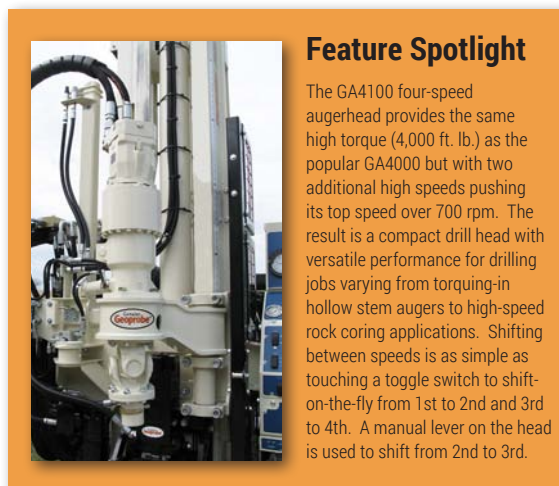
"Geoprobe® track rigs are essential to our business. The growth of our company is attributable, in large part, to customer demand for the capabilities these rigs provide. It's the versatility to convert between multiple downhole tools and technology that provides us our greatest success."



Geoprobe® 7822DT

Built on Features ... Built for Expandability

- Direct Push Soil & Groundwater Sampling
- Augered Monitoring Well Installation
- Standard Penetration Testing
- Direct Image® Subsurface Logging
- Direct Push Monitoring Well Installation
- Underground Storage Tank Investigation
- Angle Probing
- Diamond Cord Drilling
- Concrete Coring
- Mineral Exploration
- Rotary Drilling
- CPT Testing



Feature Spotlight

The GA4100 four-speed augerhead provides the same high torque (4,000 ft. lb.) as the popular GA4000 but with two additional high speeds pushing its top speed over 700 rpm. The result is a compact drill head with versatile performance for drilling jobs varying from torquing-in hollow stem augers to high-speed rock coring applications. Shifting between speeds is as simple as touching a toggle switch to shift-on-the-fly from 1st to 2nd and 3rd to 4th. A manual lever on the head is used to shift from 2nd to 3rd.

At Geoprobe Systems®, we're known for making high-capacity, compact equipment for the technical drilling industry.

The 78 Series rigs are loaded with features and capabilities that enhance subsurface sampling ... from direct push to hollow stem augering, from air and mud rotary to concrete and rock coring. Real success is found when the most efficient, cost-effective solution (the right rig and tooling) is incorporated to finish the task at hand (successfully completing a project and making money for your company). More than ever, Geoprobe® equipment is the best solution with the most options. You'll find the 78 Series rigs to be more powerful to complete rotational drilling projects, designed to work with larger diameter tooling, and equipped with more options allowing you to offer more services to your clients. And with the Geoprobe® customer service team, you can always count on fast and knowledgeable support when you need it.

"Our rig has been in near constant operation on both environmental and geotechnical projects. The flexibility of the machine to perform multiple tasks in a single mobilization allows us to reduce our client's time and expenses. Its versatility enables us to efficiently meet our clients' sampling needs."

Anne Leslie, Owner and President
Raimonde Drilling
Addison, IL

"Due to the small access and overhead wires, we put our new 7822DT on the job immediately. We turned 8.25-in. augers until we hit rock, and then drilled 8-in. air rotary to install a 4-in. monitoring well. We were impressed with the machine's performance!"

Dan Sponseller, Operations Manager
Eichelbergers
Mechanicsburg, PA

"We needed a rig to keep us competitive now and in the years to come. Our 7822DT has done it! I've found its augering capabilities to be one of its greatest strengths. The rig is compact enough for most sites even with the drop rack system. The 7822DT has really made me happy!"

Jeffrey Stone, Drilling Manager
LT Environmental Drilling
Brownsburg, IL

"This new 7822DT model is so nice to run. The main system display screen is very user-friendly and is a huge improvement. It allows the machine to easily communicate with the operator. If anyone has run the older models, I encourage them to run the new 7822DT. They won't go back!"

Donald Zier
Olympus Technical Services
Billings, MT



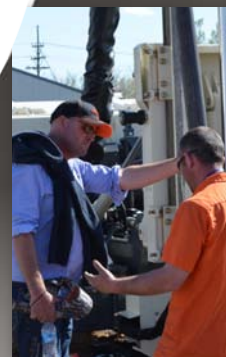
Using the automatic drop hammer on the 7822DT to gather SPT blow counts.



2014 Open House

THE Probing Times

GEOPROBE® OPEN HOUSE APRIL 24, 2014





Another Geoprobe® Open House is in the record books. Some say it was the best yet. We know it was great because we got to do what we like most ... to meet and spend time with our customers and others who are interested in our products, and to show them what we've been working on. Team Geoprobe® spent many hours and numerous long days preparing for our version of 'March Madness' in April. Guests also attended a Direct Image® seminar and a Service Workshop, plus a Customer Appreciation Dinner the day before Open House. The new 8150LS Sonic, the new 3230DT rig, and an array of new tools for those and other machines were on display. You'll be hearing more about them in 2014.

"Thank you for a fantastic two days!"

