

# WorldWide Drilling Resource®

Volume 13 January 2016

Home of Solid Gold Service™

DRILLMAX

Congratulations  
Casola Well Drillers of  
Mastic, NY on  
Your New DRILLMAX® 350!

What's inside

20

What Keeps  
Hotlanta Hot?

34

Messe München  
Party Preview

50

Knock Knock. Who's  
There? **WWD**!

Read more  
exciting articles  
inside...

Let us know what  
you think.



Details of this unit and more from DRILLMAX - Page 6.

# DES

DRILLING EQUIPMENT SALES, INC.

See our Equipment in the **GROUTERS, PUMP HOISTS, and RIGS SECTION** of **WorldWide SUPER MART™!**



**Pulstar**

**HEADS UP!**

Pulstar units available for delivery through January.

**Call now!**



Need a rig?

Contact: Jeff Jacomine

Phone: 828-322-3056

Fax: 828-322-4042

2515 Highway 70 SW

Hickory, NC 28602

E-mail: [jeffj@drillingequip.com](mailto:jeffj@drillingequip.com)

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





**INFINITY<sup>®</sup> | TOOL MFG.**

**MADE FOR  
YOUR JOB**



**DTH & PDC BITS**  
**[infinitytoolmfg.com](http://infinitytoolmfg.com)**

*WorldWide Drilling Resource<sup>®</sup>*



**UCT 2016**  
**ATLANTA, GA.**  
**3-4 FEBRUARY**

**VISIT US AT**  
**BOOTH 63**



# Mobile Drill Intl

HELPING YOU BUILD OUR WORLD SINCE 1947



# B57

## HIGH TORQUE

- Torque: 11,420 ft-lb
- 672 RPM
- 14" Double Disc Clutch
- Heavy-Duty, Single-Speed, Right Angle Drive
- 6-Speed Manual Transmission
- EZ Shift Technology

## HIGH SPEED

- Torque: 8,000 ft-lb
- 960 RPM
- 14" Double Disc Clutch
- Heavy-Duty, Single-Speed, Right Angle Drive
- 6-Speed Manual Transmission
- EZ Shift Technology

# AVAILABLE FOR SALE OR RENT!

## Editorial

## Solid Gold Advertisers

Breaking News.....	13
<b>Classified Section: WorldWide SUPER MART™</b> .....	64-80
Dealmakers.....	43
Education Connection.....	12
Fun Page.....	43
<b>Hot Off the Press</b> .....	9
Obituary: Pickard, Worth F.....	56
Photo Gallery.....	12
Product Spotlight.....	59
<b>Ronnie's Real World</b> .....	62
Where are you planning to go?.....	22
Who's in the News.....	13
<i>WorldWide Home of Solid Gold Service ~ with a Smile™</i> .....	6
<i>WorldWide Service Center™</i> .....	7

### Construction-Geotechnical

<b>Battersby, Mark E.:</b> Drilling Into Money Not Boring.....	17
Construction Machinery & Equip. Import-Export Report.....	49
<b>Cosby, Scott:</b> Feed Rate and Bit Pressure.....	27

### Directional

<b>Connor, Tim:</b> Luck, Timing, and Preparation.....	37
Going Farther, Faster with New HDD System.....	54
HDD Preserves Atlanta's History.....	20

### Environmental

Frequently-Used Geological Terms Part 46.....	47
How the Kelly Bar Got its Name.....	32
<b>Kuebelbeck, Jim:</b> Through the Front Door!.....	19
<b>Kwader, Thomas:</b> Environmental Monitoring.....	25

### Exploration-Blasthole

Blasting a Bridge to the Bottom of a Bay Takes Skill.....	44
Plywood vs. Hardwood.....	29
<b>Rehme, Kyle:</b> The Real Value of Employee MVRs.....	60
<b>Storkson, Britt:</b> Sometimes We Don't Need All that Energy.....	10
The Oil Well Next Door.....	63

### Gas & Oil

<i>E-News Flash</i> Readers' Choice: No Keystone Pipeline.....	16
Industrial Ethernet Connectivity for the Oil & Gas Industry.....	45
Proved Oil and Gas Reserves on the Rise in the U.S.....	36
<b>"Smith, Billy Bob":</b> The "Idiot's" Corner.....	48
The Iron Zoo of Coalinga.....	31

### Geothermal

A Call to Action for the Geothermal Industry.....	21
Reservoir Confirmed at the WPG Geysers Project.....	57
<b>Tavino, Peter:</b> Following up on Habitat Geothermal.....	15
<b>Wilson, Jr., Robert Evans:</b> The Un-Comfort Zone II.....	30

### Mining

A Surprise Visit to Mobile Drill International.....	50
bauma Preview in the Big Apple.....	34,35
Respirable Coal Dust Rule Nets Positive Results.....	14
<b>Short, Harry W.:</b> Garnet, January's Birthstone.....	23

### Water

A Stone's Throw from Stonehenge.....	53
<b>Corey, Bill:</b> 14.7 PSI.....	38
Funding Opportunity for Groundwater Monitoring.....	26
<b>Rasmussen, Tim:</b> Water for Life International.....	33
<b>White, Harold:</b> Oil/Water Exploration.....	51

Alberta Water Well Drilling Association (AWWDA) Conv.....	14
America West Drilling Supply.....	78
Aries Industries, Inc.....	9
Armstrong Machine Co., Inc. (AMCI).....	53
Atlantic Screen & Manufacturing, Inc. (ASI).....	29
Baker Water Systems.....	26
bauma Munich 2016.....	52
Best in the West Drill & Blast Conference (ISEE).....	27
Better Water Industries Inc.....	48
Bit Brokers International.....	15
Bitco, Inc.....	12
Bloom Mfg., Inc.....	19
Blue Demon Company, Inc.....	54
Center Rock, Inc. (CRI).....	42
Centerline Manufacturing Company.....	45
Cotey Chemical Corp. (CCC).....	32
Drill Pipe, Inc.....	33
Drilling Equipment Sales, Inc. (DES).....	2
Drilling Supply & Mfg (DSM).....	8
DRILLMAX, Inc.....	1
E&M Supply Group.....	45
Enid Drill Systems, Inc. (EDSI).....	62
Filmark Products, Inc.....	37
Flomatic Corporation.....	47
Flow Center Products, Inc.....	51
Foremost Industries.....	55
GEFCO (an Astec Industries Company).....	79
General Pump.....	48
GeoPro, Inc.....	20
Geoprobe Systems®.....	40
Geoprobe Systems®.....	41
Gus Pech Manufacturing Company, Inc.....	35
Hole Products.....	57
Infinity Tool Manufacturing.....	3
Int'l Soc. of Explosives Engineers (ISEE) Annual Conf.....	36
Keystone Drill Services, Inc.....	18
Kingsland Drill International, Inc.....	38
KS Bit, Inc.....	39
MARL Technologies, Inc.....	59
Merrill Mfg.....	16
Michigan Ground Water Association (MGWA) Conv.....	29
Mills Bit Service, Inc.....	58
Mills Machine Company, Inc.....	28
Moab Bit and Tool Company, Inc.....	30
Mobile Drill Intl.....	4
Mountain States Ground Water Expo.....	38
New England Water Well Association (NEWWA) Expo.....	19
Noland Drilling Equipment.....	43
Pacific Northwest Ground Water Exposition.....	44
Palmer Bit Company.....	46
Qwater Well Development Tools.....	36
Rauch Manufacturing, Inc.....	31
RECO USA.....	25
Rex McFadden Ltd.....	37
Ring Power Corp.....	13
RLC Bit Service, Inc.....	10
SEMCO, Inc.....	80
Shakti Pumps USA, LLC.....	77
Shallow Exploration Drillers Clinic (SEDC).....	54
Star Iron Works, Inc.....	17
Star Iron Works, Inc.....	51
T&T Carbide Drilling Supply.....	24
Tee Jay International, Inc.....	23
Tennessee Water Well Assn. (TWWA) Annual Mtg & Trade.....	62
Throop Rock Bit Company.....	21
Underground Construction Technology (UCT) Conf.....	11
Variperm Canada Limited.....	25
Virginia Water Well Assoc. (VWWA) 2016 Winter Conf.....	23
VolkBell Property & Casualty Insurance, LLC.....	60
Well-Vu, Inc.....	49
Wyo-Ben, Inc.....	12

Home of Solid Gold Service ~ with a smile!<sup>TM</sup>

Ronnie, Managing Publisher  
ronnie@worldwidedrillingresource.com  
With pen (computer) in hand...



Well, this past year was quite a year indeed!

There were many changes all the way around. For one, the entire look of **WorldWide Drilling Resource**<sup>®</sup> print issue was changed, and for the better based on the rave reviews we have had. We are happy when you are pleased!

The **WWD** Team had a major road trip and met up with many of our great friends along the way. What excitement we had visiting their facilities! Our plan is to give you the "inside" look at them. Of course, this may take us a few months because we have a lot to tell.

Here is some **fascinating NEWS** for YOU. As you read this, get prepared to see the **NEW, TOTALLY REDESIGNED WorldWide Drilling Resource, Inc., Web site -- [www.worldwidedrillingresource.com](http://www.worldwidedrillingresource.com)**. We are very excited about it, and want your input. It will be up and running for you to celebrate 2016 with us - January 1st!

Now, it's time for the **WWD** Team to do their thing and wish each and every one of you the very **BEST NEW YEAR** possible. We wish you happiness, health, and of course, good fortune.

**CHEERS TO A BRIGHT FUTURE AHEAD!**

**SEE YOU ON THE TRAIL!**  
We'll be the ones with the smiles! And a "Positive" Attitude! No frowners allowed!

Home of Solid Gold Service ~ with a Smile<sup>TM</sup>

### DRILLMAX 350

**SUPERIOR QUALITY, RELIABILITY, AND SPEED IN A POWERFUL COMPACT PACKAGE**  
~ From the Cover ~



- DRILLMAX<sup>®</sup> 350**  
Equipped as shown with
- Gardner Denver 5 x 6 Mud Pump
  - 300/200 Air Compressor
  - Sandline Winch and Main Winch
  - Dual Motor Pipe Spinner
  - CMAX Rod Loading System
  - Electric Hose Reel



Call 800-342-0234 or 352-427-7787 for more details on this and other DRILLMAX<sup>®</sup> rig models.  
[www.drillmaxrigs.com](http://www.drillmaxrigs.com)



**Proudly Made in the United States of America - delivered WorldWide!**

### WorldWide Drilling Resource<sup>®</sup>

The **complete magazine** for the drilling industry worldwide, owned by drilling industry associates dedicated to bringing the most up-to-date technology and information to subscribers. Covering **construction-geotechnical, directional, environmental, exploration-blasthole, shallow gas & oil, geothermal, mining, water well, irrigation, wastewater**; from bits, to pumps, to rigs, to tanks, through wire and more - whatever it takes to get the drilling job completed!



WorldWide Drilling Resource<sup>®</sup> is published monthly by WorldWide Drilling Resource, Inc., a Florida Corporation  
PO Box 660 (3089 Northridge Lane) Bonifay FL 32425-0660.  
Telephone: 850-547-0102  
Fax: 850-547-0329



E-mail: [wvdr@worldwidedrillingresource.com](mailto:wvdr@worldwidedrillingresource.com)  
Web site: [www.worldwidedrillingresource.com](http://www.worldwidedrillingresource.com)

Managing Publisher/CEO/President: Veronica I. "Ronnie" Jones  
Office Administrator: Michele Stevens  
Editor: Bonnie Love  
Associate Editor: Amy White  
Classified Sales Manager: Kathy Heinrich  
Sales: Brenda Helms  
Dave Hose  
Marcel Schimpf  
Lora Barnes  
Marie Cunningham  
Troy Cunningham

WINNER



### Editorial Contributors for this month:

Mark Battersby	Tim Connor	Bill Corey
Scott Cosby	Jim Kuebelbeck	Thomas Kwader
Tim Rasmussen	Kyle Rehme	Harry Short
"Billy Bob Smith"	Britt Storkson	Peter Tavino
	Harold White	Robert Evans Wilson, Jr.

Hyd/Eng Consultant: Thomas Kwader, Ph.D., P.G.

Consultant: Mary Ann Pelletier

Copyright 2016, WorldWide Drilling Resource, Inc. Seen by countless WorldWide. Publication Agreement No. 40892520. Back issues may be requested. Cost per issue \$10.00 USD. No part of this publication may be reproduced in any manner without the strict written consent of the publishers. Advertising rates furnished upon request. Editorial contributions are welcome subject to editorial review.\* **WorldWide Drilling Resource<sup>®</sup>** reserves the right to refuse any advertisement.

\*Editorial contributions & advertisements include statements of fact and opinions that are the sole responsibility of the author and/or companies and do not necessarily imply any opinion of the owners, management, or staff of **WorldWide Drilling Resource<sup>®</sup>**. Images may have been altered for clarity. Complete advertising information may be found at: [www.worldwidedrillingresource.com](http://www.worldwidedrillingresource.com)

or by calling 850-547-0102. **WorldWide Drilling Resource<sup>®</sup>** makes every effort **not** to place advertisements for "like" products on the same page in our publication; this may occur however, due to size and space within the publication. We regret any inconvenience this may cause our advertisers.

**WorldWide Drilling Resource<sup>®</sup>**

# WorldWide Service Center™

**Need help in the field?  
Call now!**

**acker**  
DRILL COMPANY

**Acker  
Drill Co.,  
Inc.**

(800) 752-2537  
ackerdrill.com



**Alloys &  
Components  
Southwest**

(800) 441-1994  
alloysandcomponents.com

**BAKER**  
WATER SYSTEMS DIVISION

Campbell Monitor MONOFLEX

(800) 356-5130  
bakerwatersystems.com



**Bitco, Inc.**

(661) 201-6259  
bitcoinc.us



(800) 561-3164  
boshart.com



**Diedrich  
Drill, Inc.**

(800) 348-8809  
diedrichdrill.com

**FLOMATIC VALVES**  
Flomatic Corporation

(800) 833-2040  
flomatic.com



(800) 538-5823  
jetlube.com



**Rockmore  
International**

(503) 682-1001  
rockmore-intl.com



(407) 574-4001  
shaktipumps.com

**Simmons**

**Simmons  
Mfg.**

(800) 241-1935  
simmonsmsg.com

**WorldWide Drilling Resource®** is a proud member of these associations.

Alaska Miners Association  
Phone: 907-563-9229 Fax: 907-563-9225  
ama@alaskaminers.org  
www.alaskaminers.org

Alberta Water Well Drilling Association  
Tel: 780-386-2335  
awwda@xplornet.com

American Exploration and Mining Assn.  
Phone: 509-624-1158 Fax: 509-623-1241  
info@miningamerica.org  
www.miningamerica.org

Atlantic Water Well Association  
Tel: 888-242-4440 Fax: 902-435-0089  
nsgwa@ns.aliantzinc.ca • www.nsgwa.ca

Australian Drilling Industry Association  
adia@adia.com.au

Black Hills Chapter of the ISEE  
President: Doug Hoy  
www.bitwconference.org

British Columbia Ground Water Assn.  
Tel: 604-530-8934 Fax: 604-530-8934  
secretary@bcgwa.org • www.bcgwa.org

National Drilling Association  
Tel: 877-632-4748  
Fax: 216-803-9900  
www.nda4u.com

New Zealand Drillers Federation, Inc.  
www.nzdrillersfederation.co.nz

Northern Plains Chapter of the ISEE  
President: Billy Obermire  
Tel: 307-689-0050  
www.bitwconference.org

Nova Scotia Ground Water Association  
Tel: 888-242-4440 Fax: 902-435-0089  
nsgwa@ns.aliantzinc.ca • www.nsgwa.ca

Ontario Groundwater Association  
Tel: 519-245-7194 Fax: 519-245-7196  
ogwa@ogwa.ca • www.ogwa.ca

Women In Mining  
866-537-9694  
wim@womeninmining.org  
www.womeninmining.org

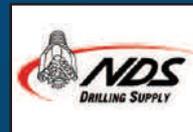
D.S.M.  
**MAYHEW**  
Austin, Texas



**New Rigs • Complete Rebuilds • Remounts**  
**Over 30 years experience in machining and service work.**



Our distributors are:



**Drilling Supply & Mfg.**

7301 Hwy 183 South

Austin TX 78744

Tel: (512) 243-1986 Fax: (512) 243-1091

**[www.dsm-mayhew.com](http://www.dsm-mayhew.com)**

# Hot Off the Press

## Over 50 Years and Palmer Bit is Still Producing Firsts

Established in North Dakota in 1957, Palmer Bit Company has continually provided high-quality drill bits and time-tested service to the drilling industry. They manufacture the Diamond Devil PDC (polycrystalline diamond compact) and Red Devil bits and stock a complete line of drag bits, rock bits, and hole openers for geotechnical, geothermal, water well, seismic, and mining applications.

Recently, a customer encountered a nasty, sticky clay situation and asked for a scratcher type hole opener. Always up for a challenge, the Palmer Bit Team came up with this first of its kind tool.



  
**PALMER BIT CO.**

For a link to this Web site, visit:  
[worldwidedrillingresource.com](http://worldwidedrillingresource.com)



*Hot Off the Press page is proudly sponsored by Aries Industries, Inc.*

## EXPLORER Aries New Portable Borehole Inspection System

**ARIES**  
INDUSTRIES, INC.

See what you're missing.

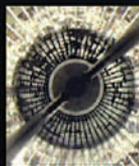
# ONE OPERATOR. IMMEDIATE RESULTS.



The Explorer is the new, affordable system for borehole inspections to depths of 1200 feet (366m).

The compact unit is easy to set-up and operate, truly requiring only one operator.

A downhole and 360° Side Scan camera efficiently detects integrity problems early to reduce costly, unnecessary repairs.



Manual Focus and Iris ensure clear images



Control unit with swivel head and height adjustment



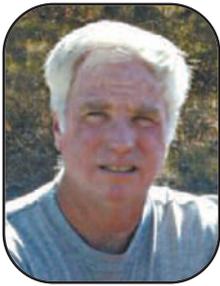
Compact, maneuverable cart with 16-inch wheels

Scan below to see the Explorer in action.



[www.ariesindustries.com/explorer](http://www.ariesindustries.com/explorer)  
(844) 750-4923

© Aries Industries, Inc.



# Sometimes We Don't Need All of that Energy

by Britt Storkson  
Owner, P2FlowLLC

The average automobile has considerable power available to climb hills and accelerate quickly from a stop. Often, we don't need all of the power at one time. Many times, we are slowly making our way through traffic or traveling down the highway at moderate speeds. We need to be able to adjust the speed and power of the vehicle so we have it when we need it, yet conserve it when we don't.

DC (direct current) electric motors and electronic components have the same need for speed/power control.

We need power (voltage x amperage) available to use, but also must be able to limit the power when we don't need it. We limit the power by limiting (regulating) the voltage, and there are basically two ways to do this:

1. Dissipate the unneeded power away as heat.
2. Shut off the power periodically to limit the energy flow to the load.

The first method is called linear voltage regulation. A transistor, essentially, acts as an adjustable resistor that becomes a higher resistance when the current load is lower, and becomes a lower resistance when the current load is higher using an internal voltage-sensing feedback circuit. These voltage regulators are cheap, reliable, and used in many electronic items all over the world.

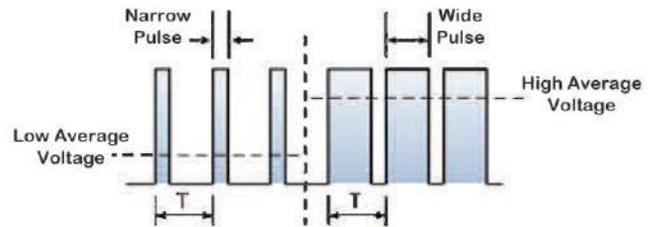
There is one disadvantage here, and it's a big one. Whatever energy we don't use is dissipated as heat, and this heat can be considerable. Say we want to reduce the voltage from 24 volts to 12 volts at 1 amp. We have 12 volts at 1 amp "unused" so to speak that doesn't go through the load. The energy must go somewhere, so it is dissipated as heat. In this case, 12 volts x 1 amp = 12 watts. We have to "get rid of" 12 watts of heat/energy if we want to maintain 12 volts at 1 amp on the output.

This heat dissipation can be considerable, so cooling fins and cooling fans must be used to remove the heat. This is undesirable for a number of reasons. It can be a big waste of energy, and the electronic enclosures must be vented with the heat routed to someplace where it isn't going to hurt anything. This is why linear voltage regulators are used only for low power applications where power dissipation isn't a big issue.

The second method is called switching regulation. We implement voltage regulation by switching the voltage off and on rapidly using one or more transistors so the load "sees" the correct voltage. This is done using a technique called Pulse Width Modulation (PWM). A microprocessor (typically) switches the higher input voltage off and on rapidly so it limits the amount of energy getting to the load. See the illustration:

So, the only energy losses are the voltage losses sustained as the current flows through the transistor, which are very small relative to the amount of current (amperage) switched. We get a higher average voltage by turning the transistor(s) "on" for longer periods of time relative to the "off" time. Conversely, we get lower average voltages by keeping the switching transistors off for longer periods relative to the on time.

This is also how variable frequency drives work, but different in that the PWM pulses generated are tailored to service an AC (alternating current) three-phase induction motor. While it's more complicated to implement, the idea is the same. The microprocessor also monitors the output voltage and adjusts the PWM pulse width to maintain the proper voltage, even under widely varying current loads. This is called a switching regulator.



The advantage is much less power dissipation for a given current load. The only energy losses are through the switching transistor(s) when current (amperage) is flowing through the transistor when the transistor is fully switched on. Of course, there is very little power dissipation when the transistors are fully switched off.

The disadvantage is there are more components, which add to the size and cost of the device, but like most things electronic, as more and more of these devices are used the reliability goes up and the costs go down. So switching power supplies are replacing linear power supplies in just about every application.

*Britt*

Britt Storkson may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

**Your wife called. She said, "It's OK for you to buy all of your bits and drilling supplies from RLC Bit Service!"**

**8643 Bennett Rd.  
Benton, IL 62812  
Phone: (618) 435-5000  
Fax: (618) 438-0026**

- New & Used bits from 2-7/8" to 36"
- TCI - TOOTH - NEW & USED - WE WANT TO BUY YOUR NEW SURPLUS BITS, USED BITS, & JUNK BITS!
- Over 10,000 bits in stock for: Oil, Gas, Water Well, Geothermal, Exploration, Construction, etc.
- We also carry PDC bits, hammers, and hammer bits.
- We can build stabilizers in any size and any connection.
- WE CAN BUILD ANY SIZE REAMER OR HOLE OPENER, VERTICAL, HORIZONTAL, OR HDD. WE CAN EVEN REBUILD YOUR REAMER OR HOLE OPENER.
- We make sub adaptors with any connection.
- Quick Turnaround - All work is done in-house.
- All materials are in stock.