Our guests were from California to New Jersey, and from Alaska to Texas and Florida. And there were numerous countries represented on our international guest list. Over 200 people in all were in Kansas to share two days in the heartland with us. It was an honor for Team Geoprobe® to welcome them to our facility. As our product offering continues to grow, we hope you decide to grow along with us also. Call us at 1-800-436-7762 to find out about the new products demonstrated at OH14. They're already being tweeted about!

Jeff Green
GSI Mid-Atlantic
Bel Air, MD





6622CPT Rigs Earthquake Tested in New Zealand

"While looking for a CPT machine, we found the Geoprobe® rig ticked all the boxes on paper," according to Scott Sherwin, Operations Manager for Pro-Drill in New Zealand. "So Kris Hines and I embarked on a 16,000 mi. roundtrip to Geoprobe® HQ in Salina, KS, that resulted in us eventually acquiring two 6622CPT rigs for our Pro-Drill clients."

Pro-Drill found the CPT rig in-house training at Geoprobe Systems® to be "invaluable in providing great tuition to the new technologies in an environment that covered all aspects of CPT testing and maintenance of the rig and equipment," Scott said. "Meeting the Geoprobe® team in person also fostered friendship and made it comfortable for us to ask for support once the rig was operating in New Zealand."

Shortly before Pro-Drill purchased their first 6622CPT rig, a devastating earthquake hit Christchurch, New Zealand. With the new rig in hand, Pro-Drill mobilized to Christchurch to provide services to the Earth Quake Commission and geotechnical companies in efforts to rebuild the quake-stricken city.

The field team completed work in some of the most testing geological materials, comprised of silts and sands layered with dense gravel and river pebble beds. These materials made pushing CPT probes very difficult. But in this challenging environment, "Our operators quickly gained a reputation for providing quality testing to depths that bigger machines and seasoned operators could not reach with their equipment," Scott said.

He also stated that, in spite of its small footprint, the 6622CPT has the ability to push cones with the same force as large tracked and truck-mounted rigs while operating in the close confines of earthquake-damaged buildings and homes. The rig has met Pro-Drill's expectations and helped support them in exceeding their client's needs.

Pro-Drill has had numerous contracts all over New Zealand for roads, buildings, railways and development work. They are also introducing their clients to the direct push capabilities of the 6622CPT.

"The hammer head combined with a concrete steel has meant we don't need to engage a concrete cutting company for probing on hard surfaces," Scott added. "That saves time and makes us more efficient. This rig has provided us with fault-free operation and very minimal downtime. The support service from Geoprobe® has been outstanding."



Pro-Drill has completed numerous contracts all over New Zealand with their two 6622CPT rigs for projects associated with roadways, buildings, railways, and infrastructure development. They are also introducing their clients to the direct push capabilities of the rig. In these photos, Pro-Drill field teams completed post-compaction testing at new subdivisions in Christchurch to verify new stability for housing foundations.



- **Low Impact to Environment**

- **Small Footprint for Limited Access**

- **Power to Push in Tough Geology**

Scott Sherwin • Operations Manager
Pro-Drill • New Zealand

"With daily production rates of 180-200 m of pushes by each rig, the quickness of mobilizing and setting up the rig, due in part by its superior anchoring system, quickly became apparent when setting up on properties next to other CPT rigs from other companies. We would arrive and finish our work while the other companies continued on."



Hole sampling angles varied from -48 degrees to vertical, and sampling depths ranged from 65 ft. (20 m) to 115 ft. (35 m).

Versatility of 8040DT Key for Jungle Survival

The Mission: Find the right machine capable of taking samples in unconsolidated formations and in rock to depths of 100 ft. (30 m). By the way, the rig also needs to consistently and properly operate in areas of high humidity and high temperatures.

Cartwright Drilling of Goose Bay, Newfoundland, left the cool temperatures of Canada and headed south with a new 8040DT. Not just a little south, but 3,400 mi. (5,470 k) to South America! They partnered with Hazlo Drilling NV, on a project deep in the jungles of Suriname on the northeastern Atlantic coast of South America.

Typically samples were taken with the DT45 system until the soil became too stiff. Then MC5 tooling was telescoped through the cutting shoe of the 4.5 in. casing. When the soil became too tough for both the DT45 and MC5 tooling, the drilling team simply switched to coring using the GC200 Coring Head, and completed the hole.

The jungle project was completed on time and below budget although the drilling team encountered many obstacles. Hole angles varied from -48 degrees to vertical, and sampling depths ranged between 65 ft. to 115 ft. (20 m to 35 m).

Sample in Unconsolidated Formations & Rock

Probe to Depths over 100 Feet

Multipurpose Capabilities from Sampling to Wireline Coring

Operate in High Humidity and High Temperature Conditions



(above) The 8040DT rig and associated tooling were shipped via container to Suriname, located on the northeastern Atlantic coast of South America between Guyana on the west and French Guiana on the east. (right) On-the-job training includes instruction on the use of DT45 tooling for the resident drilling team.



The 8040DT proved to be the right choice for sampling Saprolite and Laterite, the purpose of the project. Saprolite is a chemically weathered rock which forms in the lower zones of soil profiles and represent deep weathering of the bedrock surface. Laterites are soil types rich in iron and aluminium, formed in hot and wet tropical areas. They develop by intensive and long-lasting weathering of the underlying parent rock.

Temperatures and humidity were also challenging. On a 'pleasant' day, the temperature was 104 degrees F (40 C) with 80 percent humidity. 'Hot' days increased to 120 degrees F (50 C) with 95 percent humidity. Even in those conditions, Cartwright and Hazlo consistently achieved sample recovery rates of 90 percent or greater on a run-by-run basis ... a huge improvement from the traditional coring methods that would wash away valuable information from the sampler.

MC5 sample of Saprolite recovered at 98 ft. (30 m) bgs. Saprolite is a chemically-weathered rock which forms in the lower zones of soil profiles and represent deep weathering of the bedrock surface. The sample was collected by a field team in the jungles of Suriname using a Geoprobe® 8040DT with DT45 and MC5 tooling.

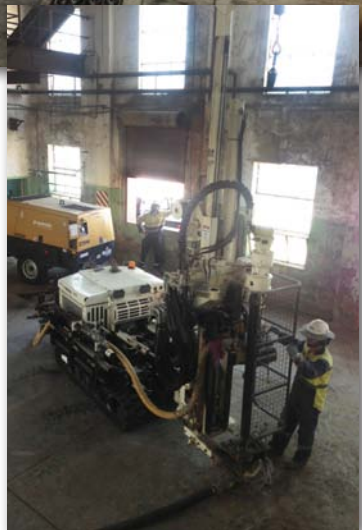


 **Snapshots**

THE **Probing Times**



(above) Jason Boyd drilling with the Numac Drilling 7822DT. (left) The 7822DT squeezes between buildings.



Ben Reid uses a 7822DT for downhole hammering in an abandoned industrial facility.

**Numac Drilling
North Altona,
Vic Australia**



Jason Boyd (left) and Chris McMullen, Owner, Numac Drilling with their new 8140LS Rotary Sonic.



Joe Burns, at the controls, and Wade Manger run through the paces with SDT60 tooling their 8140LS Rotary Sonic.



**Enviro Depot
Baton Rouge, LA**

It floats and paddles! Enviro Depot took their 6600 machine mounted on a MarshMaster III (above and below) on its maiden voyage to complete 75 ft. MIP logs on a mud flat after traversing a small bayou. They subsequently collected groundwater samples from multiple intervals.



(left) MIP setup on a MarshMaster I. (above, below, and bottom left) Enviro Depot uses smaller Geoprobe units mounted on MarshMaster IIs.





Walking on Water

With the City of Calgary in the background, an 8040DT appears to be walking on water! Gerald Ernst, Manager of Ernco Environmental Drilling & Coring in Sylvan Lake, AB, Canada said, "We're not good enough to part the waters, but as you can see we can definitely 'drill and walk' on it!" Corey Pulleyblank, Ernco Driller, and his trainer, Josh Ernst (behind the camera) are drilling in river rock and gravel. Josh said the entire pool drained in a matter of minutes after the tooling was retracted. "The 8040DT is the only environmental rig our clients have found that can drill successfully in this material," Gerald said. Calgary Tower (left) is behind the pole, and the new EnCana Office Tower is on the right.



(above) Seven days in July of continuous soil sampling with Teflon® liners. Ambient temps were 90 degrees F+. The field team completed 56 borings on ground approaching 200 degrees F. The Teflon® liners had to be cooled in ice before the liner could be cut open to view the sample. The gray boxes are electrical junction boxes used to distribute the electricity to the 'heater cans' in the subsurface. The tan color seen on the surface is sand that was carried out by the steam. (right) Same site. Different season. The concrete surface of the site was pulled up after the heat treatment was completed.

Update from New Jersey

A four-man field team from Environmental Probing Investigations in Cream Ridge, NJ, went toe-to-toe with Mother Nature last summer during a super hot/humid week in northern New Jersey. The EPI team used heat-resistant gloves and face shields plus insulated cushions in their boots to withstand the site conditions. The subsurface had been electrically heated to approximately 400 degrees F to remediate onsite contamination.



MIP on the Move

Mike Oscody with BGS in Lawrence, KS, has his mobile MIP setup in a little John Deere cruiser and ready to roll!



AWWWWW



(left to right or is it right to left?) Mac and Sam Willey, twin grandsons of Mike Willey, President of Earth Matters in Ellicott City, MD. Parents Timothy and Robyn Willey of Tulsa, OK, welcomed them to the family in October of 2012.



(above) Domenic Larabie, born December 6, 2013, is the new son of Marques and Angela in Bloomfield, CT. Marques, Aquifer Drilling and Testing, is getting Domenic fitted for field equipment. Big sister, Adrianna, (above right) was born in January, 2012, and believes she will be the future CEO of ADT.

January Delivery

(l to r) Phil Palsgrove, John Palsgrove, Eddy Dealba, Matt Palsgrove and Sam Redmond with GeoServe in Woodstock, IL. It's a great day inside for the drilling team

to check out the new 7822DT and new tool's package that just arrived in January. But outside ... not so much!