**Rick Corn**  
ricbit77@frontier.com  
Cell: (618) 927-5586

**Jason Corn**  
ricbit373@frontier.com  
Cell: (618) 927-2676

**WWW.RLCBIT.COM**

# ATLANTA



**SMART**  
business  
**PREMIER**  
exhibits  
**EXCELLENT**  
education

Underground Construction Technology  
International Conference & Exhibition

**February 3-4, 2016**

Georgia World Congress Center, (Downtown) Atlanta, GA

UCT's exclusive, professional conference offers  
**80 dynamic sessions** over two days.

Understand the new technologies and products displayed in the exhibit hall. Stay on top of the latest safety, regulatory and operational issues that impact the way you do business. **Earn CEUs/PDHs.**

**INCREASE YOUR KNOWLEDGE – ATTEND UCT**

View the program and register at [uctonline.com](http://uctonline.com)



# Education Connection

## Drilling Fluids

by: Baroid Industrial Drilling Products  
**Water Well Applications  
 Mud School**  
 February 1-5 ~ Houston, TX  
 e-mail: [julia.sammons@halliburton.com](mailto:julia.sammons@halliburton.com)  
[www.baroididp.com](http://www.baroididp.com)

## Geothermal

by: International Ground Source  
 Heat Pump Association  
**Accredited Installer Workshop**  
 February 24-26 ~ Stillwater, OK  
[www.igshpa.okstate.edu](http://www.igshpa.okstate.edu)

## Groundwater / Water Well

by: Wisconsin Water Well Association  
**Continuing Education**  
 February 9 ~ Eau Claire, WI  
 February 10 ~ Green Bay, WI  
 February 11 ~ Madison, WI  
 phone: 608-326-0935  
[www.wisconsinwaterwell.com](http://www.wisconsinwaterwell.com)

# NATURALLY SUPERIOR



**WYO-BEN.**



Bring profitability to your jobsite with WYO-BEN's line of high-performance, cost-effective drilling fluids.

- **No Complicated Recipes**
- **Maximize Your Rig's Performance**
- **Highly Concentrated Products**
- **Less Handling, Fewer Problems**

**Contact us today! 1-800-548-7055 or [www.wyoben.com](http://www.wyoben.com)**

## Tunneling

by: Colorado School of Mines  
**Pilot Tube Microtunneling**  
 February 8 ~ Golden, CO  
**Microtunneling**  
 February 9-11 ~ Golden, CO  
[www.csmospace.com](http://www.csmospace.com)

## Pumps

by: Pentair Training Institute  
**Water Systems**  
 February 2-5 ~ Delavan, WI  
[www.sta-rite.com/residentialpage\\_classroom\\_training.aspx](http://www.sta-rite.com/residentialpage_classroom_training.aspx)



[www.bitcoinc.us](http://www.bitcoinc.us)




**New & Used Bits**  
 Hole Openers  
 Drag Bits & Wings  
 Hammers  
 Hammer Bits  
 Diversers

**Re-tipping Stabilizers**  
 Claw Bits  
 Pipe Wipes  
 Bolt-on Teeth  
 Subs

**12102 Vista Montana Dr  
 Bakersfield, CA 93306**

**Office: (661) 834-4348**

**Rod Henderson**  
 (661) 201-6259

**Eran Henderson**  
 (661) 330-0790

[bitcoincrod@hotmail.com](mailto:bitcoincrod@hotmail.com)

## Looking for show pages? You found them!

**ON THE TRAIL...**




Click on the photo above to enter the 2015 International Ground Source Heat Pump Association Photo Gallery.

[worldwidedrillingresource.com/  
 Gallery/2015/IGSHPA15](http://worldwidedrillingresource.com/Gallery/2015/IGSHPA15)

**Red Jackets ~**




Click on the photo above to enter the 2015 California Groundwater Association Photo Gallery.

[worldwidedrillingresource.com/  
 Gallery/2015/CGA15](http://worldwidedrillingresource.com/Gallery/2015/CGA15)

**follow the**

*Feel free to download at will and print the photo(s) of your choice.  
 Compliments of WorldWide Drilling Resource®.  
 Photos are copyrighted and released for personal use only - no commercial use permitted.*

# BREAKING NEWS

## \$1000 Memorial Scholarship Challenge for Geothermal Industry

Kirk Mescher, owner of CM Engineering, was known throughout the nation for his innovative ground source heat pump designs. He passed away on August 19, 2015.

Led by geothermal engineer and friend Lisa Meline and colleagues, the Kirk T. Mescher Scholarship Award was created for practicing engineers, teaching faculty, or students interested in pursuing new ideas about ground source energy.

On November 15, 2015, President of the Geothermal Exchange Organization (GEO) Doug Dougherty signed a \$1000 check to the Kirk T. Mescher Scholarship Fund. Dougherty said, "Kirk Mescher was a renowned geothermal engineer, a mentor, and a friend. I challenge everyone in the geothermal heat pump industry to match and exceed this investment in the future of our industry - the bright engineers who will take our technology to the next level."

If you would like to accept the challenge, checks made to the "Kirk T. Mescher Scholarship Fund" may be sent to Central Bank of Boone County, PO Box 678, Columbia, MO 65205.



## FOR ALL YOUR COMPRESSED AIR NEEDS



**NEW CAT POWERED  
SULLAIR 185DPQ  
Diesel Air Compressors**

**USED TIER3 SULLAIR  
900XH/1150XH  
starting at...\$125,000**

  
**SULLAIR®**  
*Always air. Always there.™*

### Sullair Diesel Portable Compressors

- 125 CFM to 1600 CFM
- 80 PSI to 500 PSI
- Open Frame Packages Available
- "Oil Free" Packages Available (150 PSI)

### Sullair Electric Compressors

- 40 HP to 300 HP
- 149 CFM to 1600 CFM
- 100 PSI to 175 PSI

500 World Commerce Pkwy, St. Augustine, FL 32092 904-494-1285  
10421 Fern Hill Drive Riverview, FL 33578 813-865-2507  
compressedair.ringpower.com | aircompressor@ringpower.com

**Ring Power®**   
Power Systems Division



## WHO'S IN THE NEWS



Dave Bloodworth

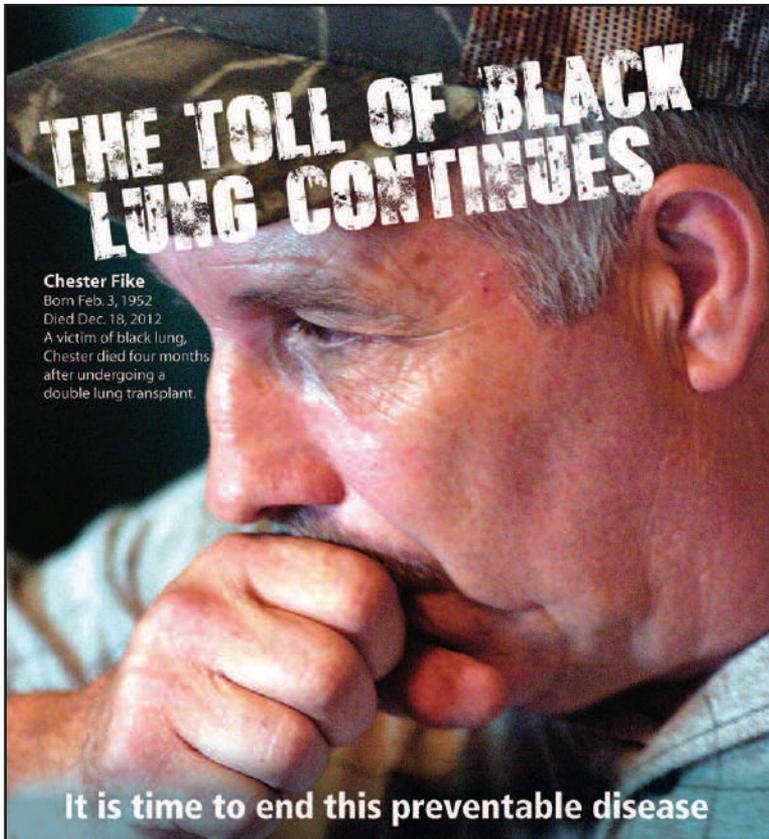
Dave Bloodworth recently retired from Central Mine Equipment Company (CME) after being part of the sales force for over 36 years. His latest position was Sales Manager, which he held since 1997. According to CME, Dave's attention to detail set the standard for those who will carry on the company's tradition.

For more about Dave, and other Who's in the News announcements, including recent honors from the California Groundwater Association and the International Ground Source Heat Pump Association, as well as a new promotion at Vermeer, visit [worldwidedrillingresource.com/Whos2.pdf](http://worldwidedrillingresource.com/Whos2.pdf)

Send your Who's in the News to: [promotions@worldwidedrillingresource.com](mailto:promotions@worldwidedrillingresource.com)

# Respirable Coal Dust Rule Nets Positive Results

Adapted from a Press Release by MSHA



One year ago, the landmark respirable dust rule went into effect, adding a number of increased protections for coal miners and closing several loopholes that led to exposure of unhealthy coal mine dust. Respirable dust sampling results for the first year of the rule show compliance is achievable and, more importantly, the nation's coal miners are better protected from black lung than ever before.

The respirable dust rule is the culmination of MSHA's (U.S. Department of Labor's Mine Safety and Health Administration's) End Black Lung - Act Now Campaign, which began in late 2009, and called renewed attention to a disease which has caused or contributed to the deaths of 76,000 coal miners since 1968.

Nearly 62,000 dust samples were collected from surface and underground coal mines by MSHA and coal mine operators, and only 1.1% exceeded the dust concentration limit. MSHA alone collected nearly 30,000 samples at 330 underground and approximately 900 surface mines and facilities.

"While some insisted that mines would be unable to comply with the requirements of the rule, sampling results have proved that assumption is incorrect," said Joseph A. Main, assistant secretary of labor for mine safety and health. "At long last, we have a rule that fulfills the intent of Congress when it passed the Federal Coal Mine Health and Safety Act of 1969 - to eradicate black lung once and for all."

In preparation for Phase II, MSHA is hosting a series

of stakeholder outreach meetings so mine operators have ample time to adjust to the new requirements.

**Beginning February 1, 2016, continuous personal dust monitors, or CPDMs, must be used to monitor underground coal mine occupations exposed to the highest respirable dust concentrations, as well as all miners with evidence of black lung.** Unlike the current device, which requires dust collected on a cassette be sent to labs for analysis (a process which can take days or weeks to receive results), these new, state-of-the-art devices provide miners and mine operators with dust exposure results in real time during the miner's shift.

The rule's increased sampling frequency provisions also will go into effect at this time. For high-exposure occupations, 15 valid samples must be obtained on consecutive shifts every quarter, instead of the five samples previously collected either on consecutive days or on consecutive shifts every two months.

Finally, operators must post results of CPDM sampling within 12 hours of the sampled shift, and miners with evidence of black lung must be given a copy of the sample data within the first hour of the miner's next work shift.

"The use of the new, cutting-edge CPDMs provides for real-time dust level readings and allows corrective actions to take place more quickly. This, along with increased sampling frequency and the protections already in place, will help rid the coal mining industry of this terrible disease and protect our miners," said Main.

**Alberta Water Well Drilling Association Convention and Trade Show**

at the Sheraton Hotel & Conference Center,  
Red Deer, AB, Canada

**Heads up, Days Have Changed!**  
**April 21 - 23, 2016**

**Be Sure To Join Us Once Again In Red Deer**

For More Information Contact Carol Larson  
Phone: (780) 386-2335 • E-mail: [awwda@xplornet.com](mailto:awwda@xplornet.com)



## Following up on Habitat Geothermal

by Peter Tavino  
Litchfield Geothermal

The dedication ceremony for the Habitat for Humanity House featuring the three-ton geothermal heat pump and drilled borehole donated for free by the Connecticut Geothermal Association (CGA) was held on November 7, 2015. The Northwest Connecticut Habitat organization prominently acknowledged this good work in their ceremony program. The

young couple and their two infant children were pleased with their new house, and looked forward to no fuel bills and inexpensive domestic hot geothermal water. There was a display table with literature and CGA signs.

Along with the blessing minister and guitarist who led the assembled audience in prayer and music, three geothermal installers present were recognized.

Because I coordinated the project over the two years the renovation took place, I was invited to speak as listed on the program agenda, and did so. I noted this was the first - but hopefully not the last - time a geothermal system with ducts having a value of \$30,000 was donated by a volunteer state geothermal association anywhere. I stated the system would not have been completed without the help and knowledge of current CGA President John Sima and Past President Guy Wanegar seated in the audience.

I described the volunteer process for the assembled audience, and how the system was drawing heat from the ground. I also described the recent news article that the holiday tree at Rockefeller Center gets recycled into lumber for Habitat for Humanity houses after the holidays. So I jovially asked if the piece of wood trim he touched was on 50th Street in New York City last year. It was noted the heat in the house is similarly recycled into the 430-foot-deep borehole ledge rock. Heat was currently being withdrawn from the ground to heat the house in winter, and would be deposited into the ground to cool the house in summer.

The 17 drilling and heating contractors and suppliers, especially WaterFurnace who donated the heat pump, were all mentioned, and a list of their roles was made available to the participants. The Habitat liaison folks were also recognized.

Last year, I presented a PowerPoint slide show on the volunteer project at the International Ground Source Heat Pump Association Conference in Baltimore. Also, a dozen CGA members attended the Connecticut Society of Civil Engineers dinner meeting, where the project won the state Environmental Award of Merit. CGA continues to lead the way in community service projects and other activities beneficial to the geothermal industry.

*The statements and comments in this article are based on information and references believed to be true and factual. If you have any questions or comments, please forward them to me in care of **WWD.R.***

*Pete*

michele@

worldwidedrillingresource.com





**BIT BROKERS INTERNATIONAL**  
ESTABLISHED 1988  
USA

**BIT BROKERS INTERNATIONAL™**



ALSO ASK ABOUT OUR  
**RE-FIT™**  
PDC REPAIR SERVICE

**OUR PRODUCTS**

- TRICONES
- PDC BITS
- DTH HAMMERS
- HAMMER BITS
- PDC REAMERS
- HOLE OPENERS
- DTH HOLE OPENERS
- SACRIFICIAL BITS
- HDD REAMERS
- HDD SINGLE CONES
- HDD HAMMERS
- HDD HAMMER BITS
- HAMMER SUPPORT PACKS
- CROSSOVER SUBS
- DRAG BITS
- AND MUCH MORE!

**CALL FOR YOUR QUOTE TODAY!**

**1-618-435-5811**

5568 LOGAN ROAD  
WEST FRANKFORT, IL 62896  
WWD@BITBROKERS.COM  
PH 618.435.5811  
FX 618.435.2388

VISIT US ONLINE AT **BITBROKERS.COM**

ALSO FIND US ON FACEBOOK AND TWITTER!  



## No Keystone Pipeline

Compiled by Bonnie Love, Editor, *WorldWide Drilling Resource*®

On November 6, 2015, President Obama officially rejected the Keystone XL Pipeline proposal stating it "would not serve the national interest of the United States." He also said the pipeline would not make a meaningful long-term contribution to the economy, and would not lower gas prices for American consumers.

Supporters of the pipeline are disappointed and fear the decision may strain relations with Canada. American Petroleum Institute President and CEO Jack Gerard called the rejection a clear example of politics coming before the interests of American workers and consumers.

"It's ironic that the administration would strike a deal to allow Iranian crude onto the global market while refusing to give our closest ally, Canada, access to U.S. refineries," said Gerard. "This decision will cost thousands of jobs and is an assault on American workers. It's politics at its worst. Unfortunately for the majority of Americans who have said they want the jobs and economic benefits Keystone XL represents, the White House has placed political calculations above sound science. Seven years of review have determined the project is safe and environmentally sound, yet the administration has turned its back on Canada with this decision, and on U.S. energy security as well," he stated.

The U.S. State Department's Environmental Impact Statement (EIS) for the project revealed the pipeline is the safest and most environmentally secure way to transport oil from Canada. Canadian oil will continue to travel to American refineries, but will likely be transported by rail, which according to the EIS will produce 42% more greenhouse gas emissions when compared to transporting the same oil through the Keystone Pipeline.

James Taylor, vice president, external relations for the Heartland Institute said, "The only asserted reason for this face slap to our Canadian neighbors is the Keystone XL pipeline will carry oil. There are no environmental, economic, or diplomatic reasons to block construction of the pipeline."

So, what's next? Don't plan on TransCanada, owner of the proposed pipeline, to just roll over and call it quits. The company remains committed to building the Keystone Pipeline. At this point, they have a couple of options including suing the U.S. government under the North American Free Trade Agreement to recover some of the \$2.8 billion the company has spent trying to get the project



started. Another option would be for the company to simply wait until after the U.S. presidential elections to see if the project will have a better chance with a new president. For now, the company will analyze the reasons for the denial and review all of their options.

Should the pipeline ever receive the presidential permit, it would take approximately 2 years to bring the pipeline into service, transporting up to 830,000 barrels of oil per day to the Gulf Coast and Midwest refineries.

*Editor's Note: In between our print issues, the WWD&R Team prepares an electronic newsletter called E-News Flash. Based on readership, this was the most popular E-News Flash article of the month. Get in on the action and subscribe today at:*

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

### CALL for FREE\* Hose Clamps

**We know after you try them, these will be the only clamps you will buy.**

⇒ 100% Made in USA (IDEAL® and others are not)

⇒ Stronger Housing Provides More Torque (IDEAL® and others do not)

⇒ Better Material Plus Better Prices

**Call Merrill 1-800-831-6962**

We send you a coupon to take to your distributor to pick up your FREE\* box of 10 clamps



Known For Service - Quality - Selection

Storm Lake, Iowa 50588

1-800-831-6962

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

Don't miss your chance to be in *WWD&R*'s March issue!

Call (850) 547-0102

**DEADLINES:**

Space Reservation - **JANUARY 25<sup>TH</sup>**

Display & Classified

Ad Copy - **FEBRUARY 1<sup>ST</sup>**



## Drilling Into Money Not Boring

by Mark E. Battersby

### Employees, Payroll, Overtime, and Taxes

Every employer faces countless rules regulating the payments made by a drilling operation to its workers. There are rules dictating when - and which - workers must be paid overtime, as well as the amount of taxes which must be withheld and when they must be paid to the Internal Revenue Service. Unfortunately, the potential for even more payroll problems increased recently for many drilling professionals when the U.S. Department of Labor (DOL) proposed new payroll-related rules.

The DOL's current rules do not limit either the number of hours in a day or the number of days in a week an employee may be required to work, as long as the employee is at least 16 years old. Similarly, the DOL places no limit on the number of hours of overtime which may be scheduled. However, the rules do require employers to pay covered employees not less than one and one half times their regular rate of pay for all hours worked in excess of 40 in a workweek, unless the employees are otherwise exempt.

The rules recently proposed by the DOL would raise the threshold at which salaried workers making up to about \$50,000 annually, even those classified as "managers" and currently exempt from the rules for hourly employees, would qualify for overtime pay under the FLSA (Fair Labor Standards Act). The current salary threshold, set in 2004, is \$455 per week (\$23,660 per year) with the finalized rule expected to take effect in 2016.

Remember, however, drilling operations not covered by the federal laws are, in all-likelihood, subject to similar overtime laws in their state. Not too surprisingly, where an employee is subject to both the state and federal overtime laws, the employee is entitled to overtime according to the standard that will provide the higher rate of pay.

Unfortunately for those in the drilling industry, there is no definitive answer to whether or not seasonal employees are exempt or entitled to overtime. Wage and employment law varies from state to state, so checking local regulations is vital.

With Uncle Sam reportedly gunning for small businesses with delinquent payroll tax problems and the DOL increasing the pressure on employers with their proposed overtime rules, understanding the basic rules for overtime and payroll taxes - and the requirement to pay withheld amounts - is a necessity. Guidance and advice from a competent, qualified advisor is virtually a requirement.

*Mark*

Mark E. Battersby may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

STAR IRON WORKS  
Serving the Drilling Industry

SERVING THE CONSTRUCTION INDUSTRY

*Need something special?  
Talk to us - we'll make it happen  
faster than you think.*

257 Caroline Street  
Punxsutawney, PA 15767  
800-927-0560 • 814-427-2555  
Fax: 814-427-5164  
[www.starironworks.com](http://www.starironworks.com)



When you are looking for:



Airend rebuilds available



Doosan WCAT



Gardener Denver two-stage air booster



Rebuilt RD20 rotary heads

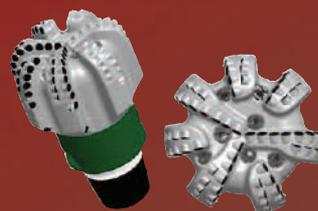


Crawler Drill



1170 MCAT

Bits and Hammers



Keystone Lubricators

Available in 7 - 33 Gallon sizes  
Featuring:

- Easy to remove cap
- No moving parts
- No pumps or wiring
- Fill while you drill
- Fits any drill rig
- Pressure ratings up to 2400 psi



Call Keystone Drill Services, Inc.

(800) 221-0586 • sales@keystonedrill.com

keystonedrill.com

Serving the Drilling Industry for 30 years!



## Pre-Registration NEWWA

New England Water Well Expo March 11 - 12, 2016  
Best Western Royal Plaza Conference Center  
Marlborough, Massachusetts

New England Water Well Association CC Meeting and Event Services  
7 Bailey Lane, Brewster NY 10509 Phone: 845-278-1892 Fax: 845-278-1899

Contact: \_\_\_\_\_

Address: \_\_\_\_\_

State/Zip Code: \_\_\_\_\_

Phone & Fax : \_\_\_\_\_

E-mail: \_\_\_\_\_

Pre-Registration \$ 20 per person  
Spouse & Children under 16 years  
FREE

Onsite Registration \$ 25  
Registrant (s) Names: \_\_\_\_\_

Credit Card Type \_\_\_\_\_ Credit Card Number \_\_\_\_\_  
Expiration Date \_\_\_\_\_ CCV (security code) \_\_\_\_\_



**Pre-Registration Deadline - February 14, 2016.**

Complete this form and fax or mail it along with your payment ASAP to NEWWA.

Register online at [www.newwassassociation.org](http://www.newwassassociation.org)

**NEWWEXPO@gmail.com**

location some days before, and the creek was the deepest in this area. Since it was so difficult to get to, he was sure no one would ever spot the basket in this part of the creek.