Orange Crush It!

The Carolina Crush Volleyball Team from Hickory, NC finished a great season this spring. The volleyball team sent their thanks for the Geoprobe® water bottles that match their team colors. On the left are girls 14, 15 and 18 on the team. The 14-year-olds (right) had just finish a tournament game. You go, girls!





Ruggedly Handsome in Alaska

Five brave, "Ruggedly Handsome" (their team name) men from Discovery Drilling braved the Alaska temperature of -2 degrees F to participate in the Special Olympics Alaska Polar Plunge in Anchorage last December. According to DJ Wardwell, Operations/Driller at Discovery Drilling described their participation: "It was actually a really fun event. Keeter actually wore hair extensions, giving him a nice 80's power mullet look! We even convinced Kyle Brown, President of Discovery Drilling, to join in. It was a real shock to the body when we hit the water. You asked yourself in that initial split second, 'what have I done?', but we all survived. Mark was the first one out of the water with Keeter a close second. Dick just kind of swam around for awhile like he was in his natural habitat or something." Their goal was to raise \$5,000 for Special Olympics Alaska to help create year-round sports training and athletic competition in a variety of Olympic-type sports. Donations will still be accepted by going to FirstGiving.com.

The Ruggedly Handsome Polar Plunge team from Discovery Drilling: (l to r) Kyle Brown, President; DJ Wardwell, Operations/Driller; Keeter Brown, Management; Mark Terry, General Manager; and Richard Banzhaf, Driller. Before the plunge. Still warm and dry.



Alabama DEM Celebrates Earth Day with Area High School Students

The Alabama Department of Environmental Management (ADEM) in Montgomery, AL, celebrated Earth Day by hosting a special event for nearly 100 high school students. Students from four area high schools met at the ADEM central office to learn about environmental programs that are implemented on a daily basis to protect and preserve Alabama's air, land, and water resources.

Both of ADEM's 66 Series track rigs were used to pull soil and groundwater samples for the event. In the photo to the right, Justice Williams (blue shirt, left machine), Senior Environmental Scientist, and Ben Darby (blue shirt, right machine), Biologist Aid II, describe how the track rigs are used in the field. According to Matt Thomas, Sr. Environmental Scientist and Drilling Crew Leader, "Justice and Ben are my right and left hand men. I've been probing since 1995, and this is the best crew I've ever assembled."

"ADEM's scientists, engineers, geologists, meteorologists, chemists, biologists, and other professionals have dedicated their careers to protecting Alabama's natural resources," said Lance LeFleur, ADEM Director. "We're pleased to provide this opportunity to educate students on the benefits of safeguarding the environment and to provide them with information on career opportunities in math and science."

The visiting students received hands-on demonstrations from ADEM staff related to a wide-range of environmental programs including fish tissue monitoring, water quality sampling, air monitoring, recycling, solid waste disposal, and efforts that ensure Alabamians are provided with clean, safe drinking water.



Justice Williams, ADEM Sr. Environmental Scientist, explains a sampling process to students at ADEM's Earth Day event.



Nearly 100 students attended the ADEM Earth Day event at the Montgomery, AL, office of the AL Department of Environmental Management. The two Geoprobe® operators are fulltime rig operators for ADEM.



Increase Efficiency with Geoprobe® 2.25 in. Tooling

Dependable. Versatile. Efficient. These are qualities you look for when selecting the best driller for the job, but also when selecting the best tooling system for your field team to use. The Geoprobe® line of 2.25-in. outside diameter (OD) probe rods and accessories provides everything needed to complete your specific application of direct push technology.

Dependable.

Robust threads and thick sidewalls make 2.25-in. probe rods tough enough to handle machines up to the Model 7822DT equipped with our powerful GH60 Series Percussion Hammers.

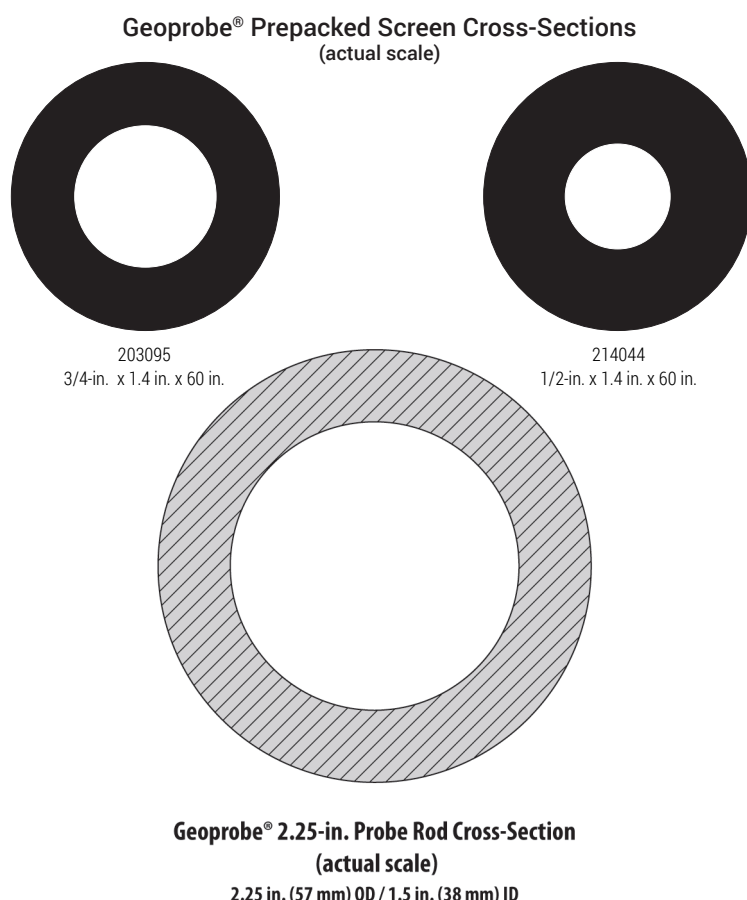
Versatile.

Geoprobe® 2.25-in. tools provide the primary driven casing for more direct push applications than any other tooling system available today.

Efficient.

The versatility of the Geoprobe® 2.25-in. rod system contributes to higher operating efficiency because less time is spent switching out rod strings and less tools are needed on the truck to perform the job than with other rod systems. Less time and less tools means more return on investment for contractors and clients alike.

This is the second of three articles highlighting the uses and benefits of Geoprobe® 2.25-in. tooling systems. This issue we turn the focus to Groundwater Sampling and Monitoring tools: Screen Point 22 (SP22) Groundwater Sampler, Mill-Slot Rods, and 0.5-in. and 0.75-in. Prepacked Screen Monitoring Wells. Soil Sampling Systems were highlighted in the Fall 2013 issue of The Probing Times, available at geoprobe.com.



Dependable ... Robust ... Efficient ... Versatile

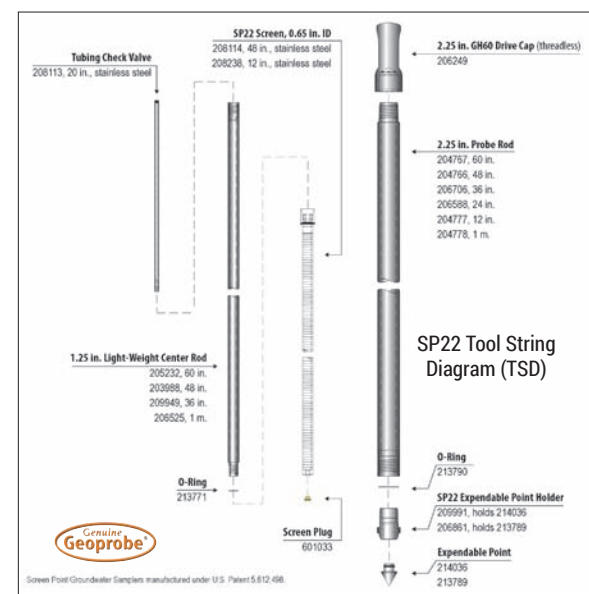
All are qualities that make the Geoprobe® 2.25-in. tool system THE working rod for a wide range of direct push applications!

2.25 in. Rods Make Water Sampling Easy

Same 2.25 in. Rods ... 3 Water Sampling Options

Groundwater Sampling and monitoring systems are utilized to help characterize the water quality and extent of potential contamination during environmental assessments and investigations in unconsolidated soils and sediments.

Groundwater Sampling tools are advanced into the subsurface and installed temporarily to allow for quick sample collection. The tooling is then removed, and in most instances, it is decontaminated and used again at the next location. An expendable drive point at the leading end of the sampler allows bottom-up grouting to properly seal the hole as the rod string is removed. Geoprobe® groundwater samplers available for the 2.25-in. rod system include the Screen Point 22 (SP22) Groundwater Sampler and Mill-Slot Rods. SP22 tooling can be used in a traditional drive and deploy manner for groundwater grab samples, or in conjunction with the DT22 Soil Sampling System to provide profiling methods for both soil and groundwater through the same rod string.

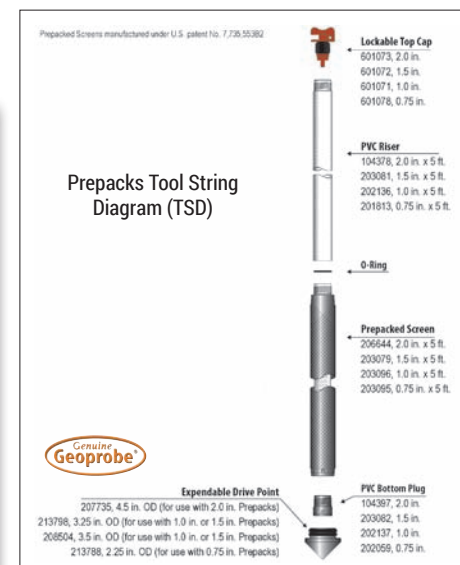


Mill-Slot Rods are standard 2.25-in. probe rods with .020-in. wide slots cut lengthwise to allow collection of groundwater from within the rod string once driven to depth. This non-discrete sampling system is primarily used in sandy aquifers. 2.25-in. Mill-Slot Rods come in lengths of 1 meter and 60 inches.