Tying a light rope to the basket and anchoring it to a small tree, it was time to launch it into the water. He suggested we swing it back and forth and on the count of three, throw it out as far as we could into the deeper water. Simple enough, right? On the count of three, the fish basket sailed through the air. Expecting to hear a big splash of some sort, we were surprised to hear what sounded more like a little plop! Taking the flashlight, we were shocked to see the fish trap had only sunk about six inches into the water. "This can't be," Romie said. "I know the creek is deeper than that."

Walking closer to the creek to get a better look into the water with the flashlight beam, he just stood there for about 15 seconds without speaking. I finally asked what was wrong. His next words were, "You know, Jim. I think we should call the game warden."

"Call the game warden?" I asked. "Are you crazy? What are you talking about?"

"Jim," he said, "You're not going to believe this, but we just threw this thing right on top of the game warden's fish trap! That's why it didn't sink. I know it's his fish trap. I'd recognize it anywhere."

Our next course of action was to pull our fish trap out of the creek and lug it about 150 feet downstream, positioning it in such a way that some fish could easily swim past it and still get into the game warden's trap upstream, without having him become suspicious of the lack of fish in his illegal trap!

But that's not the end of the story. As luck would have it, a couple days later when Romie was driving out to retrieve any rough fish caught in the trap, he saw the game warden driving out from the abandoned farm site. Continuing on down the main road until the game warden was out of sight, he turned around and drove to check the results of our previous midnight adventure. Finding a number of rough fish in the trap, he put them into a big burlap sack and drove home. Some years before, he had built a thermostatically controlled gas-fired smokehouse, and was often called upon to smoke fish and other types of meat for some of his neighbors in town. Romie called me later the same day and asked if I might be able to help him clean our fish before putting them in the smoker. Of course I eagerly agreed. When I arrived I was surprised to see quite a number of fish had already been cleaned, and remarked I never thought we'd catch so many fish. He said we really didn't catch so many. The rest of them came from the police chief.

When Romie got home with our fish, the chief was out in his yard. So Romie walked over and told him that someone had given him some fish, and he was going to smoke them; and if the chief ever got some fish he would like to have smoked, he should just let Romie know. Can you believe the chief just happened to have a number of fish someone had just "given" him also? Talk about coincidence! The chief brought the fish over and helped Romie clean them. Romie told him the fish certainly looked like they could have come out of the same "lake" as the ones he had! He told him he would let him know when they came out of the smokehouse. So with my help cleaning the rest, Romie, I, and the game warden had some good-tasting fish. Those were memorable days.

*Jim*

[michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

## Through the Front Door!

by Jim Kuebelbeck



### Fish Net Part 2

Early the next spring, after the ice went out, I got a call from Romie. He wanted to go out the next night after dark and put his fish trap in the creek. He would pick me up; and he knew just the place to put the thing where nobody would find it. The next evening after dark, he drove out with his pickup with a big tarp covering "the great fish trap". Then, driving over to an abandoned farm along the creek, we unloaded the basket and carried it quite some distance. Using a flashlight, we lugged the thing through the heaviest thicket of brush and reeds I had ever seen. I asked Romie how he ever found the out-of-the-way place, and he told me he had scouted out the

### Specialty Winches for Drilling

Designed for outstanding performance and dependability.



Lift-Safe™

Worm Gear and Planetary Winches

the **Best Value** in Hydraulic Cable Winches



BLOOM Mfg. Inc.

FAX 319-827-1140

PHONE 319-827-1139

1-800-394-1139

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

"Custom Engineered Solutions"

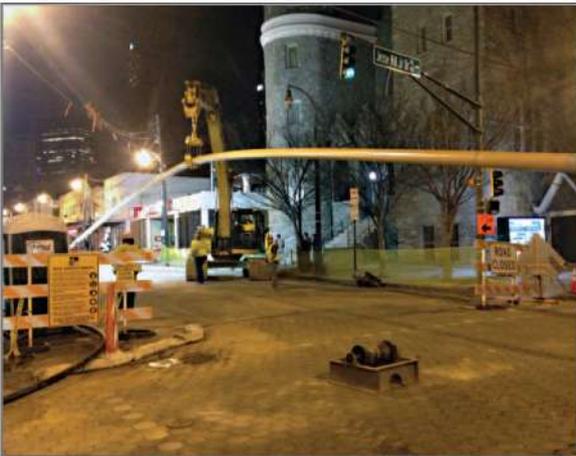
# HDD Preserves Atlanta's History

Compiled by Amy White, Associate Editor *WorldWide Drilling Resource*®

In downtown Atlanta, a historic district known as "Sweet Auburn" reflects the city's cultural heritage. This National Historic Landmark is the birthplace of Dr. Martin Luther King, Jr., among other famous sites.



Photo courtesy of [streetcaratlanta.gov](http://streetcaratlanta.gov)



Mears Group performed pullbacks at night to reduce disturbance to the general public. This involved careful planning, as well as the ability to adapt quickly. As an experienced HDD contractor, the company was able to overcome challenging circumstances. Photos courtesy of Mears Group, Inc., Horizontal Directional Drilling.

Prior to 2015, interstate highways separated Sweet Auburn from the rest of Atlanta. When the city announced plans for a new 2.6-mile electric public transit streetcar system to reconnect portions of Atlanta, horizontal directional drilling (HDD) became necessary to complete the missing link.

A new underground transmission line was required to power the streetcars, and preservation of the district's landmarks was of utmost concern. To further complicate things, as many as 15 underground utilities were located below the street, making installation of a new line especially tricky.

Consulting engineering firm Terracon was hired to provide comprehensive geotechnical instrumentation, structural condition surveys, and a monitoring program to control and manage risks. Terracon conducted building-condition surveys before and after construction, using over 7000 photos, videos, and field notes to record structural conditions.

Geophysical seismic refraction and reflection techniques helped keep the drill path within softer rock zones, rather than bedrock which would have required larger machinery in the urban setting, as well as a longer timeframe for construction, greater impacts to the neighborhood, and increased project costs.

Mears Group installed HDD sections using an intersect technique, drilling from east to west uphill, then shifting the HDD rig to the exit end. This method provided additional torque for the backream through a harder rock zone toward the exit, and helped curb the loss of drilling fluid. Mears Group completed the pull-back in 23 days.

Various utilities at the HDD entrance and exit included electric transmission ducts and service connections, natural gas lines, sewer, telephone, water, fiber-optic cables, and stormwater conduits. Old trolley car rails and wooden crossties also had to be dodged by the drill. The HDD path was extended 180 feet due to additional unmarked utilities being revealed along the way.

Phase One of the Atlanta Streetcar system opened for use in December 2014, representing a grand vision for the future of public transit between different parts of the city, and connecting modern Atlanta to its rich history. More lines are in the planning phase for expanded service to additional neighborhoods and popular destinations.



## POWERTEC<sup>X</sup>

THERMAL ENHANCEMENT COMPOUND  
MIXES FROM 0.79 TO 1.60 BTU/HR FT °F

# DO MORE WITH LESS

**LESS FREIGHT.**

**LESS WEIGHT.**

**LESS FORMATION LOSS.**

**LESS LABOR.**

[GEOPROINC.COM](http://GEOPROINC.COM)

On January 18, 1930, oil producers met in Wichita Falls, Texas, to organize an alliance which is still active today. Maybe you've heard of it? See page 23 for the answer!



WWDR photo of Steve Smith at the 2015 IGSHPA Expo.

# A CALL TO ACTION FOR THE GEOTHERMAL INDUSTRY

Adapted from a Press Release by the Geothermal Exchange Organization

At the recent International Ground Source Heat Pump Association (IGSHPA) Conference & Expo, Chairman of the Geothermal Exchange Organization (GEO) Steve Smith, addressed the geothermal tax credits which are scheduled to expire at the end of this year.

The 30% residential and 10% commercial income tax credits, which began in 2008, did help the industry get through the recent economic downturn. "The tax credits were really a savior for us. As we saw new construction drop off, both residential and commercial, we saw an uptick in the retrofit market that flipped to 75% of our sales in a couple a years. I lay a lot of that on the tax credit, which got a lot of people thinking about geothermal when energy costs were higher than today," Smith said.

Although the tax credits were a great tool to keep the geothermal industry going during the recession, the industry never really had a chance to help build the market share. With new construction on its way up, although it's not where it was in the early 2000s, an extension of the tax credit will help the geothermal industry accomplish its original goal over the next four years.

GEO has been working on the issue very hard in Washington, D.C., as well as individual states to get the tax credit extended. "We ask for your help. We need all hands on deck with strong unity. When we walk into those House, Senate, and committee meetings, we need a long list of industry members in their districts and in their states. To accomplish that, we will be working hard with IGSHPA and with the National Ground Water Association. GEO will tie this together to show the power we have as a strong lobby with a real voice. We need that voice to be as loud as the solar industry's voice... We need you and your companies to give force to our efforts. When we walk into the offices of our elected officials, we want to point to a long list and say, 'Here are your constituents involved in geothermal heating and cooling, from installers, drillers, engineers, architects, suppliers, to manufacturers - everyone in the industry.' The bottom line is that we need to work together if we are going to be strong," he concluded.



An ISO 9001 / TS 29001 Registered Organization

Value is not just price, but the overall service and experience offered by Throop Rock Bit Company.



PO Box 416 • Tonkawa, OK  
(580) 628-3416 Fax: (580) 628-2703  
E-mail:sales@throoprockbit.com

www.throoprockbit.com



Advertise your products and services in the WorldWide SUPER MART™ for less than a cup of coffee per day! Call Kathy or Brenda: (850) 547-0102

## Where are you planning to go?

### How about including these shows:

The 42nd Annual Conference on Explosives & Blasting Technique by the International Society of Explosives Engineers will be held January 31-February 3, at the Paris Las Vegas Hotel and Casino in Las Vegas, Nevada.

Blasters, manufacturers, suppliers, government officials, and *WWD* will gather from all over the world to gain new insights and form new business alliances. The 2016 program includes a dynamic education program featuring technical sessions, poster sessions, and workshops combined with over 130 exhibits of the latest technology.



Visit [www.isee.org](http://www.isee.org) to register for four days full of fundraisers, special events, and tours for attendees and spouses.



Smart business, premier exhibits, and excellent education opportunities can all be enjoyed at the Underground Construction Technology (UCT) International Conference & Exhibition at the Georgia World Congress Center in Atlanta, Georgia, February 3-4.

UCT's exclusive, professional conference offers 80 sessions over two days, focusing on the total underground utility pipe infrastructure - trenchless, open cut, new construction, and rehabilitation. Gain an understanding of the new technologies and products on display in the exhibit hall and stay on top of the latest safety, regulatory, and operational issues impacting

the way you do business. Look for red and you'll find *WWD* there!

See the program at [www.uctonline.com](http://www.uctonline.com)

Mingle with fellow drilling professionals, earn continuing education credits, and visit with exhibitors on the trade show floor during the Montana Water Well Drillers Association's 71st Annual Convention. Join *WWD* February 3-5, for a great time at the Billings Hotel & Convention Center in Billings, Montana.

Festivities include a silent auction, McElhiney lecture, seminars, product displays, cocktail hour, banquet, award presentations, and casino night! What more can you ask for? Well, there's also the annual meeting Friday morning, then the Board of Directors meeting that afternoon.



Go to [www.mwwda.org](http://www.mwwda.org)



The *WWD* Team always looks forward to visiting the fine folks of the water well and ground water associations of Arizona, Colorado, Nevada, New Mexico, and Utah, during the Annual Mountain States Ground Water Expo. The upcoming event is set for February 11-12, once again at the Aquarius Casino Resort in Laughlin, Nevada.

See all the interesting exhibits inside, but don't forget there's more equipment outside! Listen intently to the industry speakers for vital information for a job well-done. The highlight of the gathering is the live auction. Be ready to outbid the others for these unique, one-of-a-kind items only to be found at the Mountain States Expo!

For more information, visit [www.mountainstatesgroundwater.com](http://www.mountainstatesgroundwater.com)

Mark your calendar for the Virginia Water Well Association Winter Conference, February 17-19, at the DoubleTree by Hilton in Richmond, Virginia. This year, the theme is "ENGAGE" ~ encompassing the idea of participating, joining in, and playing a role with all attendees from contractors to regulators, suppliers, and manufacturers. The hope is to reflect the theme throughout the trade show, dinner banquet, course schedule, and other happenings.

*WWD* is excited about the changes this year, and hope they are a success. There will be a minimum of 30-minute breaks between breakout sessions, product spotlight times for exhibitors in an open-air trade show atmosphere, along with company narratives. An auction is also scheduled, so don't forget to bring your donations and your checkbook!



Register at [www.vawaterwellassociation.org](http://www.vawaterwellassociation.org)



ALERT! The Tennessee Water Well Association Annual Meeting & Trade Show is set for February 26-27, at the Park Vista Hotel, in Gatlinburg, Tennessee. Seminars abound, displays overflow, dinner flourishes, and the auction prospers for education. *WWD* looks forward to seeing you there!

Visit [www.tnwaterwellassociation.org](http://www.tnwaterwellassociation.org)

See more events online at [www.worldwidedrillingresource.com/Planning2.pdf](http://www.worldwidedrillingresource.com/Planning2.pdf)



## Garnet, January's Birthstone

by Harry W.  
Short  
Engineering  
Geologist

If Great Aunt Millie's birthday falls in January, consider buying her jewelry with a garnet gemstone. Garnets symbolize grace, truth, and fidelity. The ancients were fascinated by its bright, deep red color. It comes in several other colors, except blue. Different varieties of garnet occur in shades of red and violet, pale green, orange-yellow to orange brown, deep green to transparent green, and yellow-green to black.

Garnets are iron rich with oxides of aluminum and silica, the common ingredient of which quartz is composed. The various colors in garnets are derived from calcium, magnesium, manganese, and chromium ions which substitute (replace) iron in the mineral. Substitution occurs when several ions of calcite and chromium gang up on the iron and aluminum ions. This causes the color to change and impacts the stone's physical properties to the crystal structure, making garnets valuable as gemstones and used in industrial applications.

Garnets are composed of common elements found abundantly in the earth's crust, such as aluminum, silica, oxygen, iron, calcium, and manganese. Crystalline garnets are found in metamorphic rocks, schist, gneiss, and as secondary or accessory minerals in igneous rocks. Pyrope, the manganese variety of garnet, occurs in dark-colored igneous rocks called peridotites and kimberlites. Since garnets are hard, they're often found in streams as placer deposits and can be mined with draglines or dredges.

The hardness of garnets makes the nongemstone iron-rich variety, almandine, valuable as an abrasive used to manufacture sandpaper and grinding wheels. They can be used for sandblasting, water jet cutting, and ground into a fine media for tumble polishing other rock or mineral materials in the lapidary arts. Garnets are also used to prepare nonskid surfaces, and as a filter media for various fluids.

In 1999, the United States mined over 25% of the 214,000 tons of the world's supply of garnets. The majority of U.S. garnets come from the Adirondack Mountain region in New York State. Other garnet-producing states include Idaho, Maine, Montana, New Hampshire, North Carolina, and Oregon. The three major worldwide producers of garnets are Australia, India, and China, with lesser amounts from Russia, Turkey, Norway, Canada, the Czech Republic, Pakistan, and the Ukraine.

Don't forget to remind Aunt Millie each January that the pretty red stone on the necklace you bought to commemorate her birthday is not an ordinary gemstone, it's a garnet!

*Harry*

Harry Short may be contacted  
via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

**SALE** **SALE**

**TEE JAY INTERNATIONAL, INC.**

"Serving the drilling industry since 1908"  
"When it comes to 'BITS', we know the DRILL!"




**7-7/8" retip for \$195**

618-937-4571 Fax: 618-937-2529 US Toll Free: 800-345-0562  
West Frankfort, Illinois 62896 USA  
Location #1  
E-mail: [teejay@midwest.net](mailto:teejay@midwest.net)  
**[www.teejayintl.com](http://www.teejayintl.com)**

*Delivery Quoted Worldwide*  
*Same Day Shipping*  
*Next Day Air Available*

**2016 Winter Conference**  
**February 17-19, 2016**



Register Today Double Tree by Hilton Richmond, Virginia

Office: (804) 387-8395  
[Info@VAWaterWellAssociation.org](mailto:Info@VAWaterWellAssociation.org) [www.VAWaterWellAssociation.org](http://www.VAWaterWellAssociation.org)

On January 18, 1930, oil producers met in Wichita Falls to organize today's Texas Alliance of Energy Producers.

# T & T CARBIDE INC

## Celebrating 38 Years

- Gas/Oilfield
- Water Well
- Geothermal
- Construction
- HDD
- Mining

- Highest Quality Rerun TCI
- And Steel Tooth Tricones
- Custom Made Hole Openers
- Stabilizers and Subs
- New/Surplus TCI And
- Steel Tooth Tricones



17409 Lowry Ave. Logan, IL 62856\*800-333-1816\*618-439-7253

Fax: 618-435-4347\*[www.tandtcarbide.com](http://www.tandtcarbide.com)\*Email: [sales@tandtcarbide.com](mailto:sales@tandtcarbide.com)

# Environmental Monitoring

by Thomas Kwader, Ph.D., P.G.



## When Does Pumping Exceed Safe Yield?

Many areas of the United States are pumping groundwater at rates exceeding the average annual rate of groundwater recharge. If that trend continues for extended periods of time, the average water level in these aquifers will continue to decline and not rebound during "off-season" or during periods of lower pumping rates.

Declining water levels will require "old" wells to have their pumps set lower in the aquifer, or even require the wells to be drilled to deeper depths and have larger pumps installed.

As demands upon groundwater increase due to population growth, increased irrigation, industrial use, or extended periods of "lower than normal" precipitation, large "circular" cones of water level depression will grow in size extending to areas where there may be very little pumping occurring. Streams and rivers will begin to flow less and ponds and lake levels may fall to all-time low levels, or even dry up. These are all signs the demand on groundwater has exceeded the "safe yield" of the aquifer to supply water needs to the area. There are places in the U.S. where these areas extend hundreds of



square miles where the water levels have declined tens to hundreds of feet.

Can this trend be reversed, and water levels stabilize or even recover? The short answer is yes, but rarely, and it is rarely seen. To reverse these trends, rainfall must increase significantly for many years and pumping rates decline to rates back when water levels were stable.

Conservation of water, especially by large consumers of groundwater, can often make a huge difference. Reuse of water, using water two or more times before discharging to waste, can also help stem the decline of groundwater levels. Irrigation is often a huge consumer; however, there have been many new innovative technologies to reduce the amount of water needed to irrigate crops which focus on getting more water to the plant roots and decreasing losses to evaporation.

Most groundwater supplies are finite and can be overutilized. It is recommended to conserve and save water before the water declines reach serious levels.

*Tom*

Tom Kwader may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)



Thank you for making 2015 a great year. *WDR* wishes everyone in the drilling industry a safe, prosperous, and wonderful New Year! Let us know if we may assist in marketing your products and services, or share your story with the world! We look forward to helping you reach your goals in 2016...

(850) 547-0102

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



PO Box 4147  
West Columbia, SC 29171

### Stock Hydro-Pneumatic Tanks

*subject to prior sale*

Gallon	Size	Weight
1000	42" x 168"	1475
2000	60" x 168"	2810
3000	66" x 204"	4470
5000	72" x 288"	6670

**803-794-3360**

Custom sizes and pressure ratings up to 40,000 gallons available!

1. All tanks are ASME stamped for 125 psi.
2. All tanks are shop primed on exterior, custom paint available.
3. The interior is lined with an NSF-approved epoxy.
4. Lifting lugs and manhole included.
5. Add for saddles and freight.

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

# Funding Opportunity for Groundwater Monitoring

*Adapted from Information by the USGS Office of Water Information*



The USGS (U.S. Geological Survey) National Ground-Water Monitoring Network (NGWMN) is starting a new cooperative funding opportunity to support NGWMN efforts beginning in 2016. The NGWMN is a compilation of selected groundwater monitoring wells from federal, state, and local groundwater monitoring networks across the nation.

This set of cooperative agreements will support both new and existing data providers. The first round of funding will be for a two-year period in 2016-2017. The focus of the initial funding is on bringing in new data providers for the Network and supporting existing data providers. Future opportunities may include funding for existing data providers to fill gaps within the NGWMN.

During the first round of funding, the USGS will work with new data providers to select and classify sites within existing monitoring programs, to set up web services to link the data to the NGWMN Portal, and produce a report describing this process. New data providers will also be funded to document their data collection techniques and database management processes. Existing data providers will receive support to maintain web services and keep site information current.

The projects to fund new data providers are expected to range from \$30,000 - \$60,000 based on the reports from pilot ventures. Projects to support database maintenance for existing data providers are expected to range from \$10,000 - \$30,000. Applicants will be required to provide cost-sharing in the form of in-kind services which ideally will be 50% of the project with USGS funds providing the remaining 50%.

Interested agencies can apply online at [www.Grants.gov](http://www.Grants.gov) under funding opportunity number G16AS00008. Applications will be accepted through January 19, 2016. Applications will only be accepted electronically; paper copies will not be accepted.

## High-Capacity Groundwater Wells and Groundwater Well Accessories

### Environmental Accessories

PVC water well screen, flush thread PVC screen and casing, flush thread HDPE well screen, open end PVC well screen, belled end PVC screen, perforated well screen, custom slotted well screen, PVC submersible pump screen, centralizers, sparge point, and a complete line of PVC fittings and well accessories.

### Residential Water Well Accessories

Well cap, well seal, pressure switch, pitless adapter, pitless unit, yard hydrant, tank tee, point-of-use filtration, water well accessories, stainless steel, lead free brass, insert fittings, gauges, and valves.



Please check Baker Water Systems on YouTube listed under Baker Manufacturing Company, LLC. to find videos on installation, news story coverage, and more.



800-356-5130  
monitor@baker-mfg.com  
www.bakerwatersystems.com





# Feed Rate and Bit Pressure

by Scott Cosby

This month's article will focus on two important drilling variables - feed rate and bit pressure - whether it's water well, geothermal, or geotechnical drilling. The basic function of drilling is to advance the hole from the surface to a determined depth, and perform other required activities (well placement, foundation tests, etc.). Every drilling professional should have a firm grasp of the importance of feed rate and bit pressure variables.

**Feed Rate:** This is the rate the bit is advanced into soil or rock material. It can be expressed in inches per minute, inches per bit revolution, or the number of bit revolutions per inch of advance. You can visually time the movement because the feed rate is easily seen by the downward motion of the rig's piston rods within the hydraulic cylinders.

**Bit Pressure:** This is the weight or pressure applied to a bit during drilling operations and is expressed as the number of pounds or tons of weight applied. A gauge is used to monitor the bit pressure. Most drill rigs will have a bit pressure gauge installed somewhere near the primary drill rig controls.

I have not seen a written determination for the proper use of feed rate and bit pressure. The drill bit itself should be considered in terms of feed rate and bit pressure, so know the limitations of your drill bit.

Another consideration is the soil or rock materials being drilled. In soft materials, increasing the feed rate and bit pressure may cause the bit to become clogged, where the bit is actually forced into the material and not cutting through it. Sound judgment of the material is also needed from the person drilling.

Drill rig technology allows the operator to "dial" a specific feed rate and bit pressure during drilling, but a firm knowledge of these two essential drilling variables, along with sound judgment of the soil and/or rock materials being drilled will ensure success in any type of drilling operation.

Watching the gauge and making sound material judgment calls are the final keys for the drill operator.

*Scott*

Scott Cosby may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

On January 13, 1957, the company Wham-O manufactured this fun product using newly-invented Phillips Petroleum polymer plastic. Hint: It will throw you for a loop! Can you guess what it is? Find out on page 32!



Typical drill rig controls.

Register Now!

**29th Annual  
Best in the West  
Drill and Blast  
Conference**



**April 20-22, 2016  
Spearfish, SD**

**Spearfish Holiday Inn and Convention Center**  
**Phone: (800) 999-3541 • (605) 642-4683**  
**For room booking use group code: BIW**  
**[www.holiday-inn.com/spearfishsd](http://www.holiday-inn.com/spearfishsd)**

**What you can expect from this conference:**

**Regulatory session • Crazy Horse Mountain Tour • Paul Muehl Scholarship Clay Shoot • Bob Martin Scholarship Golf Scramble • primer social hour • technical sessions • booster social hour • banquet • live scholarship auction • exhibitor booths with the latest in blasting technology and products • lunch • door prizes • and much more.**

**Blaster recertification credit hours available for Wyoming and many other states!**

James McNulty: (605) 786-4959 • [bitwconference@gmail.com](mailto:bitwconference@gmail.com)  
Doug Hoy: (605) 940-1055 • [dough@sayreassociates.com](mailto:dough@sayreassociates.com)

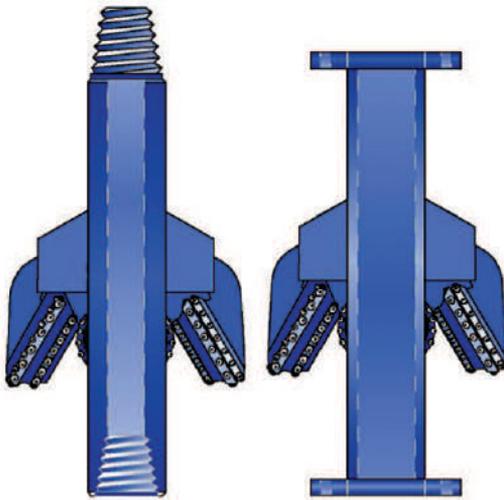
**For more information, or to register online, go to: [bitwconference.org](http://bitwconference.org)**

**See you there!**



# Custom Designed

# for FREE!



**Fabricated  
Regular  
Circulation**

**Fabricated  
Reverse  
Circulation**

**That's right! Mills Machine Company doesn't charge a penny extra to design a custom Rotary Holeopener to meet your special needs.**

We have been building Rotary Holeopeners for over 60 years for Vertical, Horizontal Raise Bore and Directional Drilling. Don't buy a holeopener built in someone's garage, call Mills Machine Company, the Holeopener professionals.

*Contact us today for a free quote or for more information about Mills Holeopeners.*

**There are a multitude of options and designs available:**

- Sizes from 5 1/2" to 110" Diameter
- Any Thread or Flange Connection
- One, Two or Multiple Stages
- Regular or Reverse Air or Fluid Circulation
- Fabricated, Fixed Cutter or Bolt-on Designs
- TCI or Steel Tooth Rollers, Drag and Bullet Cutters



**Scan this QR Code**  
Visit our huge selection of Holeopeners or customize to meet your individual requirements.

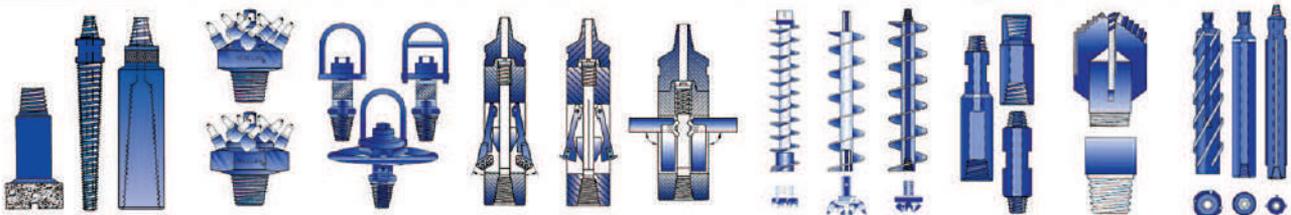


**800-654-2703**

**405-273-4900**

**millsmachine.com**

**Custom Solutions for Earth Drilling Problems**



FISHING TOOLS

CLAW BITS

HOIST PLUGS

UNDERREAMERS  
CASING CUTTER

EARTH AUGERS

SUBS

DRAG BITS

STABILIZERS

PO Box 1514 Shawnee, OK 74802 • Fax: 405-273-4956 • sales@millsmachine.com



## Plywood vs. Hardwood

*Adapted from Information by the  
Bureau of Alcohol, Tobacco, Firearms, and Explosives*

The U.S. Department of Justice's Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) has received numerous inquiries regarding substituting plywood for hardwood in type 1 and type 2 magazines.

Plywood is manufactured from sheets of wood glued or cemented together with the grains of adjacent layers rotated up to 90 degrees from one another. Although some plywood is comprised of hardwood, plywood made from hardwood is **not** considered hardwood for ATF magazine construction (or bullet-resistance) purposes. ATF Ruling 76-18, based upon the Institute of Makers of Explosives' Safety Library Publication No. 1 (IME SLP-1), Construction Guide for Storage Magazines, addresses alternate construction to meet bullet-resistance requirements in type 1 and type 2 magazines. The ruling specifies several different types of alternate bullet-resistant construction including the use of plywood.

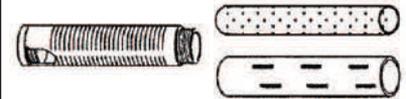
For example, under the 1976 ruling, 1/8-inch steel lined with an interior of 5 inches of hardwood; and 1/8-inch steel lined with an intermediate layer of 4 inches of hardwood and an interior lining of 3/4-inch plywood both meet the bullet-resistance standard.

This combination may suggest plywood provides greater bullet resistance than hardwood, however, the ruling also allows for a construction of 3/16-inch steel lined with 4 inches of hardwood; and 3/16-inch steel lined with 6-3/4 inches of plywood. This comparison seems to indicate a greater thickness of plywood is necessary to equal a certain amount of hardwood. Part of the reason for this apparent inconsistency is the IME SLP-1 was not intended to specify ratios of one material to another for magazine construction. The IME SLP-1 specifies multilayered construction made of common materials, used in varying thicknesses, which passed IME bullet-resistance testing. There is no one-to-one correlation between plywood and hardwood, nor is there a "ratio" for one material to another which could be used universally for explosives magazine construction.

The use of plywood in type 1 and type 2 magazine construction must comply with ATF Ruling 76-18. A variance is required to use plywood thicknesses which do not conform to this ruling.



- Well Rehab. Products
- Manholes
- Bentonite
- Filter Sock
- Inline Chemical Mixers
- Sampling Bailers
- Clear PVC Pipe
- Locking Caps



Manufacturers of Slotted &  
Perforated Pipe ranging  
from 1/2" to 24" diameter

**302-684-3197**

**FAX: 302-384-0643**

142 Broadkill Rd. • Milton, DE 19968

[www.atlantic-screen.com](http://www.atlantic-screen.com)

email: [atlantic@ce.net](mailto:atlantic@ce.net)



# MICHIGAN MGWA

## 88th Annual Convention

March 3-4, 2016

McCamy Plaza Hotel/Kellogg Arena  
Battle Creek MI

### Thursday

Registration Opens • Board of Directors' Meeting • DEQ Update • DOT Update •  
McElhiney Lecture • Auxiliary Outing • Cocktails •  
Banquet/Auxiliary Scholarship Auction • Casino Night

### Friday

Registration Opens • MGWA Annual Meeting • Auxiliary Luncheon •  
Trade Show Floor Opens • Vendor Demos

For more information call: (855) 225-6492  
or visit us online: [michigangroundwater.com](http://michigangroundwater.com)

# The Un-Comfort Zone II

by Robert Evans Wilson, Jr.



## Sometimes You Have to Hide Your Fear

I walked into the superintendent's office at the construction site and handed him the work order from the union hall. He looked at it and exclaimed, "Oh, thank God! They finally sent me another journeyman carpenter! Now I have two. I only need about 18 more. Until I get them, you'll be leading a crew of apprentices and laborers."

I felt a sense of panic in my stomach. A year earlier, as I was finishing the spring semester of my sophomore year in college, my uncle told me about a summer job opportunity. "How would you like to earn four times what you're making right now?" he asked.

Figuring he was just kidding, I replied, "I dunno, who do I gotta kill?"

"No, I'm serious. The jobsite where I'm an inspector needs journeyman carpenters, and there's a shortage here in town. You'll make union wage."

My father was a builder, and I had grown up around the construction industry. I had some skills, but at 20 years of age, I didn't think I had enough, so I said, "But I'm not a union member; and I'm not a journeyman carpenter. Don't you have to go through a four-year apprenticeship first?"

"The union and nearly every construction site in town is desperate. I know a guy with the union who will bring you in as a journeyman, and I'll vouch for you at my job site. You know how to hang sheetrock don't you?"

"Well, sure."

"Then if you can do the work, you'll keep the job. If not, they'll let you go. You want to go for it?"

"And, make four times what I'm making now - sure."

I managed to keep the job and worked the whole summer. The following summer, I was ready to do it again, but when the superintendent told me I'd be leading a crew, a wave of fear went through me. The summer before, I was clearly the junior journeyman on the job, and there were plenty of people telling me what to do. Now I was going to be in charge, and I didn't know if I could do it.

The job was a massive housing project being remodeled. There were dozens of three-story buildings that had been gutted. My first assignment was to prepare the interior walls for plasterboard. The superintendent handed me a set of plans, and pointed out the building where I was to start. "I'll send over two apprentices and two laborers."

While I was waiting for my crew, I studied the plans and the interior of the building. When my crew arrived, I still needed more time, so I sent them for tools and supplies. By the time they returned, I had an action plan and put everyone to work.

A week later, two more apprentices were assigned to my crew. Each morning, I would give everyone their assignments and we would go to work. Things went pretty smoothly for the next several weeks, then one day I encountered a problem I couldn't figure out. Panic again rose in my stomach. It was something an experienced carpenter would've known how to deal with. Because of this, I was afraid to ask the superintendent for help since it would expose what a fraud I was already feeling like inside. So I called over all the apprentices and asked if any of them had any idea of what to do. One of them said he knew, so after I sent the others back to work, he showed me. When he finished, I was so impressed I said, "Wow, you sure know a lot for an apprentice!"

He replied, "I'm not an apprentice; I've been a journeyman for 10 years."

"Ten years!" I was shocked. "Then you must be like 12 years older than me (he was very young looking and I had assumed we were the same age)."

He nodded, and I asked, "If you've been a journeyman for 10 years, why have you been letting me boss you around for the last month?"

He looked at me for a moment, then said, "Well, you're just so good at it."

The point of this story is, if you lead with confidence - even when you're afraid - people will happily follow you. Two of the most important components of effective leadership is confidence and communication. If you confidently communicate with your people, and they trust you have their (and the organization's) best interest at heart, they will follow you.

So, if you're feeling fear more than confidence, just fake it until it's true.

*Robert*

michele@worldwidedrillingresource.com



**MB** **MOAB BIT & TOOL Co, INC.**  
*Doing business for over 50 years.*

THE MOAB BLACK HOLE LINE

- PDC Bits customizable to any size and application at an affordable price.
- PDC Bit Repair
- Custom Bits
- Tricones
- Hole Openers
- Drill Pipe
- Subs
- Stabilizers
- Claw Bits
- Reverse Circulation Bits

999 W. 400 N. • P.O. Box 817  
Moab UT 84532 • Fax 435-259-2968

For bit design and bit program consultation call **800-453-1052**  
or visit us online at **www.moabbit.com**



# THE IRON ZOO OF COALINGA

Compiled by Amy White,  
Associate Editor  
WorldWide Drilling Resource®



Interstate 5 stretches from Oregon down through all of California to the Mexican border. Though it serves some of the largest cities on the U.S. West Coast, I-5 is described as a long, straight, flat, never-ending road. However, just a few miles off the freeway, near Coalinga, California, on Route 33, if you rub your eyes and take a second look, you'll see a colorful mix of painted iron beasts residing peacefully in an oilfield. How did these strange creatures come to inhabit this part of the country?

Back in 1971, local artist Jean Dakessian was a newcomer to Coalinga. She and her husband at the time had just opened the Cambridge Inn & Restaurant. Interstate 5 had recently opened and Jean was looking for a way to pull motorists from the freeway to their business. Pumpjacks along the highway gave her the inspiration she needed.

"I had never seen oil pumps like those," said Jean. "My imagination saw them as all kinds of creatures. I thought that if people came off the freeway, they would see a painted pump, go a little farther to see the next one, and on and on until they made it to...our wonderful and inviting motor lodge."



Jean approached Marshall Newkirk, the manager for Shell Oil in Coalinga at the time, and was given permission to paint her first pump. She turned it into a giant red bird. The creation was a huge success, drawing curious outsiders to town; so Shell gave the green light for Jean to create 23 more, and even donated the paint.

Chevron got in on the action, and Jean ran a contest to design the company's 34 pumpjacks. Winners could paint a pump or have Jean paint their idea. It turned into a fun community effort. Jean said, "People looked forward to seeing a new pump being created. Teachers took the students on field trips. People would gather there ('meet me at the zebra after the game tonight')." In 1975, Jean told the *Los Angeles Times*, "It's a dull 12-mile drive from Interstate 5 through the oilfields to Coalinga. I dressed up the desolation."

The oilfield came to be known as "The Iron Zoo". In its heyday, you could find a cowboy

riding a horse, a green-eyed skunk, an eagle flapping its wings up and down, along with many other wondrous inhabitants. Even Snoopy and Woodstock were there.

Jean's artwork continues to celebrate the role of petroleum in this small town's history, and people still trickle in to the Iron Zoo. Sadly, time is taking its toll on the animals, and only a few can be seen from the side of the road. Visitor Diane Melde said, "The animals weren't in nearly as good of shape last year (the last time we saw them) as they were in 2007 [when the photos by Bill Joyce included in this article were taken]. They are still fun to see, however."

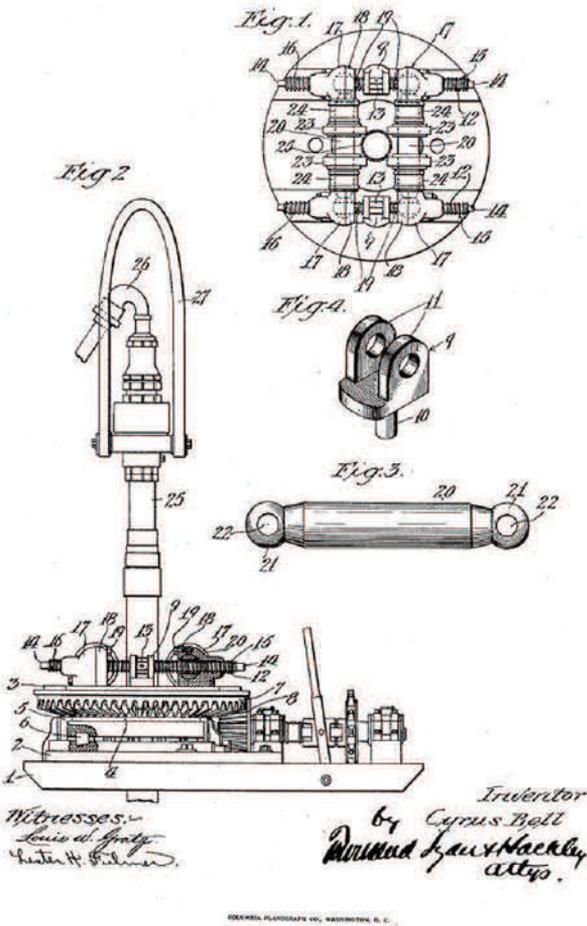
Suzanne Jordan curator of Coalinga's R.C. Baker Museum said four of the animal pumpjacks are actually still in use. Although there's talk from time to time of restoring the zoo to its former glory, the painted pumpjacks are slowly disappearing. If you ever find yourself traveling this lonesome California highway, visitors say the few faded animals left standing are definitely worth a side trip.

A special thank-you goes out to the R.C. Baker Museum and Curator Suzanne Jordan for so kindly providing the photos at the top of this page, as well as visitors Bill Joyce and Dianne Melde for sharing photos and information.

**RAUGH SPINNER**  
MODEL 512B  
Hydraulic-Pneumatic tools in stock. Sizes 1" to 20".

**Model 113HD**  
Sizes 1"-13"  
Patent  
U.S.: 6,065,372  
Canada: Pending

**RAUGH MANUFACTURING INCORPORATED**  
1132 Banks-Lowman Hwy  
Garden Valley, ID 83622  
(208) 462-3722 • Fax: (208) 462-2209  
rauchmfg.com • rauchmfg@frontiernet.com

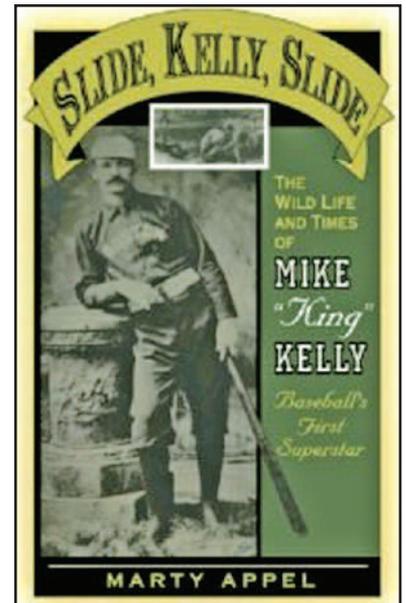


# How the Kelly Bar Got its Name

by Tony Kraut, Sales Manager, Watson Drill Rigs  
 Reprinted with Permission, from the  
 July 2015 Issue of Foundation Drilling

After some research, I discovered early oil and gas rigs turned drill pipe by using a type of worm screw clamp apparatus called a "Grip Ring." The grip ring had four round discs which made contact with the drill pipe, permitting the drill pipe to slide downward into the advancing drilled hole. The grip ring also rotated with the table drive. The table drive had four holes to accommodate the interlock of four 2.5-inch-diameter dowel pins on the bottom of the grip ring. The grip ring then rotated with the table drive at the rpm controlled by the driller. The term "Worm Hand" was the label used for the drill floor man who was responsible for tightening the worm gear on the grip ring. If the grip on the four discs was too loose, then it stopped rotation. If the discs were too tight, then it restricted the drill feed advancement of drill pipe into the hole. The worm hand got a good chewing out from the driller regularly if it was not properly maintained. He learned to hate the grip ring with a purple passion.

When the first hexagonal-shaped pipe was used, it freed the worm hand from being the dancing attendant to the grip ring and he got a whole lot less chewing out. No grip ring was needed with this new design. The square or hexagonal drill pipe



slid through the rollers and rotated at the rpm of the table drive controlled by the driller. It was very similar to the grip ring except it required no adjusting. Much as a child would do, the driller ran the hexagonal drill pipe up and back down several times to see how it operated. The worm hand suddenly realized that he was free from the blasted contraption.

During that time, a new vaudeville song about Mike "King" Kelly became very popular due to Thomas Edison's wax cylinder invention, the phonograph. The song was called "Slide Kelly Slide." King Kelly, one of the top baseball players of his day (1870s and

1880s) was also one of the most popular. Kelly was a colorful player who was famous as an audacious base-runner. After he stole 50 bases in four consecutive seasons, fans would go just to watch him play. He was one of the few players who stole six bases in one game. This was attributed to his famous slide technique.

As the worm hand watched the driller running the pipe up and back down, he shouted out loud and with great relief "Slide Kelly Slide." May the good God bless you, whatever you are, Slide Kelly Slide!

And so the name Kelly bar was born and has been used ever since.

## Plugged water well?

Take the guess work out of well rehabilitation with the Cotey Test Kit

Simply purchase the Cotey Test Kit, place your sample into the Kit and send it to our lab - You will receive test results, an interpretation and a rehab recommendation - all for one low price!



To learn more call  
 (800) 457-2096  
[www.coteychemical.com](http://www.coteychemical.com)



On January 13, 1957, Wham-O manufactured the Hula Hoop using Phillips Petroleum polymer plastic.



## Water for Life International by Tim Rasmussen

### Brake Repairs

As I write this in November, Water for Life is getting ready to ship another container to Guatemala, filled with supplies, material, and equipment. We have been gathering it all year, but in these last few weeks the pace is quicker. Gary has made numerous

trips around Washington State to gather donated items and his shop is loaded with pallets of them. We have crated and palletized everything to make the work of loading and unloading easier.

This year, we again have a lot of things to ship to the Ministry of Health to be used in the Government Hospital and in local public health programs. Many items have been donated by ALSCO, a major supplier of hospital linens, bedding, and hospital supplies. They generously provide us with many boxes of used but clean and useful items we pass on to the health officials in Peten. They are very happy to receive the supplies.

Gary recently made a trip to southern Utah to get a truck donated by one of our steady volunteers, Bob Perry of Spanish Fork. This is an older diesel truck, a '78 Chevy, but is in good condition and has many miles and years of service left in it. It will be very useful to us to transport people and items back and forth to drilling sites.

Gary made the 1000-mile trip back at a steady 55 miles per hour. The old truck seemed to like the speed, and the miles and hours passed by until he was safe at home. The brake pedal seemed a little soft, but there was no trouble on the trip and Gary was relieved to pull into the yard at home. In spite of the lack of problems on the trip, we decided to take it to a shop here in Spokane, to have everything checked and make sure it had been thoroughly serviced before shipping it to Guatemala. It is much easier to fix things here than it is in Guatemala, because of the availability of parts.