Groundwater Monitoring is performed with prepacked screen monitoring wells installed for both short-term and long-term groundwater monitoring. Geoprobe® prepacked screens are available in two sizes for the 2.25-in rod system: 0.5-in. x 1.4-in. x 60 in. and 0.75 in. x 1.4 in. x 60 in.



The SP22 Groundwater Sampler screen is deployed through the 2.25-in. probe rod string using Geoprobe® 1.25-in. Lightweight Center Rods (shown) or 0.75 in. PVC riser. Groundwater samples are collected from within the screen with a small-diameter bladder pump, mini bailer, or tubing and a check valve.



Pennies & Minutes Now Will Save Dollars & Hours Later



Brian Rogers, Geoprobe® Customer Service, uses a service inspection form to make sure the 7822DT leaving the Geoprobe® Service Center is field ready.

“Completing daily rig inspections costs pennies and minutes now, but it saves dollars and hours later,” says Brian Rogers, Geoprobe® Customer Service. “We look for ways to encourage our machine owners to schedule regular maintenance and do daily checks. This form is one solution.”

The Geoprobe® Direct Push Rig Inspection Form is tailored to include all of the machine’s unique features, such as composite slides and wireless remote, and for inspecting accessories and optional equipment. Brian added, “Some worksites require documentation of daily inspections; our form should easily meet those requirements.”

In addition, Geoprobe® Customer Service provides free unit maintenance tracking if customers use this inspection form. “Geoprobe® rig owners email us the completed forms,” Brian explained, “and we electronically attach the document to the machine’s service records.” This translates into highly detailed information that permanently follows the machine.

The DP or sonic rig inspection forms can be downloaded for free at geoprobe.com, or printed padded sheets are available by calling Brian or any of the service guys at 1-800-436-7762.

“We use the inspection forms for our Geoprobe® sonics, our 7822DT and 6620DT. It’s a good reminder oil changes or hydraulic service. Most of our clients want a rig inspection done onsite. Most of their forms are formatted to auger rigs, so they’re pleased to see a form from our manufacturer set up specifically for Geoprobe® rigs. It shows our clients that the rig has been maintained and regular service has been completed. And then we all know how important documentation is these days.”



Tom Ulrich • Crew Chief
Stearns Drilling Co • Dutton, MI

Geoprobe® Service: Simple Rig Repairs to Refurbishing

The goal of the Geoprobe® Service team is to provide outstanding service through direct phone support and hands-on equipment repair.

“A few years ago, we began our machine refurbish program,” Roman Burrows, Geoprobe Customer Service explained. “It’s a great program, but at some point it became so popular that people began calling us the ‘Refurbishing Department!’ We enjoy the refurb process, but we don’t want people to forget all of the other things we can do for them.”

Geoprobe® machine owners from all over the country bring their rigs to the Kansas manufacturing headquarters for machine repairs. Tasks range from simple oil changes to more advanced troubleshooting. Most customers transport their own equipment to Salina, but others rely on the Geoprobe® team to help arrange transportation.

“When our Geoprobe® 54LT required some badly needed service, and due to an extremely tight deadline, we took it to Kansas for the repairs,” said Jason Parrish, MA, RPA, Archaeologist/Project Manager for Earth Search in New Orleans, LA. “The service team was very accommodating and worked throughout the day to diagnose and repair our

equipment. They also showed us ways to improve our efficiency with the 54LT. We’ll definitely carry our 54LT back to Kansas for any future repairs.”

The most common repairs completed in Salina include slide changes, fluid changes, and oil leak repairs. The team also does a great deal of electrical repairs and troubleshooting.

Every rig that enters the Geoprobe® Service facility is subjected to a full inspection. Slides are inspected, fluids checked, and the hydraulic system is tested for proper pressure and flow. In addition, every hammer that comes to Salina is looked over and recharged with Nitrogen.

“Recently, we had a customer purchase a new machine. We helped schedule the new rig’s delivery transport so one of their older rigs could be brought back to Kansas for service.”

To schedule your rig for repairs or troubleshooting, contact Darren Stanley, Geoprobe® Service Manager, at 1-800-436-7762 or email him at stanleyd@geoprobe.com.



Roman Burrows, Geoprobe® Customer Service, works on control panel electrical troubleshooting for a customer whose machine came back to Kansas for repairs.

NEW! 7822DT Training Essentials Videos



Lee Shaw (right), Geoprobe® Customer Service, and Roman Burrows, Geoprobe® Service Specialist, developed an informative 7822DT Training Essentials Video to serve as a reminder to some and as a learning tool to others. Available at geoprobe.com.