When Gary pulled out of the yard to take it to the shop, the brakes failed almost immediately. He was able to get it to the shop, and the mechanic determined a rear brake cylinder was not holding any fluid. He fixed the cylinder and when he tested the brakes, the other rear cylinder blew out. He fixed that, and we decided to rebuild the whole system.

As the mechanic rebuilt the system, he could not understand how Gary had made the 1000 miles back home without a complete failure along the way. He did not understand, but we did. The Good Lord had his hand on it. He knows this old truck has work to do; helping to bring the blessing of pure water to folks in rural villages in Guatemala. If you have the desire to be part of the blessing, please contact Water for Life. We have a place for you.

If you would like to help, contact Gary Bartholomew at 509-466-5075 or 509-939-1941

*Tim*

Tim Rasmussen may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

## Serving the Water Well, Environmental, Sonic, HDD, Mining, and Construction Industries

A Manufacturer of: Inertia-Welded Drill Pipe, Dual-Wall Drill Pipe, Wireline, Drill Rod/Casing, Composite Wireline Drill Rods, Sonic Drill Pipe/Casing/Bits, Percussion Casing/Bits, Drill Collars, Fishing Tools, Subs, Starter Rods, and Stabilizers.

Threads: API, Mayhew, BECO, DCDMA, FEDP, 88.9mm-177.8mm  
Other Industrial Threads and Custom Threads



We now accept:



### Drill Pipe Inc.

550 S Third St. • Winsted, MN 55395

Phone: (866) 220-8342 • (763) 592-8670 • Fax: (763) 592-8661

[tom@drillpipeinc.com](mailto:tom@drillpipeinc.com) • [www.drillpipeinc.com](http://www.drillpipeinc.com)



Sabine Wagner, Sabine Beck, and Stefan Rummel from Messe München were ready to answer questions about bauma 2016, which is expected to be larger than ever!

## bauma Preview in the Big Apple

A *WDR* Special Feature

In case you haven't heard, it's almost time for bauma! How do you begin to describe 6.5 million square meters packed to the limit with construction machinery, building material machines, mining machines, construction vehicles, and construction equipment? "It's big. It's really, really big!" bauma is so enormous it renders most people speechless; but our friends with trade fair organizer Messe

München are doing a great job of getting everyone ready and set for April 11-17, 2016, when the one and only bauma will come around again.

### What is **bauma**?

bauma is the largest trade fair in the world for construction machinery, building material machines, mining machines, construction vehicles, and construction equipment. It is held in Munich, Germany, every three years.

Stefan Rummel, managing director for Messe München International, addressed members of the press at a recent bauma media gathering in New York City. Paulaner NYC, a German brewery and restaurant was brimming with enthusiasm as Rummel described what's in store for Munich this coming year.

bauma 2016 promises to be more lively than ever. Rummel said the event will be pulsating with energy from new innovations. For those of us from the United States, bauma's astounding dimensions were compared to "the size of 120 American football fields." No matter where you're from, that's big!

bauma's subtitle is "The Heartbeat of Our Industry." It's a one-week event designed to set the pace for the next three years. Over 3400 companies - from market leaders to newcomers - will exhibit at bauma, and over half a million attendees are expected.

A diverse crowd, including representatives from markets in North America, Europe, the Middle East, India, Russia, China, and Latin America, helps make bauma the most important trade fair on the planet for the construction machinery industry. Those who have previously attended continue coming back year after year to take advantage of this brilliant opportunity on an unrivaled platform for showcasing companies, presenting the latest developments, and building international connections.

The event is comprehensive and clearly structured into four sectors which Rummel referred to as the "four pillars of bauma." These include: 1. All around construction sites. 2. Mining, extraction, and processing of raw minerals. 3. Machines and systems for producing building materials. 4. Component and service suppliers.

Many bauma exhibitors have product portfolios serving both the construction and mining industries. Uniting these industries in one place is a winning combination for creating new opportunities. Interest in the mining sector was high at bauma 2013, with more than 125,000 attendees (25% of total attendees) interested in mining products. An impressive 98% of these visitors gave the mining sector top marks. This coming year, a special "Mining Inside" logo will help attendees locate over 700 exhibitors related to mining.



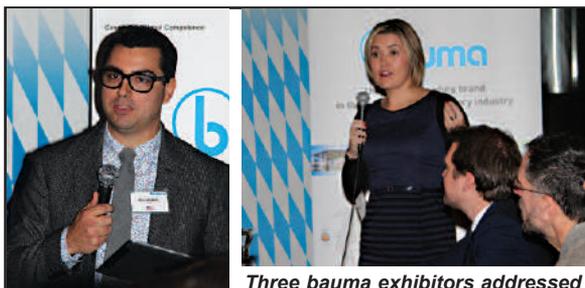
**MINING INSIDE**



Messe München Project Managers Ann-Kristin Piel and Tina Hoehn, along with U.S. Office Director Sabine Beck visit with José Manuel Salvador García of Helios Comunicación and Ing. Sergio Almazán E., director general of the Mining Chamber of Mexico. Photo courtesy of Messe München.



Messe München's Managing Director Stefan Rummel described bauma as the "pacemaker" of the industry.



Three bauma exhibitors addressed the media: Guntert & Zimmerman (G&Z), Terex, and American Augers. Top left: David Lipari from G&Z, said bauma is the best platform for G&Z to tell the world about their paving solutions. Next, Michelle Murphy told the press Terex will display over 50 lifting and material-handling products at bauma. Zach Schultz of American Augers cut right to the chase saying bauma is a great opportunity to see what the competition is up to!





Aerial image of bauma 2013, courtesy of Messe München.



bauma has something for everyone. The “Think Big!” initiative promises to be as inspiring as ever. At bauma 2013, 14,000 students participated in the program, where they were given opportunities to drive heavy machines and become encouraged about careers in the construction industry.

It's easy to understand why Rummel and the Messe München Team have such high expectations for the coming year. “Apart from a high exhibitor and visitor participation, I expect that bauma 2016 will again be an unforgettable event... The bauma atmosphere is unique: bauma is huge, it is overwhelming, enormously busy, and international - it is simply the biggest show on earth and always a successful business. And that's exactly what I expect the next bauma to be,” said Rummel.

If you're up for an exceptional opportunity to review industry trends and see what's coming next, look no further than bauma 2016! Whether you're looking for a special supplier, someone with the know-how to make your latest product idea a reality, or tips on how to enter new markets, you can meet all the experts at bauma this April. It's the perfect place to find future partners. Of course, *WWR* will be there and we hope to see you too!

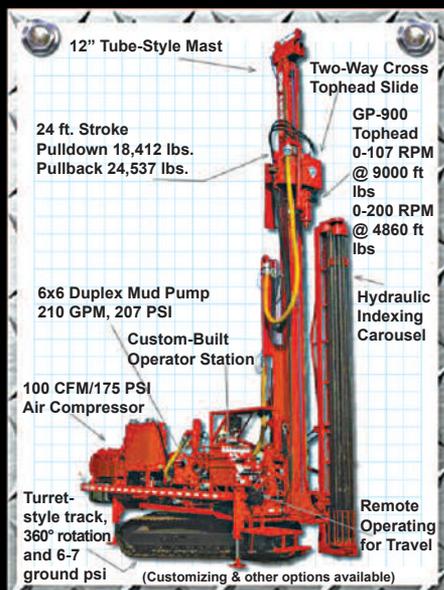


*WWR* photos.

A special thank-you to Messe München for inviting *WWR* to the media gathering in NYC and providing information about bauma 2016.



1480 Lincoln Street SW  
 PO Box 96 • Le Mars, Iowa 51031  
 (712) 546-4145 • (800) 383-7324  
 Fax: (712) 546-8945  
[www.guspech.com](http://www.guspech.com)



The GP-900 Geo Swing is the most versatile track-mounted rig in the geothermal market. The rig is mounted on a turret-style track system. The maneuverability of the track-mounted turret-style rig allows drilling in confined spaces without leaving a heavy footprint.



The Gus Pech easy-set stabilizers and air hammer capabilities make drilling in uneven terrain and bedrock no problem. The turret-style track-mounting system allows the rig to drill multiple holes in a circumference, utilizing its 360° rotation without moving the tracks. The Geo Swing is a fast, clean, and efficient means of completing geothermal and core drilling operation requirements.

**Q WATER** Patent No. 6,868,904  
WELL DEVELOPMENT TOOLS

**ENVIRONMENTAL SERIES**

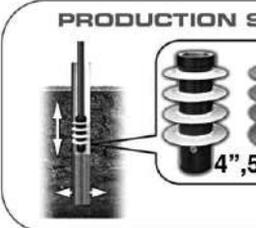


- ◆ 3/4-inch
- ◆ 1-inch
- ◆ 1.25-inch
- ◆ 1.5-inch
- ◆ 2-inch

**Advantages of Surge Block Method**

- ◆ Most effective way to develop any well
- ◆ Produces more water, less color and turbidity
- ◆ Only the surge block method "back washes" the well screen, removing clay bridge, sands and silts
- ◆ Flexible wiper creates suction and pulls water into the screen (not available with other methods)
- ◆ Constructed of inert long-lasting materials
- ◆ Capable of lifting water over 50 feet
- ◆ Removable ball valve prevents water from flowing back into well and will not clog with sediments
- ◆ Fast, effective and saves time and money

**PRODUCTION SERIES**



4", 5", 6"

For more information visit:  
[www.welldeveloper.com](http://www.welldeveloper.com)  
850.727.4427

## Proved Oil and Gas Reserves on the Rise in the U.S.

*Adapted from Information by the U.S. Energy Information Administration*

According to a recent report from the U.S. EIA (Energy Information Administration), the country's 2014 crude oil proved reserves increased for the sixth year in a row with a net addition of 3.4 billion barrels of proved oil reserves (a 9% increase). The report, *U.S. Crude Oil and Natural Gas Proved Reserves, 2014*, also indicated an increase of 10% for natural gas proved reserves raising the U.S. total to a record 388.8 trillion cubic feet (Tcf).

At the state level, Texas had the largest increase in proved reserves, 2054 million barrels (60% of the nation's total net increase) in 2014. Most of these new oil reserves were added in the Texas portion of the Permian Basin and the Eagle Ford Shale play. North Dakota had the second-largest increase - a net gain of 362 million barrels - most of which were added in the Bakken tight oil play of the Williston Basin.

Pennsylvania added 10.4 Tcf of natural gas proved reserves (the largest net increase for any state in 2014) driven by continued development of the Marcellus Shale play. Texas added 8 Tcf of natural gas proved reserves, mostly from the Eagle Ford Shale play and natural gas associated with the state's gain in oil reserves in the Permian Basin. Natural gas from shale formations was 51% of the U.S. total of natural gas proved reserves in 2014.

U.S. production of both oil and natural gas increased in 2014. Production of crude oil and lease condensate increased about 17%, while U.S. production of natural gas increased 6%.

### What are Proved Reserves?

*The volume of oil and natural gas geological and engineering data demonstrate, with reasonable certainty, to be recoverable in future years from known reservoirs under existing economic and operating conditions.*

## 42ND ANNUAL CONFERENCE ON EXPLOSIVES & BLASTING TECHNIQUE

January 31 – February 3, 2016  
Las Vegas, Nevada USA

**Paris Las Vegas  
Hotel & Casino**

Blasters Weekend  
January 30 - 31, 2016

**Register Now!**  
[www.isee.org](http://www.isee.org)

For more information:  
International Society of Explosives Engineers  
Tel: (440) 349-4400 [meetings@isee.org](mailto:meetings@isee.org)

# Mark Your Calendar!



## SkyRex Elevators Are Used Worldwide

Oilfield & Water Well Conventional and Reverse Circulation Drill Pipe & Equipment



Also offered with a base.

### SkyRex Elevators

Stock Sizes:

1" thru 24" for casing, column pipe, tubing, and drill pipe.  
\*Load test certificates available.

### PVC Elevators

3/4" thru 16"



We have elevators of all sizes, types, and weights and can build to any special applications.

- Drill Pipe
- Manual Tongs
- RC Swivels
- Bits
- Centrifugal Pumps
- Drill Collars
- Spiders
- Stabilizers
- Bowls
- Crossover Subs

New & Used Equipment Available

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

Family owned & operated since 2000

We Proudly Support Our Troops.



REX MCFADDEN COMPANY  
PH: 806-791-3731 FX: 806-791-3755  
[rex@rexmcfadden.com](mailto:rex@rexmcfadden.com)

SAME-DAY SHIPPING



## Luck, Timing, and Preparation

by Tim Connor



Is there any such thing as luck? The luck of the Irish?

You lucky stiff...I never win anything. Everywhere people seem to have different views of luck or good fortune. I believe in timing, and I also believe in synchronicity - the concept where certain things seem to happen and we can't explain why.

I also believe in preparation, effort, and persistence. Isn't it amazing how many people who work hard, study diligently, and commit to their goals and purpose often have more than their share of good luck? There is a great old saying: "Luck is nothing more than preparation meeting opportunity."

I can't tell you how to prepare, what to

study, how hard to work, or how long it will take. If I could, I wouldn't be sitting at this computer right now. I'd be a well-paid genius cruising the Caribbean on my 75-foot sailboat.

I can tell you, however, most of this doesn't matter. Surprised? Well, I have seen people have good fortune without a lot of work, and I have seen many people toil their entire lives and not once get a single lousy break. I have known PhDs who struggle financially, and I know many high school dropouts who have become millionaires. I also know a couple of lottery winners who bought just one ticket, hit the jackpot, then spent the rest of their lives in misery.

### So what does really matter? Six things, in my opinion:

- 1) Belief in yourself and your goals, purpose, mission, or destiny - for the long haul no matter how many trials you face.
- 2) The courage to weather the lows and failures, and humility and gratitude when you reach the top of the mountain.
- 3) A support system of people who care, believe in you, and are willing to be there when you need them.
- 4) Action and direction - you have to do something - and you have to keep moving in the right direction without worrying about the destination.
- 5) Controlling your thoughts.
- 6) Having positive expectations.

I am sure there are many more, and some of you might take issue with this philosophy. So before you send me an e-mail saying I have gone off the deep end, let me finish with: I believe in education and learning. I believe in hard work. I believe in persistence against all odds, and I believe in faith and hope. I believe God is with me every step of the way. I even believe in a little good luck now and then. I also believe 'chance' favors the fertile mind, active body, and willing spirit. The Quakers have a wonderful saying: "Pray, but move your feet!"

### A few questions:

- Are you waiting for Lady Luck to bless you?
- Do you spend a lot of money on lottery tickets...hoping?
- Do you stick with your goals, purpose, and mission in the face of adversity?
- Are you waiting for God to do it all?

In His service,

Tim

Contact Tim via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

## FILMARK Products, Inc.

PO Box 60249 Midland TX 79711-0249  
432-563-5941 432-563-5942 (fax)

### 5x6 Pump Parts

5" File Hard Liner .....	\$145.00
Liner Packing T.T. Style.....	\$10.00
Piston Rod API-1.....	\$87.86
Rod Packing Set (4 pcs.).....	\$12.00
Standard Valve (Rubber).....	\$65.00
Gravel Valve (Rubber).....	\$69.50
Seats.....	\$45.00
Rubber Valve Inserts.....	\$7.00
Urethane Valve Inserts.....	\$11.00
Valve Spring S.S.....	\$5.25
Valve Cover Gasket.....	\$7.50
2" Swivel Packing.....	\$6.00

### Rod & Piston Specials

5x6 API-1.....	\$155.00
5-1/2x8 API-3.....	\$235.00
5-1/2x10 API-3.....	\$240.00
5x8 API-3.....	\$225.00
5x10 API-3.....	\$230.00



### Pistons & Rubbers

Pistons Complete	Rubber Kits	
4" Series A, API-1.....	\$70.00	\$45.00
4-1/2" Series A, API-1.....	\$72.50	\$48.50
5" Series A, API-1.....	\$75.00	\$50.00
5" Series B, API-3.....	\$133.65	\$65.00
5-1/2" Series B, API-3.....	\$146.55	\$68.00
7-1/2" Series B, API-3.....	\$240.00	\$112.63

### Pump Liners

5x8 Liner.....	\$210.00
5-1/2x8 Liner.....	\$215.00
5x10 Liner.....	\$210.00
5-1/2x10 Liner.....	\$215.00
7-1/2x10 Liner.....	\$440.00

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

**800-635-5229**



Prices Subject To Change Without Notice. PRICES ARE C.O.D.

WorldWide Drilling Resource®

JANUARY 2016

37



## 14.7 PSI

by Bill Corey  
Pentair Water Training Institute

Last month we left off with a question. What would the pressure gauge show the astronaut had read when he gave it to us at Cape Kennedy?

The average weight of the atmosphere at sea level is 14.7 psi. Now you may remember from previous articles, 1 psi is equal to 2.31 FoH (feet of head). So if you take 14.7 psi and multiple it by 2.31 FoH, you would get 33.95 FoH - most would just call it 34 FoH.

Now let's take a vacuum pump, a 40-foot glass tube, the material to hold the glass tube in a vertical position, and a ladder to a freshwater lake at sea level. Here is what we are going to do: set the material to hold the glass tube in the water so we can attach the glass tube about 6 inches under the water. Then place the ladder on it, climb up the ladder, and attach the tube from the vacuum pump to the glass tube. What have we done? We have enclosed the atmosphere in the glass tube.

What happens when you turn the vacuum pump on? It starts to remove the atmosphere from the glass tube. What else happens? The water starts to move up the glass tube. How far will it go? Remember you have a 40-foot glass tube...wait for it...some might say 40 feet, but of course we need to remember it is the atmosphere pushing the water up, not the vacuum pump sucking it up; and since the weight of the atmosphere is only equal to 34 feet, it would be the highest it could go - if, now this is a BIG if, we lived in a perfect world. SURPRISE! We don't.

Water, like all other liquids, has a flash point. Flash point simply means the point at which it will convert from a liquid to a vapor. If the temperature of the water were 70°F (21°C), the flash point would be .4 psi [.4 psi x 2.31 FoH equals about 1 foot]. So what exactly does this mean? At about 34 feet, the water in the glass tube would start to boil. Yes, I said boil.

If you were to raise the temperature of the water to 212°F (100°C), we all know what would happen. So what I'm saying is, you can boil water at any temperature simply by lowering the pressure over the water to the vapor pressure point of the water. Just remember, pump language calls this same point "cavitation". The definition being "the conversion of a liquid to a vapor in a low-pressure area". Instead of using heat to raise the temperature of the water, we lower the pressure over the water to the vapor pressure point of the water.

So what does this 14.7 psi have to do with how the pump works? More next month!

*Bill*

Bill Corey may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)



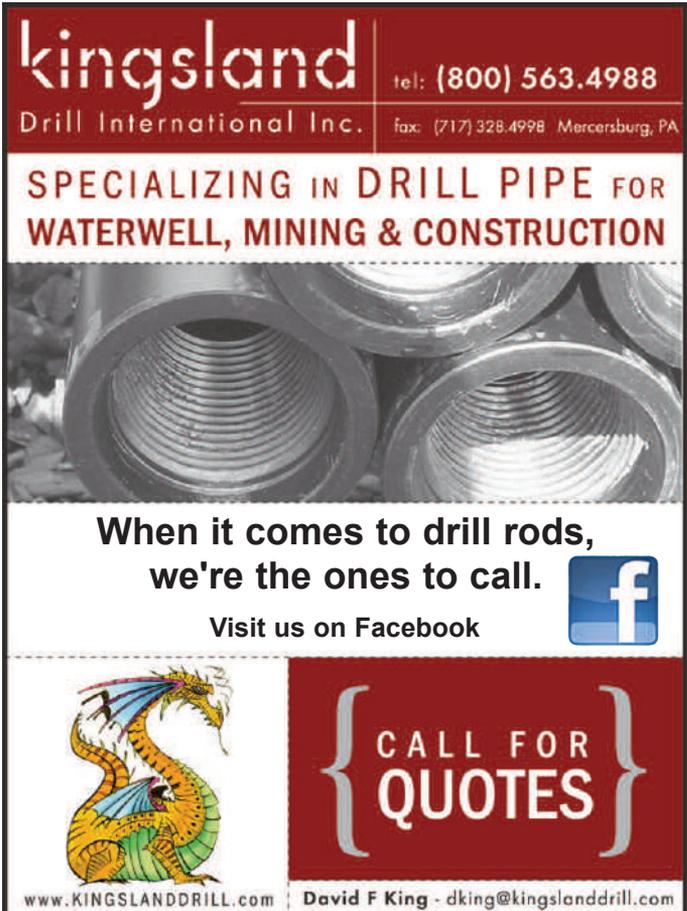
**Mountain States Ground Water Expo**  
February 11 - 12, 2016  
at the Aquarius Casino Resort  
Laughlin, NV

The Mountain States Ground Water Expo is hosted by the Water Well and Ground Water Associations of Arizona, Colorado, Nevada, New Mexico, and Utah.

**GROUNDWATER EXPO**

For hotel reservations call (800) 662-5825 and use code C-MOU16

For more information visit us online:  
[mountainstatesgroundwater.com](http://mountainstatesgroundwater.com)  
E-mail: [info@mountainstatesgroundwater.com](mailto:info@mountainstatesgroundwater.com)  
(480) 609-3999



**kingsland** | tel: (800) 563.4988  
Drill International Inc. | fax: (717) 328.4998 | Mercersburg, PA

**SPECIALIZING IN DRILL PIPE FOR WATERWELL, MINING & CONSTRUCTION**

When it comes to drill rods, we're the ones to call. 

Visit us on Facebook

**{ CALL FOR QUOTES }**

[www.KINGSLANDDRILL.com](http://www.KINGSLANDDRILL.com) | David F King - [dking@kingslanddrill.com](mailto:dking@kingslanddrill.com)

*WWD*'s March issue is just around the corner!

**DEADLINES:**  
Space Reservation: **January 25<sup>th</sup>**  
Display & Classified Ad Copy: **February 1<sup>st</sup>**

# DRILL.



**KS/BIT**  
KNOWLEDGEABLE - DEPENDABLE - GLOBAL



WE SPECIALIZE IN  
RERUNS & RETIPS FOR

- MINING
- OIL WELL
- WATER WELL
- GEOTHERMAL
- ENVIRONMENTAL
- CONSTRUCTION
- EXPLORATION
- AND BLAST HOLE

WE CARRY A COMPLETE LINE OF NEW & SURPLUS BITS,  
HAMMER BITS, HOLE OPENERS, SUBS & NEW DRILL PIPE  
WE BUY USED & NEW SURPLUS BITS

**\*OVER 15,000 DRILL BITS IN STOCK!**

INTERNATIONAL DRILL BIT SUPPLIER.

**WWW.KSBIT.COM**

25 YEARS EXPERIENCE - 24 HOUR SERVICE - WORLD WIDE SALES

CALL TODAY  
OR VISIT US ONLINE

**800.213.1389**

PO BOX 483  
BENTON, IL 62812

SHOP: 618.435.2602

FAX: 618.435.5724

EMAIL: SALES@KSBIT.COM

**SE HABLA  
ESPAÑOL**  
618.438.9279

# Geoprobe®

# 3230DT

more info at [geoprobe.com](http://geoprobe.com)

As a Rig Owner or Operator, what says 'Value' when looking for a new drill rig? Versatility ... Power ... Support ... Brand ... Creature Comforts ... Performance? Check out the 3230DT: We've got'em all covered!

The 3230DT may be the most versatile machine Geoprobe Systems® has ever designed and manufactured. Big statement, but we think we've got the facts and feedback to back that up.

The Geoprobe® 3230DT is a mid-sized tracked drill rig combining advanced direct push functionality with traditional geotechnical auger rig and high-speed rotary drilling capabilities. All of the features of the 3230DT come together to create a rig that's as efficient as what it does. You may not use all of the functions on every project, but if you need to auger to bedrock and then do a confirmation core, it's all there ... in one rig. It transitions from direct push to wet rotary drilling in less than five minutes!

But what good is all that if you can't operate the machine? No problem here. This rig is "simple to run" and "very easy to learn," according to Buford Collier, Senior Project Manager for C&S Consulting in Kilgore, TX. He invited a consultant friend over to a jobsite while he was doing some geotechnical drilling. "This guy had never drilled a day in his life," he said. "After I spent about 15 minutes telling him about the controls, he worked with the machine nearly two hours as I called out instructions while I worked with the tooling. It was like a 'play day' for us! It's fun to run."

Fred McKay, Drilling Division Manager for EnviroTek in Tampa, FL, reports that they've increased their capabilities by five times. "We've been going through a formation that's high in clay, phosphates, and limestone. It's compressed and it's dense," Fred said, "But our 3230DT is going right through it." His field team is enjoying the rig. "We got up-to-speed on it really fast; it's easy to use."

"This is a great rig, and we're really pleased," Buford added, "but no one can beat your (Geoprobe®) support! I knew that going in to this machine purchase. I've run other drill rigs in my life, and no one treats us as good as you guys!"

Interested in a demonstration of the 3230DT? Call us today and we'll start planning a road trip!



A new Geoprobe® 3230DT direct drives 6.0-in. casing with a removable solid point prior to installing a 2.0-in. well. During the well installation process, the operator will use numerous features of the rig including the GH70 percussion hammer, the swing-arm control panel, and hydraulic clamp with 80,000 lbf pull force.

**DP Tooling & Consumables Ship Free**  
Minimum purchase required. 48 contiguous US states only. Call us for details!

Let **Geoprobe®**  
*put you in control ...*

**3230DT**



A mid-sized tracked drill rig combining advanced direct push functionality with traditional geotechnical auger rig and high-speed rotary drilling capabilities.

**Direct Push Solid.  
Rotary Strong.**



- ✓ Direct Push
- ✓ Hollow Stem Augering
- ✓ Mud Rotary
- ✓ Air Rotary
- ✓ Down Hole Hammer
- ✓ SPT
- ✓ Rock Coring

From the patented Geoprobe® CB6, 4-Speed Combo Head with side-shifting capabilities, to the Drill Mast Outriggers, to the Dual Winch with Telescoping Mast to trip 20-ft. tool strings, the POWER and SPEED of the New 3230DT Combo Rig will grab your attention. Call us for a free brochure.

Machines and Tools for the Technical Driller  
*WorldWide Drilling Resource®*



1-800-436-7762  
[www.geoprobe.com](http://www.geoprobe.com)

# DRILLING IN ALL DIRECTIONS...

*that's our angle!*



HORIZONTAL



VERTICAL



ANGLED

Center Rock's Low Profile (LP) Canister Drills are the best choice for your large-diameter rock drilling requirements.

- ◆ Traditional LP, 24" - 144" (calyx basket or reverse circulation)
- ◆ Mining LP, 20" - 120"
- ◆ HDD LP Reamer, 16" - 60"
- ◆ All LP Drills include our trained technicians to assist with the startup and continual 24/7 customer service support.

For details call today!



**Drill faster.  
Run harder.  
Work smarter.**

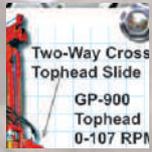


Phone 814-267-7100  
Toll Free 888-267-9004  
[CENTERROCK.COM](http://CENTERROCK.COM)

breakthrough innovation and technology • superior products and services • outstanding technical support • genuine drilling expertise

# Time for a Little Fun!

Can you identify which ads in this issue these two photos came from?



**Congratulations to:**  
**Joe Veches**  
**Northwest Pipe Fittings**  
**Billings, MT**  
**Winner for December!**

**Win a prize! Send your completed puzzle to:**  
**WWD R PO Box 660**  
**Bonifay, FL 32425**  
**or fax to: 850-547-0329**

**December Puzzle Solution:**  
**Sonic Drill Corporation**  
**Mudslayer Mfg.**



# CGA 2015 DEALMAKERS

## SEMCO, Inc.



*Buddy with SEMCO, Inc. of Lamar, Colorado, stands with Gary from Fresno Truck Center of Fresno, California, who delivered the new pump hoist to Shelley and Jesse of Well Rehabilitation Services, Inc. of Bakersfield, California.*

Send your deals to:  
[promotions@worldwidedrillingresource.com](mailto:promotions@worldwidedrillingresource.com)

## Pulstar Mfg. / Preferred Pump

*Bob and Shirley with Cal Gro Pump Service, Inc. of Visalia, California, celebrate the purchase of a new pump hoist from Albin of Pulstar Mfg./Preferred Pump & Equipment of Dodge, Nebraska.*



# The Choice of Drilling Professionals

PARTS AND SERVICE



Oil Filters • Air Hoses • Rebuilt & Reconditioned Parts  
 Specialists in Parts, Repairs, and Complete Rig Refurbishments

Roanoke, VA  
 Phone: 800-462-9340 • 540-982-8001  
 Fax: 540-342-0546 • [nolanddrill@noland.com](mailto:nolanddrill@noland.com)



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



# Blasting a Bridge to the Bottom of a Bay Takes Skill

*Adapted from a Case Study  
by Sandvik Construction*



Eighty years after piers were constructed in San Francisco Bay to hold up the eastern span of the San Francisco-Oakland Bay Bridge, a specialized contractor is blasting its sturdy footings. Demolishing the reinforced concrete piers is the final step in the removal of the nearly two-mile long span. To accomplish this complex task in an environmentally friendly way, a Ranger DX800 drill rig from Sandvik Construction has been working on-site.

The San Francisco-Oakland Bay Bridge has already been replaced by an adjacent \$6.4 billion structure which claims the title of world's widest bridge. While the new bridge is impressive, so is the demolition job being undertaken by Florida contractor Contract Drilling & Blasting LLC. The company's challenging task is to make a pier disappear cleanly beneath the bay bottom without disturbing the bay's avian and marine life.

The contractor is tasked with drilling 159 holes in Pier E3, chosen to be the demonstration pier for explosives demolition. Cartridge charges were placed in holes at several levels and the pier imploded without negative impacts to marine life or environment. Environmental concerns were magnified because this was California's first major blasting demolition in water. This means the dust and slurry created by concrete dust from the demolition could not be allowed to degrade water quality.

To deal with this potential issue, a system of garbage cans were placed around the drill, and all drilling residue and cuttings were collected and placed in a covered container exclusive for aggregates for hauling to shore. It was essential no leaks or blown hoses occur as this could lead to contamination of the water.

The drilled pier is 80 feet wide by 130 feet long and stretches downward 289 feet from its cap, with the last 180 feet drilled into the muddy bottom of the bay. Beneath the pier's cap is a supporting grid honeycombed with voids. Horizontal cross-sections periodically intersect with three-foot-thick reinforced concrete walls. Holes were drilled into each of the three-foot interior walls as well as in four-foot-thick exterior walls. The holes were drilled in two depths - 64 and 86 feet - in a pattern designed to capture the exploded and inward-collapsing material at the bottom of the pier's footprint. More than 558 individual electronic detonations were initiated on the multiple decks.

Blasting specialist for Contract Drilling & Blasting Ken Tully, was responsible for designing the blast, overseeing the drill operations, and conducting the blasting operations. He specifically chose a Sandvik Ranger DX800 drill rig for the challenging job. "I wanted this machine. I have used similar Sandvik equipment on other projects and was very satisfied. The accuracy and trueness of the holes was



fantastic." Tully has worked around Sandvik drilling rigs for 20 years and said he has always been impressed with their productivity. He believes several features on the Ranger DX800 were critical on drilling Pier E3. One was the rig's reach, which in the limited pier area can be very difficult and sometimes up to 2-3 feet. Another was its ability to revolve its superstructure up to 180 degrees and drill multiple holes from the same location.

The other critical feature was Sandvik's TIM5300 system, which measures depth and inclination to a high degree of accuracy. The enhanced drilling accuracy of the TIM5300 was needed because the pier's three-foot-thick walls were poured in place, sometimes in multiple pours, and were not expected to always run true. Guided by the system, the Ranger DX800 proved productive despite the irregular material and untrue structuring. "There were lots of surprises and adjustments to make, but we made them successfully," said Tully.

Save the date and make your plans now to attend!  
2016 Pacific Northwest Ground Water Exposition  
March 18-19 • Portland, Oregon  
at the Red Lion Hotel on the River

Pacific Northwest  
Ground Water Association

<http://www.pnwgwa.org> ~ 800.551.7379

# Industrial Ethernet Connectivity for the Oil and Gas Industry

*Adapted from a News Release by Power PR*

To protect infrastructures against disasters, promote worker safety, and facilitate automated functions ranging from drilling to wellhead operation and transport pipelines, oil and gas operators are increasingly turning to fiber optic cable suppliers for end-to-end communications and control solutions. Many solutions include cable and connectors to ensure survival of fiber-based DCS/PLC (distributed control system/programmable logic controller) automation/control architectures for onshore and offshore oil and gas operations, even in the harshest environments.

As fiber optic cable emerges as the medium of choice in many industrial arenas, the DIN rail enclosure plays an increasingly important role. Mounted to a standard DIN rail - the metal rail used to mount various electrical components (e.g., terminal blocks, motor starters, circuit breakers) in a control cabinet - a DIN rail enclosure provides a central location where external and internal wiring can be connected quickly and efficiently.

"This type of enclosure is ideal for production applications, the industrial automation side of businesses," said Stephen Porach, PE, registered communications distribution designer, Sr. manager of business development, enterprise solutions for Optical Cable Corporation (OCC) in Roanoke, Virginia. "Today, the oil and gas industry is turning from highly proprietary communications systems to the more enterprise-wide prevalent Ethernet communications protocol via fiber optical cable. The appropriate DIN rail enclosure provides an optimal connection for fiber cable that can be terminated in a fixed position."

Porach explained, the Ethernet protocol allows products from various manufacturers to talk to one another, making the system less proprietary and costly. Also, fiber cable won't cause an electrical spark, another advantage making it ideal for many oil and gas applications, particularly in the field.

According to Porach, OCC has developed a new, ruggedized line of DIN rail enclosures to provide highly secure terminations within a wide variety of industrial applications even in the most adverse environmental conditions. Available for both fiber optic and copper applications,

this type of enclosure is very easy to install and provides very simple patching for the connection of all those automation components in a patch field for the industrial automation environment.

This enclosure can also be ordered as a complete assembly, including connectors and fiber optic cables which are preterminated at the factory. These assemblies are built according to specifications that will meet the environmental demands of any application - whether noise from electric motors, highly flammable conditions, or extreme temperatures - thereby providing a highly reliable, integrated DIN rail solution.

OCC's solutions include ruggedized cable and connectors to ensure survival of the fiber-based DCS/PLC automation/control architectures for onshore and offshore oil and gas operations, even in the harshest environments.

Companies in the oil and gas industry are placing this enclosure into a cabinet located in the automated drill cabin on their rigs, where one person monitors drilling controls, automated pipe handling controls, computer hardware, and data processing systems in a single room on the rig.



**E&M Supply Group**

**10 ACRES OF:**  
**Drill Pipe**  
**Drill Collars**  
**Stock for Tooling**  
**Tubular Machine Shop**

**IN STOCK:**  
6 5/8" OD X 5" ID DRILL PIPE  
5 7/8" OD X 5" ID DRILL PIPE  
10" OD X 5 1/4" ID COLLARS  
11" OD X 5 1/4" ID COLLARS

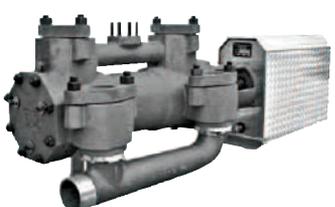
**337.332.0239**  
**DRILLPIPESUPPLY.COM**



*~ The Centerline 7 1/2" x 10" hydraulic drive mono mud pump ~*

*~ compact ~ fits on top or under deck  
~ pumps the rated flow of a 5" x 6"  
@ over twice the rated pressure  
~ weighs 650 lbs, 1615 lbs less!*

*~ Centerline mud pumps are getting the job done from Canada to Australia, China to Peru ~*



*U.S. Patent #6,769,884 and others pending*

*Monopump models rated: 180 gpm  
Duplex models rated: 300 gpm  
Triplex models rated: 450 gpm  
500 or 800 psi models available aluminum or iron.*

*Centerline Manufacturing is proud to be your complete stocking source for American Manufacturing mud pump parts!!*

**Centerline Manufacturing Co.**

903-725-6978 903-725-3647 fax  
~ Mud pumps for the 21st century ~  
www.centerlinemanufacturing.com

# Need a Bit in a Hurry?



Customer Service is  **PALMER BIT CO.**



A lot of companies talk about customer service. Palmer Bit Co. delivers on the promise of customer service through 24-hour phone service, expedited production and shipping, and expert problem solving. Palmer Bit carries a large inventory to meet quick turnaround times, because we understand time spent waiting for a bit, is lost revenue for the driller.

**Palmer Bit Company**

800-421-2487 • [sales@palmerbit.com](mailto:sales@palmerbit.com)

**[www.palmerbit.com](http://www.palmerbit.com)**

## Frequently-Used Geological Terms Part 46

Glossary Adapted from the Dictionary of Geological Terms

### M

**Marcasite** - A common pale yellow or gray orthorhombic mineral,  $FeS_2$ , dimorphous with pyrite. It is common as nodules and concretions in sedimentary rocks.

**Marginal Fissure** - A fracture, bordering an igneous intrusion, which has become filled with magma.

**Marlstone** - 1. A hardened rock of about the same composition as marl, i.e. an earthy or impure clay-containing limestone. 2. A term originally applied to slightly magnesian calcareous mudstones or muddy limestones in the Green River Formation of the Uinta Basin, Utah, but later applied to associated rocks with a variety of lithologic characters. Abandonment of the term as used in the Uinta Basin has been recommended.

**Massif** - 1. A massive topographic and structural feature, especially in an orogenic belt, commonly formed of rocks more rigid than those of its surroundings. These rocks may be protruding bodies of basement rocks, consolidated during earlier orogenies, or younger plutonic bodies. 2. A mountainous mass or group of connected heights, whether isolated or forming a part of a larger mountain system.

**Mass Movement** - Unit downslope movement of a portion of the land surface, as in creep, landslide, or slip.

**Matrix** - 1. The groundmass of an igneous rock. 2. The finer-grained material enclosing larger grains in a sediment or sedimentary rock. 3. The rock or sediment in which a fossil is embedded. 4. A gemstone cut from a mineral and the surrounding rock material. 5. A local term for the phosphate-bearing gravel in the land-pebble deposits of Florida.

**Medical Geology** - The application of geology to medical and health problems, involving subjects such as the occurrence of toxic elements in unusual quantities in parts of the earth's crust, the distribution of trace elements as related to nutrition, or the geographic patterns of disease.

**Mediterranean Suite** - A major group of igneous rocks, characterized by high potassium content. This suite was also named due to the predominance of potassium-rich lavas around the Mediterranean Sea.



Image of a landslide area, also known as a mass movement. Photo by Moralist.

# FLOMATIC® VALVE

High Quality Valves Built to Last...

LOW-LEAD

**New VFD Enviro-Check® Valve with a 5-year warranty**  
**Now Available 1" - 4" Patented VFD Check Valves**  
*(Also available in Ductile Iron and Stainless Steel 1" thru 8")*  
**America's First Choice**

New patented submersible pump check valve for use on variable flow demand (VFD) systems and applications. Standard check valves will "chatter" and be noisy when the system goes to low flow, causing eventual failure. The unique Model 80E VFD and 100E VFD valves are designed to minimize flow losses and hydraulic shocks in the pumping system.

Flomatic's valves are used by more pump manufacturers than any other valve on the market. This new, exclusive poppet system ensures that the valve smoothly and automatically adjusts to flow changes and is noiseless at even very low flows. Call for complete information at 800-833-2040 or visit us on the web at [www.flomatic.com](http://www.flomatic.com)

Composite Poppet

Stainless Steel Poppet

**FLOMATIC® VALVES**  
High Quality Valves Built To Last...

**Flomatic Corporation**  
 15 Pruyn's Island Drive  
 Glens Falls, NY 12801  
 Phone: (800) 833-2040 • (518) 761-9797  
 Fax: (518) 761-9798 • [www.flomatic.com](http://www.flomatic.com)  
 Email: [flomatic@flomatic.com](mailto:flomatic@flomatic.com)

Look for more terms next month!





**The  
“Idiots”  
Corner**  
by “Billy Bob  
Smith”

**This months topic:  
Why me - why now?**

Feel like a victim? Life picking on you? Nothing ever seems to go right or how you want or planned? Want to make God laugh? Tell Him your plans.

I'll bet you have never heard someone who won the lottery scream: “Why me?”

I'll wager the last words someone says before they pass on is never: “Why me? Why now?”

Last week, I overheard a conversation between two southerners and it went kinda like this:

“I can't believe he would say that to me. I mean we just celebrated our first anniversary.”

“What did he say?”

“I'm not sure we should have gotten married. We should have waited a few more years.”

“Did you see it coming?”

“No.”

“Well, maybe you should have paid more attention to his behavior before you said yes.”

You get the picture. Stuff happens none of us want or expect. Welcome to the Life Happens Club, folks.

How about one more quick observation? On a flight last week, the plane was delayed due to a thunderstorm. The dude sitting next to me kept complaining about how he was going to miss his meeting. I couldn't resist, so I asked him, “Do you think you will miss your meeting if the plane crashes due to trying to fly in the middle of this storm?” He just looked at me as if I was nuts. Trust me, he was the crazy one.

# SENTRY I OPEN-AIR SYSTEM

Protecting Your Family



High-Flow Systems



Low-Yield Wells



Methane



Hydrogen Sulfide  
(Rotten Egg Odor)



**THE  
G140  
SERIES**



**BETTER WATER INDUSTRIES INC.**

209 N Tyler St, Tyler, MN 56178

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

Phone (507)247-5929



*“Nothing can stop the man with the right mental attitude from achieving his goal; nothing on earth can help the man with the wrong mental attitude.”*  
~Thomas Jefferson

Deal with it. Handle it. Get over it.

*Billy Bob*

Billy Bob can be contacted via  
e-mail to [michele@  
worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

**The “Mud” Line**

General Pump's mud line of plunger pumps are specifically designed for handling a variety of drilling fluids. The line includes four different power frames covering a wide range of flow rates up to 105 GPM and pressures up to 1160 PSI. Gearboxes and SAE hydraulic drive are available options for most models.

*We must accept finite disappointment,  
but never lose infinite hope.*

*Martin Luther King, Jr.*

*Only those who will risk going too  
far can possibly find out how far one  
can go.*

*T.S. Eliot*

## Construction Machinery and Equipment Import-Export Report

Adapted from Information by Samoter

Foreign trade in construction machinery and equipment held up in the first six months of 2015, confirming a positive balance of trade for Italian industry, posting substantial stability (+0.1%) compared to the same period in the previous year.

Exports of earth-moving machinery and equipment, road machinery, concrete plant, tower cranes, aggregate preparation machinery, and drilling machinery in the period January-June was up by 5.9% compared to the first six months of 2014. Sales to Russia fell vertically (-63.3%), following the Ukraine crisis sanctions, as well as the devaluation of the rouble.

These are the initial data released by the SaMoTer-Verona Observatory on the construction equipment market developed in collaboration with Prometeia. The Bologna-based company is a leader in consulting services, software, and economic research with more than 500 professionals in five countries worldwide. In September, a three-year agreement with Veronafiore was signed to provide stakeholders (exhibitors, operators, visitors, etc.) in SaMoTer, the landmark international trade fair for the sector, with tools analyzing current and future scenarios in the sector.

The Observatory - in cooperation with UNACEA (Italian construction equipment association) - assures SaMoTer even more status as a landmark for market information and market intelligence.

The agreement between Veronafiore-SaMoTer and Prometeia will be presented in detail and will provide information on three levels: a foreign trade monitor with monthly import-export updates; building industry monitor with quarterly updates on construction market trends in Italy; as well as an annual update report on the world market for earth-moving machinery.

Trends on world markets in the six sectors covered by SaMoTer are rather different. In particular, exports of earth-moving machinery and equipment increased between January and June by 8.3% over the same period in 2014, while imports leapt by 38.1%.

There was a two-figure performance for exports of road-building machinery, up by 14.7%, while imports grew 11.2%. There was a slight downturn for concrete machinery: export sales fell 3.3%; and imports performed even worse, down by 24.4% in the period January-June 2015.

Tower cranes posted a positive result with an increase of 28% in foreign sales and imports posted a similar trend, up 250.6%.

On the other hand, exports of aggregate preparation machinery dropped 2.1%, while imports increased by 26%. Drilling machinery saw international sales grow by 4.9%, while imports fell 42.3% in the first six months of 2015 compared to the same period in 2014.

Western Europe is still one of the key markets for construction machinery in some of the six sectors covered by SaMoTer, up by 6.9% in the first six months of 2015 compared to the same period in 2014. Good improvements in sales were seen in the Middle East which increased 13.8%, Asia by 39.6%, North America 31.5%, and Africa with a 7.4% growth, confirming its position as the second regional area for Italian exports in value terms. There was also good growth in Oceania, with a 9.2% increase.

Exports in Turkey and Central-Eastern Europe were stable in the first six months of 2015 compared to the same period in 2014, as was also the case for Central and Southern America at 0.9%.