Whether you’re a seasoned operator or still a little green, this new 7822DT video series is just what the doctor ordered. From what to check for at the beginning of the day to how to load the machine for the drive home. We made a list of your most asked 7822DT operating questions and provided the answers in short video segments. Simple. Straightforward. Short. Concise. Check them out at geoprobe.com

- <> Introduction to the 7822DT
- <> Daily Check List
- <> Start & Cold Start Procedures
- <> Safety Procedures
- <> Transport & Operating Positions
- <> System Display Basics
- <> Pulling Augers
- <> Tethered Remote
- <> Wireless Remote

THE Probing Times

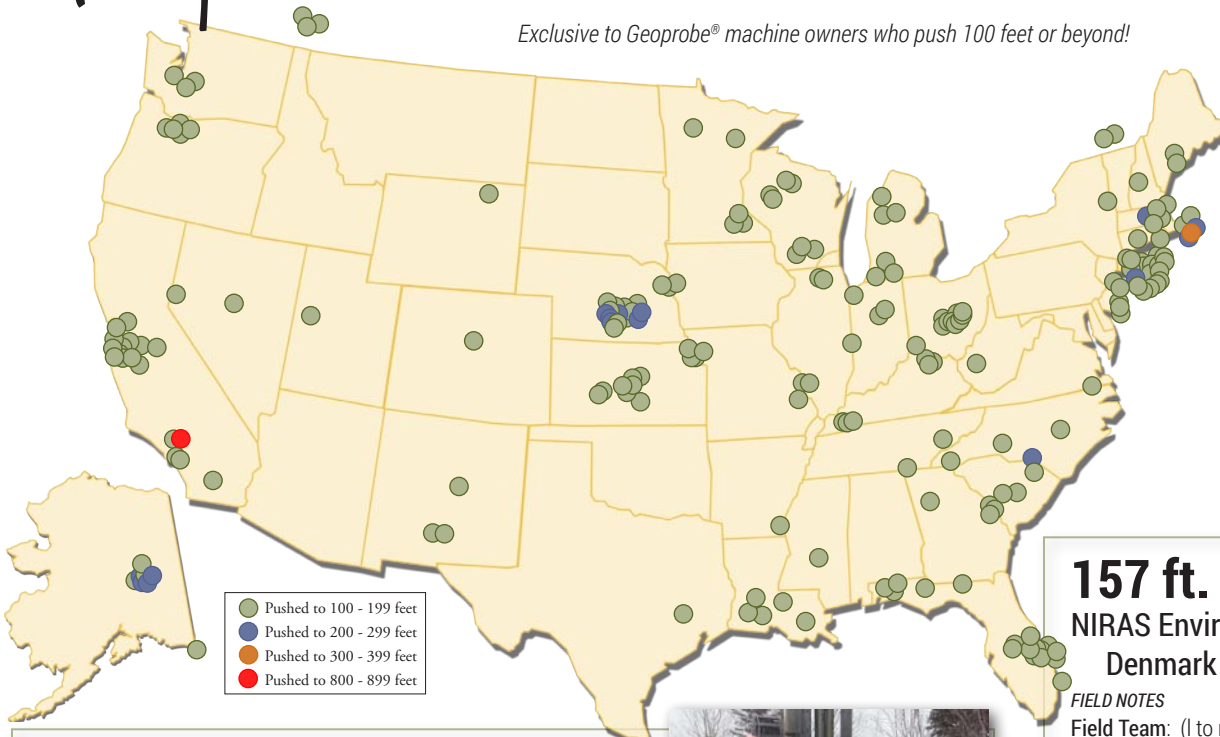
100 Club



Join the "elite cadre of probists" who belong to ...

Geoprobe® '100' Club

Exclusive to Geoprobe® machine owners who push 100 feet or beyond!



104.31 ft. Strata Drilling – Canada

FIELD NOTES
Field Team: (l to r) Everett Duchesne and Kyle Fitter
Field Site: Goose Bay, Labrador, Canada
Depth/Date: 104.31 feet / Dec 10, 2013
Geoprobe® Owner: Strata Drilling • Canada
Field Data: Model 6620DT. Using 1.5 in. rods and MIP probe.



146 ft. Terratest Environmental – Australia

FIELD NOTES
Field Team: (l to r) Rick Walker, Taya Rudolph (Client Supervisor), and Jason Peisley
Field Site: Foxground, NSW, Australia
Depth/Date: 146 feet / Feb 26, 2013
Geoprobe® Owner: Terratest Env • Sydney, AU
Field Data: Model 7822DT. Using 5-in. casing, 4 in. downhole hammer to depth and installed 2 in. groundwater piezometer.



152 ft. ZEBRA Environmental – New York

FIELD NOTES
Field Team: Rachel Adams (with TRC), and Evan Moraitis & Rob Sakalauskas
Field Site: Shirley, NY
Depth/Date: 152 feet / Mar 10, 2014
Geoprobe® Owner: ZEBRA Environmental • Lynbrook, NY
Field Data: Model 7822DT. EC logging and subsequent SP16 groundwater sampling from 0-150 ft. at 15 locations.