Imports between January and June from Western Europe rose by 30.2%, by 36.6% from Asia, 10.2% North America, 84.9% from Central-Eastern Europe and Turkey, while imports from other countries in Europe, Central-South America, and Oceania remained minor. Imports from Africa dropped 44.5%.



### WELL-VU FISHEYE CAMERAS

#### THE NEW STANDARD IN DOWN HOLE VIEWING

Camera has 180° lens which shows twice as much detail as a standard lens. This allows for viewing the sidewalls as well as down the well all at the same time. This camera can be attached to almost all previous models.

#### FISHEYE CAMERA SYSTEMS

Model #: WV-300FE, WV-C500FE, 700FE, 1000FE  
(Also available in motorized)

Standard Down View	Fish Eye View
	

# Well-vu

For more information, contact your favorite wholesale distributor or go to our web site to find a distributor near you at: [www.wellvu.com](http://www.wellvu.com) or call 406-436-2087

# A SURPRISE VISIT TO MOBILE DRILL INTERNATIONAL

by Mary Lynn Mixson, Representative

WorldWide Drilling Resource®

The *WDR* Team set out on a trek across several states in September, pulling a Forest River Work and Play with a Chevy Suburban, headed to the National Drilling Association Convention in Ellicott City, Maryland, then later on to the International Construction and Utility Equipment Exposition in Louisville, Kentucky. Managing Publisher Ronnie Jones and I were determined to stop along the way and visit with prospective advertisers, as well as long-time friends and advertisers.

We pulled into the Heartland Resort Campground in Greenfield, Indiana, set up the recreational vehicle, and took off for Mobile Drill International (MDI), which is located in Indianapolis, Indiana. This was a surprise visit, but we were greeted with welcoming smiles by the busy Mobile Drill crew. Sales Representative Rick Young met us at the door, and after a visit with President Tim Sabo, we began our tour of the 65,000-square-foot facility. Mobile Drill is an industrial machinery and equipment manufacturing company, which employs an average of 33 people. There was plenty to see! We were able to observe technicians refurbish older equipment, design new innovations, as well as see the wide variety of products the company keeps in stock. "It has been an exciting year as



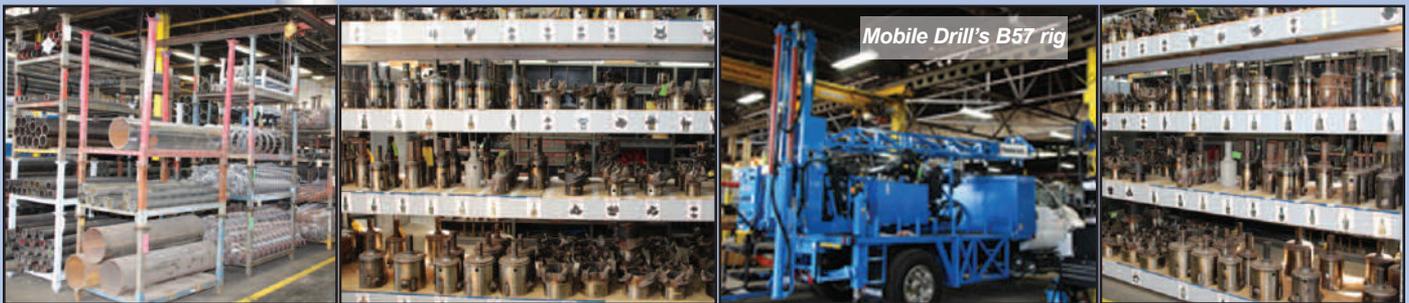
Sales Representatives Rick Young and John Walker, President Tim Sabo, as well as Customer Service Representative Steve Morris, Sales Representative Bret Myers, and Sales and Marketing Representative and Manufacturing Administrator Ann Hollback. *WDR* photos.



Ronnie Jones and Rick Young

we have launched new products - such as the B57 and B42 - along with introducing our rental and customer rewards programs," stated Sabo.

The company began its history with the ability to problem solve, which was evident when founder of MDI, George Dickinson bought a Turner post-hole drill on a Jeep, made modifications, and continued on to drill to depths of 50 to 60 feet. It wasn't long before George had enough orders for his innovative design to establish the company. (For more information on the fascinating history of the company, please reference *Smooth Operator* by Amy White in *WDR's* October 2015 issue.) The company has been focusing on establishing lifelong commitments in relationships, as well as services to its customers since 1947. MDI continues to look forward to doing business in the same manner for years to come. The warehouse is stocked with plenty of replacement parts for multipurpose drills, as well as new and refurbished rigs available for rent.



Ronnie and I were invited to the company picnic the next day, and we arrived in just enough time to see friendly competition between the participants and the end-of-the-game trophy recipients. Here's a quick look at the action from the company picnic and a recap of the event winners:



**Thanks for the Hospitality, Mobile Drill International!**





# Oil/Water Exploration

by Harold White

When you're drilling a well on a mountain high above the land around the base of the mountain, the job seems futile, hopeless, impossible to get a well in a short drill like 500 feet. It looks like we would have to drill to the valley floor, plus the average well depth in the valley or more.

When I was asked to locate a well up there, I met with the man near the top of the mountain. We just stood there for awhile. What a view it was looking out over the town, the Willamette River, and forested mountain. I asked where he wanted to have a well. He said it was my job to find the spot, so I asked where his property boundaries were.

He indicated there was another 600 feet to the top boundary, over one way to a big tree, then the other way to a big rock with a tree on top, then down across a road and way out there. He told me they were going to sell the top logged-off area and wanted to find a drill site as close to the top as possible.

So, while standing there, I told him over to the south about 400 feet and uphill about 100 feet is where I would drill the first well. The second one was the other way, down by a rock. He wanted to know how I knew when I hadn't even been over there. He wanted to walk to the spot, so we did. He asked if I still believed it was the spot. I said yes, and he said to get the drill and get started. I drilled the well in the next few days. It was about 100 feet deep and produced 90 gallons per minute. We also drilled the second well, and it was about 140 feet deep and made 15 gallons per minute.

There are a lot of dry wells in the Willamette Valley over 400 feet deep. With the Willamette River, the McKenzie River, and all the tributaries that make them, a person would think it would be hard to get a dry well in the valley. Drilling is like that. If you miss the underground creek, you have a dry well. This seems to hold true for any fluid - oil and gas included.

*The statements and comments in this article are based on information and references believed to be true and factual. If you have any questions or comments, please forward them to me in care of **WWR**.*

*Harold*

Harold White may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

**flowcenter**  
PRODUCTS, INC.

2065 S. Nucor Rd.  
Crawfordsville, IN  
47933

Flowcenter loop pump modules are available for both residential and commercial ground-loop heating and cooling systems.

Compatible with these pumps:  
**Grundfos Wilo**

Flowcenters can be configured with 1, 2, 3, or 4 pump units to match different load requirements.

Products include:  
Flowcenters • Geothermal Closed-Loop Fittings • Replacement Pumps • Hose Kits and Accessories • ECM Variable Speed Pumps

**Call us today to hear about our new FCP Titan Pump.**

Phone: (866) 364-9460  
Fax: (765) 364-9462  
[www.flowcenterproducts.com](http://www.flowcenterproducts.com)



**SERVING THE WATER WELL INDUSTRY**

257 Caroline Street  
Punxsutawney, PA 15767  
800-927-0560 • 814-427-2555  
Fax: 814-427-5164

**Need something special?**  
Talk to us - we'll make it happen faster than you think.

**STAR IRON WORKS**  
Serving the Drilling Industry

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



Connecting Global Competence



Messe München



## The world speaks bauma. Join the conversation!

Experience trends, innovations and enthusiasm up close at the industry's most important international exhibition.

This is where the world comes together, so you can't miss out! Prepare your business success and look forward to:

- ▶ 3,400 exhibitors
- ▶ More than half a million visitors
- ▶ 605,000 m<sup>2</sup> of space

Get your ticket now:

[www.bauma.de/tickets/en](http://www.bauma.de/tickets/en)

31st Edition of the World's Leading Trade Fair for Construction Machinery, Building Material Machines, Mining Machines, Construction Vehicles and Construction Equipment

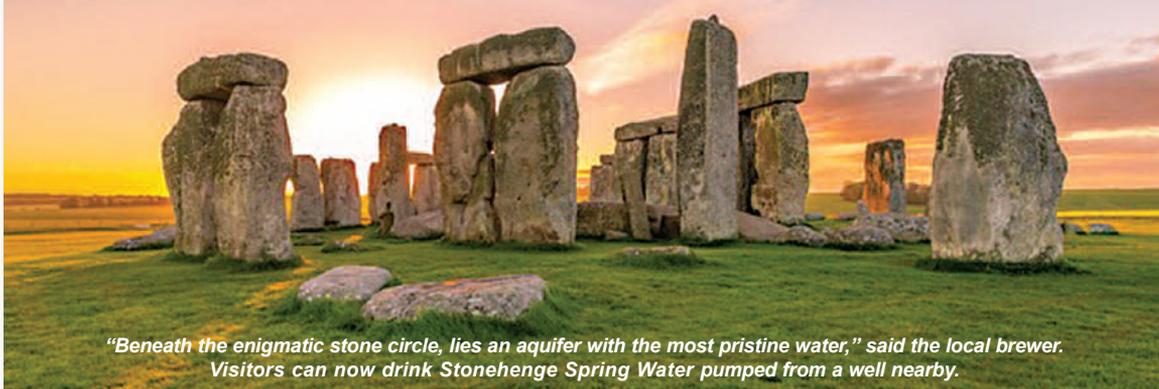
[www.bauma.de](http://www.bauma.de)



Contact: Trade Show Services GACC New York, Inc.  
thoehn@munich-tradefairs.com | Tel. 646 437 1014

THE HEARTBEAT OF OUR INDUSTRY  
**bauma 2016**

April 11-17, Munich



*"Beneath the enigmatic stone circle, lies an aquifer with the most pristine water," said the local brewer. Visitors can now drink Stonehenge Spring Water pumped from a well nearby.*

## A Stone's Throw from Stonehenge

*Compiled by Amy White, Associate Editor, WorldWide Drilling Resource®*

In 1993, Stig and Anna Maria Andersen moved from Denmark to England's Salisbury Plain after buying a brewing business on the bank of the River Avon, just a short distance from the World Heritage Site, Stonehenge.

For at least a decade, they bought and paid for high quantities of water required to keep the ale flowing. Over the years, the Andersens considered drilling their own well to supply the water so critical to their company's success. Finally, after giving it much time and thought, the family decided drilling a well on their property was the best choice moving forward.

The contractor hired to drill the well called in a 90-year-old water dowser. Using his divining tool, he marked the spot he felt was best. According to the Andersens, he chose the right spot.

A 53-foot-deep well was drilled in the family's garden to pump water from the Salisbury Plain Aquifer, the same aquifer below Stonehenge. Stig said the water was so pure and fresh he wondered about the possibility of bottling it from the source to share with visitors.

The Andersens began the process of getting through the necessary red tape to establish a water bottling company in addition to their brewery. This year, they were finally able to start selling the local water, and business has been good with roughly 1200 bottles of Stonehenge Spring Water being sold to tourists at the Visitor Centre every week.

Recent research suggests this source of water could have been the reason people in ancient times came to visit Stonehenge.



## Armstrong Machine Co. Inc.

201 SW 7th Street • Pochontas, IA 50574 USA  
 712-335-4131 ~ 24 Hours 7 Days a Week • Fax: 712-335-4565  
 Watts: 800-831-4527 USA & Canada (8AM to 4PM Monday-Friday)  
 See our Web Page: [www.armstrongmachine.com](http://www.armstrongmachine.com)  
 Email Address: [amci@armstrongmachine.com](mailto:amci@armstrongmachine.com)

### Rebuilt Mud Pumps

4-1/2x6 Gaso Duplex.....CALL FOR PRICE  
 4-1/2x6 Oilwell Duplex.....CALL FOR PRICE  
 Gardner Denver 4-1/2x8 PA-8 Triplex..... CALL FOR PRICE  
 Gardner Denver 5x6 Duplex.....CALL FOR PRICE  
 Gardner Denver 5x10 Duplex.....CALL FOR PRICE  
 Gaso 5x10 Duplex.....CALL FOR PRICE

**WE HAVE OVER 300 PUMPS IN STOCK**

*We Have a Variety of Pumps and Power Units in Stock.*

### Brand New Pumps In Stock

Gardner Denver 4x5 TEE Triplex.....CALL FOR PRICE  
 Gardner Denver 5-1/2x5 TEE Triplex.....CALL FOR PRICE  
 Gardner Denver 4x5 or 4-1/2x5 Duplex.....CALL FOR PRICE  
 Gardner Denver 5x6 Duplex.....CALL FOR PRICE  
 Gardner Denver 5x6 Air Drive Duplex.....CALL FOR PRICE  
 Gardner Denver 5x8 Duplex.....CALL FOR PRICE  
 Gardner Denver 5-1/2x8 Duplex.....CALL FOR PRICE  
 Gardner Denver 7-1/2x8 Duplex.....CALL FOR PRICE  
 Gardner Denver 7-1/2x10 Duplex.....CALL FOR PRICE  
 Gardner Denver 5-1/2x5 THE Triplex.....CALL FOR PRICE  
 Gardner Denver 5x8 PAH Triplex.....CALL FOR PRICE  
 Hydraulic Grout Pump 5".....\$4400.00  
 Hydraulic Grout Pump 6".....\$4900.00  
 Hydraulic Grout Pump 7-1/2".....\$10,500.00

*We Pay Cash for Surplus Mud Pumps.  
 Special or Obsolete Parts Made to Order.*

*We Have a Variety of Brands of  
 Mud Pump Parts in Stock.*

### Nitrate Coated Premium Liner

5x6 Gardner Denver.....\$176.00  
 5x8 & 5x10 Gardner Denver.....\$200.00  
 5-1/2x8 & 5-1/2x10 Gardner Denver..\$200.00  
 7-1/2x8 & 7-1/2x10 Gardner Denver..\$370.00

### Rods Heat-Treated & Chromed

5x6 Gardner Denver.....\$103.00  
 5x8 & 5-1/2x8 Gardner Denver.....\$121.00  
 5x10 & 5-1/2x10 Gardner Denver.....\$121.00  
 7-1/2x8 Gardner Denver.....\$121.00  
 7-1/2x10 Gardner Denver.....\$121.00



**Grout Pump**



**BLUE DEMON  
COMPANY, INC.**

**NEW**

A completely field replaceable PDC drilling system available in 4 wing from 3 7/8" to 6 3/4" diameter in 1/8" increments and in 3 wing from 6 3/4" to 24".

We also have 5 and 6 blade standard PDC bits. Call for price and availability.



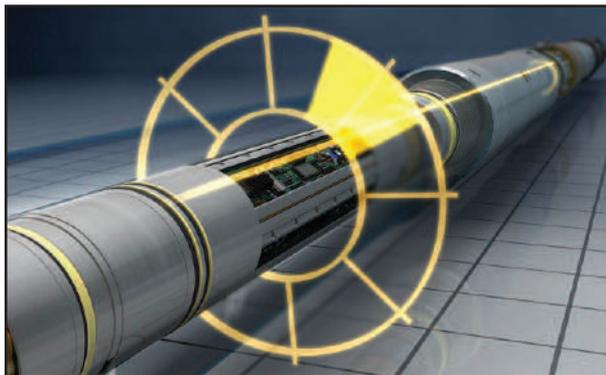
Contact us at 800-282-6760  
or sales@bluedemon.com.

## Going Farther, Faster with New HDD System

*Adapted from a Press Release by Weatherford International*

Weatherford International recently unveiled its Revolution® RSS (rotary-steerable system). This system gives operators the ability to minimize risks, reduce time while drilling, and allows them to arrive at the production stage quickly, avoiding future intervention. Its point-the-bit technology delivers clean, accurately placed, and completion-ready wellbores. With advanced sensors and telemetry, the system gives operators a reliable method for drilling from vertical to horizontal in a single run.

"As the ratio of directionally drilled wells to vertically placed wells increases, access to harder to reach reserves calls for an enhanced rate of penetration and improved borehole quality. Revolution RSS allows single-run drilling of curve and lateral sections, as well as high-pressure, high-temperature (HPHT) and high-dogleg applications. This enables operators to make better petrophysical measurements while maximizing borehole exposure to the reservoir delivering superior productivity indexes. In the last year and a half, Revolution RSS has drilled 284 vertical-curve-lateral wells in a single run, totaling 2.4 million feet," said Etienne Roux, vice president of drilling services at Weatherford.



Weatherford was one of the first service providers to offer a rotary-steerable system for HPHT environments. The system allows operators to drill in HPHT zones with temperatures exceeding 300°F (149°C), allowing operators to produce wells in the increasingly challenging environments with precise drilling control in long laterals, high-angle curves, and parallel vertical sections in a single run.

The point-the-bit design and real-time geological control of the system enables operators to drill in a variety of environments, including unconventional fields, HPHT environments, deep water fields, damaged and underbalanced formations, and brown fields.

The Revolution RSS has completed several successful drilling projects in the Eagle Ford Shale in Texas. Recently, in an on-shore horizontal well, this system was used to drill a well through a challenging, dense limestone and sandstone formation to a total depth of 16,559 feet and temperatures up to 328°F (164°C). The average rate of penetration was 75% faster than conventional steerable motor assemblies.

On a separate project with six wells in the Eagle Ford, this system achieved an average of 180 feet per hour (ft/hr) on six wells and a record of 227 ft/hr on one well, reducing the drilling cycle by two weeks and saving the operator more than \$1 million in operational costs.

How does it work? The antirotation levers hold the bias unit in place as the drill string rotates to improve steering control and hole cleaning. A stabilizer acts as the hinge point to control deflection and minimize vibration. By keeping the bit aligned with the borehole, the Revolution system creates smooth wellbores and extends bit life. Advanced sensors measure inclination, azimuthal gamma ray, whirl, stick-slip, vibration, and other drilling parameters for early detection of changes in the formation, borehole, and bottomhole assembly (BHA).



**Mark your calendars for the 51<sup>st</sup> Annual  
Shallow Exploration Drillers Clinic!**

**April 19-21, 2016  
Hard Rock Hotel & Casino  
Catoosa, OK**

**The 51st SEDC will feature a National Drilling Association (NDA) program, indoor exhibitors, outdoor displays, and a full agenda of technical presentations.**

**For more information contact:**

<b>Chris Clarke</b> cclarke@odot.org (405) 522-4998	<b>Scott Cosby</b> scosby@odot.org (405) 522-4996
---	---

**Or visit: <http://sedc.unl.edu>**

**For room reservations, use code: DOTAPRIL2016  
by calling (800) 760-6700 or visit [HardRockCasinoTulsa.com](http://HardRockCasinoTulsa.com)  
Room reservation deadline is: **April 1, 2016****

# FOREMOST DRdrills



## CAPABILITY. VERSATILITY. DEPENDABILITY.

Since 1979, Foremost's Dual Rotary drills have delivered on the promise of better performance. They continue to make significant contributions to the productivity and profitability of operators worldwide. For a growing number of contractors...

**There's simply no better way to drill.**

### FOREMOST DR RIGS ARE IDEAL FOR:

Domestic & Municipal Water Well Construction, Well Abandonment and Casing Recovery, General Building Foundation Construction, Land Reclamation Projects, Underground Mine Utility Shafts and Mine Abandonment, Mine Construction Site De-Watering, And Much More!



To learn more, visit [foremost.ca/DR](http://foremost.ca/DR)  
or call **1.800.661.9190** (Canada/U.S.A.) **1.403.295.5800** (Worldwide)

*WorldWide Drilling Resource®*

**DESIGN. BUILD. PERFORM.**

Engineered solutions for the resource industry.

JANUARY 2016

55

# In Honor of Our Dear Friend, MR. Worth Pickard 1929 ~ 2015

by Veronica I. "Ronnie" Jones  
Managing Publisher



Of course, as time goes by, we share our loved ones with other loved ones - so Kathy got to know Mr. Worth. We both cherish this photo taken at the 2015 South Atlantic Well Drillers Jubilee in Myrtle Beach.



Worth Fields Pickard of Sanford, North Carolina, lost his life to pneumonia on November 17, 2015. He was born in Lee County, son of the late Ella Fields Pickard and James Clinton Pickard.

I am sure Mr. Worth held many plaques and honors for all his great work. He had such a "soft heart" and when he received this Lifetime Emeritus Board Membership Award in 2004 during the South Atlantic Well Drillers Jubilee, he was happy beyond belief and you can see it in his eyes as they we p e d with happiness and excitement.



He is survived by his loving wife Nancy House Pickard; daughters Robin Pickard Matthews, Melody Pickard (Scott) Godfrey, a brother Clinton Pickard (Ernestine), daughter-in-law Kelly Pickard, seven grandchildren, five great-grandchildren, and two nephews.



He was the owner and operator of Carolina Well and Pump Company until he retired. He was the proud past president of the North Carolina Water Well Association, South Atlantic Water Well Association, as well as the National Ground Water Association.

Mr. Worth was a very active man being a member of the Sanford Lions Club, the Masons, the Scottish Rite, the Shrine Club, and the R.E. Lee Society. He had been past chairman of the Lee County Planning Board, Election Board, Recreation Board, Lee County Industries, and Railroad House Historical Association. In addition to all of these attributes, he was a religious gentleman, being an active member of the First Baptist Church and a former deacon.

He was preceded in death by two sisters, Rachael Pickard and Alice P. Utley, as well as a brother William James Pickard and son Herbert Ray Pickard.

It was the desire of him and his family that Memorial Contributions be made to First Baptist Church, 202 Summit Drive, Sanford, NC 27330.

A very touching tribute was made to Worth Pickard on November 19th by Zach Potter of the Sanford Herald, who allowed **WorldWide Drilling Resource, Inc.** the privilege of posting that tribute on our Facebook page and to allow access to it through this tribute to our dear friend.

That link is:

[http://www.sanfordherald.com/news/a-love-of-lee-county/article\\_fd2c6636-8e64-11e5-8088-13b2c01e7d6f.html](http://www.sanfordherald.com/news/a-love-of-lee-county/article_fd2c6636-8e64-11e5-8088-13b2c01e7d6f.html)

Honoring our friends, family, loved ones, associates, when they are no longer around is truly one of the most difficult things I have to do, especially when it comes to someone as near and dear to my (our) heart(s) as Worth. As I look back to the many years ago when I became fortunate enough to make the drilling industry my "home", my



employer, then friend, and most recently my partner, introduced me to a man Doc

called ----



"Mr. Worth Pickard". From that time, and to this day, Mr. Worth holds a special place in my heart.



Lest we forget...