110 ft. Alleuvial Earth – Michigan

FIELD NOTES
Field Team: (l to r) Ryan Laberda and Larry Federspiel
Field Site: Michigan
Depth/Date: 110 feet / Oct 23, 2013
Geoprobe® Owner: Alleuvial Earth • Standish, MI
Field Data: Model 66DT. Installed two wells; one to 90 ft. and one to 110 ft. In searching for a more cost-effective alternative to hiring a sonic rig or using an auger rig and generating an enormous amount of cuttings, we used 3.25 in. direct push rods with an expendable point. After several hours of hammering and maneuvering we reached depth. Hooray, so we thought. The groundwater was at about 25 ft and we tried balancing the pressure, but when we popped the point, the heave was too much to overcome. We pulled the rods, but on our second-go-round, we successfully installed a 2 in. well via direct push. We then completed the 90 footer. Our client was happy which made their client happy.



157 ft. NIRAS Environmental – Denmark

FIELD NOTES
Field Team: (l to r) Bror Martin Edlund and Peter Stig Thomsen
Field Site: Southern Denmark near Nykoebing Sealand in Scandinavia
Depth/Date: 157 feet (47.77 m) / Dec 11, 2013
Geoprobe® Owner: NIRAS Environmental • Allerød, DK
Field Data: Model 6610DT. Depth was reached with an HPT probe, with full log and dissipation tests to final depth. Made 8 HPT logs with the same probe and trunkline, all between 143 and 147 ft. (44 and 47.77 meters).



110 ft. Numac Drilling – Australia

FIELD NOTES
Field Team: (l to r) Wade Manger, Joe Burns and (not pictured) Steve Barnes
Field Site: Melbourne, Australia
Depth/Date: 110 feet / Feb, 2014
Geoprobe® Owner: Numac Drilling • North Altona, AU
Field Data: Model 8140LS. Using SDT60 tooling.



120 ft. Strata Drilling – Canada

FIELD NOTES
Field Team: (l to r) Scott Goodwin and Rob Parsons
Field Site: Ottawa, Canada
Depth/Date: 110 feet and 120 feet / Apr, 2013
Geoprobe® Owner: Strata Drilling • Canada
Field Data: Model 7822DT. Using MC5 tooling (110 ft) and CPT (120 ft).



110 ft. PeneCore Drilling – California

FIELD NOTES
Field Team: (l to r) Martin Morales and Oscar Herrera
Field Site: Escalon, CA
Depth/Date: 110 feet / Jan 29, 2014
Geoprobe® Owner: PeneCore Drilling • Woodland, CA
Field Data: Model 7822DT.



The Probing Times is the official newsletter of Geoprobe Systems®. Suggestions for future newsletter articles or submission of 100 Club information are encouraged. Call Gayle Lacey at 1-800-436-7762 or email probingtimes@geoprobe.com. An online version of the newsletter is available at geoprobe.com

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Hot New Tools from Real Cool Guys

The Geoprobe® Tooling Design Team is at it again. These cool guys like dirt, and they like putting holes in the ground. So it's logical they will spend a lot of time outdoors testing and developing new tooling and making great things even better.

DT60 Sampling System

The new DT60 sampling system is the largest dual tube system from Geoprobe. It boasts two innovative features that have patents applied for. It utilizes 6 in. OD percussion driven casing and collects a 4 in. diameter soil sample. Unlike most other sampling systems, the DT60 uses a patent pending split sheath which gives the user the option of not using a liner.

A new and innovative optional liner system for the DT60 decreases initial tooling costs and shipping. One hundred feet of liners comes in a box not much bigger than a microwave. Plus the liners can be re-used, and they are easily recycled.

In addition to its soil sampling capacity, the DT60 system can also be used to install 2 in. monitoring wells without driving a second tool string. That means you can collect continuous soil cores and install a 2 in. prepak or conventional well within a 6 in. borehole with no expendable points or cutting shoes – all in one shot!

3.75-in. Probe Rods


The DT37 is the newest dual tube system by Geoprobe®, and it's used with Geoprobe® 3.75 in. Probe Rods. The DT37 tooling collects continuous soil samples approximately 2-in. in diameter. It can be used with an optional, expendable cutting shoe to allow for the installation of a prepak well through the 3.75 in. probe rod.

3.75 in. Probe Rods

The new Geoprobe® 3.75 in. Probe Rod system was designed in conjunction with the Geoprobe 2-in. Slim Prepak to create a more efficient method of installing 2-in. Schedule 40 prepaks. The 3.75 in Probe Rod has a 3.75 in. OD and an ID of 3.0 in. In short, it's an optimal casing combining ease of use for 2-in. Slim Prepak installation, minimal borehole size to maintain reasonable penetration rates, and a robust thread design.

2-in. Slim Prepaks

With a slim OD of only 2.8 inches, even Richard Simmons would blush! The 2-in. slim prepak uses a standard, 2-in. Schedule 40 slotted screen with a sand pack and 2.8-in. diameter stainless steel mesh screen on the outside. The 2.8 inch outside diameter can be used with 3.75-in. probe rods for an efficient combination of tooling for easy prepak installation.

DT60 Sampling Tools

3.75 in. Probe Rods

DT37 Sampling Tools

2 in. Slim Prepak



Tooling Design Team: David Golden, Mike Carlin, Joel Christy, Kyle Riedel and Jed Davis.



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