# Reservoir Confirmed at the WPG Geysers Project in California

Adapted from a Press Release by MarketWatch

U.S. Geothermal Inc. announced it has received the reservoir engineering report for the WPG Geysers project from third party engineering firm GeothermEx Inc. (a Schlumberger company).

The company successfully completed a flow test program in June on the three largest production wells at the project in northern California, confirming the wells were still open and ready for production. GeothermEx Inc. designed the isochronal (step-rate) flow test program, and monitored the well testing process.

GeothermEx reported the four production wells are capable of delivering an initial capacity of 28.1 megawatts (MW) gross (25.4 MW net) based on current power plant steam conversion rates from a detailed design for a 28.8 MW (net) power plant. These longer term tests show the wells would initially produce a combined total of 458,000 pounds per hour of steam compared to 462,000 pounds per hour of steam from short-term tests performed when the wells were first drilled, demonstrating the capacity of the wells is virtually unchanged.

Two methods were used to estimate the long-term capacity of the project, and both support a high probability the plant can be operated for 25 years, given the modern plant design and the available productive area.

"The results of this analysis from our test program clearly shows that the WPG Geysers project has approximately 30 megawatts of steam, drilled, tested, and ready for production, and that, with the higher injection rates provided by hybrid cooling, it has the reservoir to support long-term generation," said Dennis Gilles, CEO of U.S. Geothermal. "We are pleased with [the] passage of SB-350 in California, which now raises the Renewable Portfolio Standard for the state to 50% renewable energy by 2030, the highest in the country, and we anticipate this will increase the interest in a power purchase agreement for our WPG Geysers project."



Photo courtesy of U.S. Geothermal.

## Endless Solutions.

Hole Products is a leading manufacturer and supplier of quality drilling products, combining multiple stocking locations, a vast inventory, and worldwide sales capabilities, with unmatched product knowledge, and second-to-none service.

HDD

SONIC

ROTARY

DIRECT PUSH

GEOTHERMAL

GEOTECHNICAL

ENVIRONMENTAL

MINERAL EXPLORATION



**hole**  
**PRODUCTS**  
Drill with us.

888.465.1569

www.holeproducts.com

# Mills Bit Service, Inc.

A family-owned Texas business since 1983.



We specialize in  
PDC repair of all  
brands and sizes.

Bits available for  
oil and gas,  
water well,  
HDD, geothermal,  
mining,  
construction,  
and other  
applications.

We also have  
**Slick Annihilator  
Drill Sticks**  
that destroy clay  
and shale from  
your bit.

Life Force PDC™  
High-Quality matrix, oilfield, and gas  
quality PDC cutters.

We Help Drillers Drill Faster  
And Longer.

We build to suit  
your drill bit needs



Proud member of  
National Ground  
Water Association,  
and Texas Ground  
Water Association.

Call Toll-Free USA and Canada: (877) 326-9724 • (940) 781-8014  
or fax us: (940) 872-3726

[mills8@hughes.net](mailto:mills8@hughes.net) • [millsbitserviceinc.com](http://millsbitserviceinc.com)

We ship worldwide by all carriers.  
Service above and beyond your needs!



Find  
Mills Bit Service,  
Inc. on Facebook  
and like us.

# Product Spotlight

The QuickLink (QL) product line just got larger with the addition of the **QL40-OBI-2G** optical borehole imager from **Mount Sopris Instruments**. The new system has a completely redesigned optical assembly with new electronics. Its high-resolution (up to 1800 pixels) digital image sensor combined with a fisheye lens produces an extraordinarily clear, sharp, 360-degree, continuous-upwrapped digital picture of the borehole wall, either in air or clear water. The QL40-OBI-2G operates on any standard wireline.



## Some Coal Hard Facts

Coal has been getting a lot of bad publicity lately, and we wanted to share some of the positive facts about this natural resource.

- Since 1978, U.S. coal mines have paid more than \$7 billion to reclaim mines abandoned prior to laws requiring reclamation. More than 2.4 million acres of land has been reclaimed over the past 25 years!
- U.S. coal deposits contain more energy than all of the world's conventional oil reserves.
- Coal power plants built today emit 90% less pollutants than the plants they replace from the 1970s.
- Canada exports about 28 million tons of coal each year to more than 20 countries. It is also the country's largest export to Japan.
- Roughly 15% of coal production is used by the steel industry, and around 70% of total global steel production is dependent on coal. The paper, brick, cement, and limestone industries also rely on coal to make products.
- Coal by-products are used to make tennis rackets, golf balls, and linoleum. Thousands of different products have coal or coal by-products as components such as soap, aspirins, solvents, dyes, plastics, and fibers like rayon and nylon. Coal is also an essential ingredient in the production of specialist products including activated carbon which is used in filters for water and air purification, as well as kidney dialysis machines.
- Additionally, coal is important in the production of silicones and silanes used in lubricants, water repellents, resins, cosmetics, hair shampoos, and even toothpaste.

**Thank you to everyone who brings coal to the world!**



## Residential Geo is Growing! Is your Business?

The **Fraсте MultiDrill ML**, and its larger cousin, the **MultiDrill XL**, are outstanding for geothermal installations in limited access areas, such as residential backyards. Also excellent for geotechnical applications. Many custom options available.



**Exceeding Drilling Expectations, Daily.**

[marltechnologies.com](http://marltechnologies.com)

1.800.404.4463





## The Real Value of Employee MVRs

by Kyle Rehme  
VolkBell Property & Casualty Insurance, LLC

*Kyle Rehme uses his personal knowledge of the water well, drilling, and environmental industries to provide customers with practical insurance solutions.*

Last month, I mentioned the importance of screening all drivers by running a motor vehicle report or MVR. An MVR will show that an individual has a valid driver's license and is maintaining a safe driving record.

Insurance companies often exclude coverage on employee drivers with excessive amounts of speeding tickets, moving violations, and DUIs (Driving Under the Influence) in their past. This limits the risk posed by these individuals to the insurance company, and keeps the employer's insurance cost to a minimum.

Regardless of where you do business, an insurance company has two basic choices:

1. Accept your employee with the poor MVR, increase your rate, and charge you a premium appropriate for the increased driving risk.
2. Decline to offer your company insurance, period.

What does this mean to you, the employer? Employee MVRs and driving history matter. An employee's driving history impacts that employee's value and should be carefully taken into consideration before making a hiring decision. Your current employee's personal MVR and driving habits will directly affect your auto insurance rates and premium. Your company's insurability is on the line. One bad MVR could cause an insurance company to not want your business or discontinue doing business in the future. If your commercial insurance package is split between multiple companies, you may be subject to coverage gaps, protection issues, and unseen costs. Worst-case scenario, the employee with a poor MVR causes an accident prompting a lawyer to go after your personal assets.

We encourage you to choose your employees carefully. Run MVRs before making a hiring decision. The small expense you may incur to gather MVR information on your drivers is far less than the amount of money you may need to spend in the event of a claim related to a bad driver.

There is a release form the driver needs to sign to grant you permission to pull the report. Your insurance agent should be able to procure this form for you if you don't already have one.

Additionally, some insurance agents will run MVRs free of charge for clients. Make sure to check with your agent during the hiring process and ask that your potential employee is screened before making a final hiring decision. Insurance companies will typically check MVRs for your current employees at each renewal and report to your agent if there is an issue.

*Kyle*

Kyle Rehme may be contacted via e-mail to [michele@worldwidedrillingresource.com](mailto:michele@worldwidedrillingresource.com)

...Because You Want to  
**Protect Your Future – Today!**

Steve@frig.net      Steve Smith • Kyle Rehme • Trent Smith  
VolkBell Property & Casualty Insurance, LLC



**970-223-1804**



**DOWNHOLE TOOLS • WELL COLLAPSE •  
CONTRACTOR'S PROFESSIONAL • WORK COMP • BIZ INCOME**

**ADD DEPTH TO YOUR INSURANCE**

Drillers • Manufacturers • Suppliers • Engineers • Consultants •  
Water Well • Cathodic • Environmental • Geothermal • Conductor Hole Drillers •  
Oilfield Services • Water Pump Service & Repair Contractors

www.volkbell-pc.com  
www.facebook.com/volkbellpc

1100 Haxton Dr. STE 100, Fort Collins, CO 80525



**WorldWide Drilling Resource®** is proud to be a member of these associations.

National Ground Water Association  
Tel: 800-551-7379 Fax: 614-898-7786  
[www.ngwa.org](http://www.ngwa.org)

Alaska Water Well Association  
Tel: 907-562-2312 Fax: 907-562-5971  
[www.alaskawaterwellassoc.org](http://www.alaskawaterwellassoc.org)

American Ground Water Trust  
Tel: 603-228-5444 Fax: 603-228-6557  
[trustinfo@agwt.org](mailto:trustinfo@agwt.org)  
[www.agwt.org](http://www.agwt.org)

Arizona Water Well Association  
[admin@azwwa.org](mailto:admin@azwwa.org)  
[www.azwwa.org](http://www.azwwa.org)

Arkansas Water Well Contractors Assn.  
Tel: 501-282-6779  
[tashad@cei.net](mailto:tashad@cei.net)  
[www.awwca.com](http://www.awwca.com)

California Groundwater Association  
Tel: 707-578-4408 Fax: 707-546-4906  
[vbeebe@groundh2o.org](mailto:vbeebe@groundh2o.org)  
[www.groundh2o.org](http://www.groundh2o.org)

Colorado Water Well Contractors Assn.  
Tel: 303-759-2294 Fax: 303-757-0158  
[ExecDir@cwca.org](mailto:ExecDir@cwca.org)  
[www.cwca.org](http://www.cwca.org)

Connecticut Water Well Association  
Tel: 203-272-3077 Fax: 203-250-7199

Empire State Water Well Drillers Assn.  
Tel: 315-339-8960 Fax: 315-339-8960  
[sue@nywelldriller.org](mailto:sue@nywelldriller.org)  
[www.nywelldriller.org](http://www.nywelldriller.org)

Florida Ground Water Association  
850-205-5641 Fax: 850-222-3019  
[kbarclay@executiveoffice.org](mailto:kbarclay@executiveoffice.org)  
[www.fgwa.org](http://www.fgwa.org)

Georgia Assoc. of Ground Water Prof.  
Tel: 678-646-0369 Fax: 678-646-0379  
[bruce@brucewidener.com](mailto:bruce@brucewidener.com)  
[www.georgiadrillers.com](http://www.georgiadrillers.com)

Illinois Assn. of Groundwater Prof.  
Tel: 815-973-3000 Fax: 877-434-9047  
[info@iagp.org](mailto:info@iagp.org)  
[www.iagp.org](http://www.iagp.org)

Indiana Ground Water Assn.  
Tel: 317-889-2382 Fax: 317-889-3935  
[ingroundwater@msn.com](mailto:ingroundwater@msn.com)  
[www.indianagroundwater.org](http://www.indianagroundwater.org)

Iowa Water Well Association  
Tel: 515-243-1558 Fax: 515-334-1164  
[staff@iwwa.org](mailto:staff@iwwa.org) • [www.iwwa.org](http://www.iwwa.org)

Kansas Ground Water Association  
Tel: 620-548-2669 Fax: 620-548-2369  
[www.kgwa.org](http://www.kgwa.org)

Kentucky Groundwater Association  
Tel: 270-247-6658 Fax: 270-251-3004  
[kygwa@bellsouth.net](mailto:kygwa@bellsouth.net)

Louisiana Ground Water Association  
Tel: 225-744-4554  
[www.lgwa.org](http://www.lgwa.org)

Massachusetts Ground Water Association  
Tel: 508-240-1000 Fax: 508-240-1003  
[info@mgwa.net](mailto:info@mgwa.net) [www.mgwa.net](http://www.mgwa.net)

Michigan Ground Water Association  
Tel: 855-225-6492 Fax: 614-898-7786  
[www.michigangroundwater.com](http://www.michigangroundwater.com)

Minnesota Water Well Association  
Tel: 800-332-2104  
[www.mwwa.org](http://www.mwwa.org)

Missouri Water Well Association  
Tel: 314-974-6992  
[Mwwa.MoWaterWellAssociation@yahoo.com](mailto:Mwwa.MoWaterWellAssociation@yahoo.com)

Montana Water Well Drillers Association  
Tel: 406-686-3168  
[www.mwwda.org](http://www.mwwda.org)

Nebraska Well Driller Association  
Tel: 402-476-0162  
[lee@h2oboy.net](mailto:lee@h2oboy.net)  
[www.nebraskawelldrillers.org](http://www.nebraskawelldrillers.org)

New Hampshire Water Well Assn.  
[www.nhwaterwell.com](http://www.nhwaterwell.com)

New Jersey GroundWater Association  
[info@njgwa.org](mailto:info@njgwa.org)  
[www.njgwa.org](http://www.njgwa.org)

North Carolina Ground Water Assn.  
Tel: 919-876-0687  
[www.ncgwa.org](http://www.ncgwa.org)

North Dakota Well Drillers Association  
Tel: 701-225-2674 Fax: 701-783-2685  
Cell: 701-290-7522  
[sorenson@ndwda.com](mailto:sorenson@ndwda.com)

Ohio Water Well Association, Inc.  
Tel: 937-278-0308 Fax: 937-278-0317  
[www.ohiowaterwell.org](http://www.ohiowaterwell.org)



Oklahoma Ground Water Association  
Tel: 405-209-6482  
[info@okgroundwater.org](mailto:info@okgroundwater.org)  
[www.okgroundwater.org](http://www.okgroundwater.org)

Pennsylvania Ground Water Association  
Tel: 814-933-8714  
[roseann65@comcast.net](mailto:roseann65@comcast.net)  
[www.pgwa.org](http://www.pgwa.org)

Rhode Island Ground Water Association  
Tel: 508-562-0569  
[info@rigwa.org](mailto:info@rigwa.org) [www.rigwa.org](http://www.rigwa.org)

South Atlantic Well Drillers "Jubilee"  
Tel: 855-987-7469 Fax: 850-222-3019  
[kgordon@executiveoffice.org](mailto:kgordon@executiveoffice.org)  
[www.jubileewatershow.com](http://www.jubileewatershow.com)

South Carolina Ground Water Association  
Tel: 803-356-6809 Fax: 803-356-6826  
[scgwa@sc.rr.com](mailto:scgwa@sc.rr.com)  
[www.scgwa.org](http://www.scgwa.org)

South Dakota Well Drillers Association  
Tel: 605-734-6631

Tennessee Water Well Association  
Tel: 865-761-4363  
[info@tnwaterwellassociation.org](mailto:info@tnwaterwellassociation.org)

Texas Ground Water Association  
Tel: 512-472-7437 Fax: 512-472-0537  
[goodson@twca.org](mailto:goodson@twca.org)  
[www.tgwa.org](http://www.tgwa.org)

Utah Ground Water Association  
Tel: 801-541-7259  
[www.utahgroundwater.org](http://www.utahgroundwater.org)

Virginia Water Well Association  
Tel: 804-387-8395 Fax: 804-302-7978  
[info@vawaterwellassociation.org](mailto:info@vawaterwellassociation.org)  
[www.vawaterwellassociation.org](http://www.vawaterwellassociation.org)

West Virginia Water Well Drillers Assn.  
Tel: 304-636-6025 Fax: 304-636-0231  
[framedrilling@frontier.com](mailto:framedrilling@frontier.com)

Wisconsin Water Well Association  
Tel: 608-326-0935 Fax: 608-326-0966  
[info@wisconsinwaterwell.com](mailto:info@wisconsinwaterwell.com)  
[www.wisconsinwaterwell.com](http://www.wisconsinwaterwell.com)

Wyoming Water Well Association  
Tel: 307-788-1530 Fax: 307-788-1530  
[wywaterwell@wyobraska.com](mailto:wywaterwell@wyobraska.com)  
[www.wywaterwell.org](http://www.wywaterwell.org)

**Want to be listed?**  
**(850) 547-0102**  
[wwdr@worldwidedrillingresource.com](mailto:wwdr@worldwidedrillingresource.com)



Here we are in 2016. Where in the world has the time gone? Quite a few of you have Facebook, and scroll sometime during the day or evening. Well, my time is in my chair in the early AM drinking my first coffee.



Quiet time is cherished. That is for sure. Recently I was doing just that and came across these three "very point on" little cuties. I thought you'd enjoy them.

As we begin this New Year, we eagerly look toward the future of our industry. No matter what you may think - there is a light at the end of the tunnel. So get ready to get to work and make things happen. We certainly are here at *WorldWide*. We are in our 13th year (some thought it wouldn't last 6 months), just to let you know what this *WWD* Team does for our industry. Bragging? No. Just stating the facts.

Remember the TV show *Dragnet* which used the phrase, "The Facts, Nothing But The Facts!"



- 1 - **Association Support** is a top priority - so we provide FREE listings in *WorldWide Drilling Resource*® monthly issues.
- 2 - We provide important **fact-filled seminars** to help you succeed in your chosen field(s).
- 3 - The *WWD* Team **travels the world** for you, not only taking your message(s), but bringing back messages to you.
- 4 - **Industry Events** are vital for each and every one to keep abreast of new technological advances, as well as seeing friends. *WWD* documents those events which can be seen each month on our Web site. **40-46 Annual Events**.
- 5 - OH, speaking of Web sites - Please check out our **NEW, EXCITING Web site**. Let us know what you think.
- 6 - **Facebook**? You bet - This Facebook takes you along with us on our journeys the world over - it's our TRAVEL Log. We think you'll love it. **For every LIKE we get in January, we are giving a dollar to education - and you receive a gift as well.**
- 7 - **LinkedIn**? We are there too! Join our Group. We'd love to have you.
- 8 - Sorry **NO BLOGS** here - you barely have enough time now, why clutter it up even more?
- 9 - **SERVICE, SERVICE, and MORE SERVICE**...we know you can't beat our Service anywhere.

## Enid Drill Systems, Inc.

We are 100% dedicated to the water well industry

Parts located and spares provided for existing equipment.

18" rotary tables now produced with large ring gear and pinion.

Need Repairs?

Rotary tables • Mud pumps • Major components

1611 W Chestnut Ave.  
Enid, OK 73703

Phone: (580) 234-5971

Fax: (580) 234-5980

www.eniddrill.com

**Don't forget!**

Order your copy of "Transfer of Technology" written by John L'Espoir



*We really do care about you and yours. God Bless You - See you on the trail...*



*And that truly is... Ronnie's Real World!*

# The Oil Well Next Door

by Amy White, Associate Editor, *WorldWide Drilling Resource*®



Down this trail lies one of Florida's first commercial oil wells. *WWR* photo.

“You drill for oil in Florida?” is a typical response at oil and gas events when people learn *WWR* is based in the Sunshine State. The answer is yes, Floridians do drill for oil, and have done so for a very long time. In fact, about ten miles from our office, a long-forgotten oil well proves Florida's enduring history of searching for black gold.

Along a nature trail at Falling Waters State Park in Chipley, Florida, one of the state's first commercial oil drilling sites can be found. In



1919, after years of rumors about oil buried deep beneath the pines, independent oil prospectors drilled several wells in eastern Washington and western Jackson Counties.

A sign commemorating the local site says:

A man by the name of Jose Mantanza sparked the interest of oil wildcatters with legends of a rock-enclosed substance that would burn. Other such speculation was given by wildcat stock promoters that claimed some of the rocks had been formed from oil-bearing sand. So, in the midst of a beautiful piece of earth, wildcatters began to erect a drilling sight on an apparent earth fault. A tall, wooden derrick and a steam-driven rig were used for the drilling operation. The derrick was built eight miles away at Hard Labor Creek, and brought to the site by an ox-drawn cart.



View of the oil derrick at Falling Waters during the early 20th century provided by the Florida Archive.

The drillers had little luck finding oil. When 3900 feet was reached, a blow of gas

was released from the drill site. Area residents were temporarily excited by a false report of a gusher. The oil well continued to be drilled to a final depth of 4912 feet. When it was all said and done, no oil in commercial quantities was found, and the well was capped off in 1921.



All that remains of the historical oil drilling site in Washington County is this capped well shaft. *WWR* photo.

Time would prove exploration drilling at the Falling Waters site was not so far-fetched. Decades later, a large field of commercial crude was discovered about 100 miles away near the community of Jay. The Jay oilfield is still pumping today from approximately 93 active wells.

Though drilling attempts at Falling Waters failed to produce commercial quantities of oil, exploration efforts did eventually lead to a great treasure for Washington County. Long after drilling ended in the area, a cow fell into one of the old sludge pits. Extensive newspaper coverage about “potential dangers” of the site, along with a strong nudge by civic-minded citizens, resulted in a decision by the property's owner to deed the ground to Washington County. This land became the core of today's Falling Waters State Park.

Along with the historic oil well site, visitors will find one of Florida's most significant geological features in the park. Down a trail lined with fern-covered sinkholes, a boardwalk leads to the state's highest waterfall, formed where a hilltop stream flows over the rim of a stunning sinkhole. A wooden stairway leads into the mouth of the 100-foot-deep, 20-foot-wide cylindrical sink



LEFT: The waterfall at full speed courtesy of [floridastateparks.org](http://floridastateparks.org)  
BELOW: *WWR* photo looking into the sinkhole at the fall's bottom. Due to dry weather, the waterfall was at a trickle on our visit.



where sightseers can gaze up to see the waterfall cascade 73 feet down a limestone wall before disappearing into a cave at the bottom of the sinkhole.

Next time you think about Florida, remember it has more to offer than just sunshine and sand. If you're ever in our neck of the woods, a shady canopy of longleaf pines await at Falling Waters State Park. Don't forget to stop by the old oil well site so you can tell everyone, “Yes, they drill for oil in Florida!”



Kathy

# WorldWide SUPER MART™



Brenda

Call Now!

850-547-0102

### Appraisals

120

#### QUICK CASH MONEY

Paid for Drill Rigs, Pump Hoists, Mud Pumps, Drill Pipe, & Bits.

RENE HENDON Tel: 281-260-0880

120-120

### Auger Rigs

130

#### BUY / SELL / TRADE

Drills, Augers, Tooling, Parts

CME, Mobile, Diedrich, Acker, Failing, B-61 HDX, B-61 complete or parts, B-57, B-53, B-47, B-40, B-24, Min Man, CME 45 skid/trailer/truck, Gus Pech Brat 22 long stroke, Failing F-6, 10 FT Geo Drill, Failing 250 kelly drill.

DRILLS N MORE 812-689-7042

130-1187



2002 CME 1050, 8500 hours, 4x4, Cummins 6BT 5.9L Turbo-charged diesel engine, 4-speed trans., 24,000 ft-lbs rotary torque, auto hammer, Moyno 3L10 pump, dual power auger racks, 3 winches w/wireline, breakout wrench, power sliding base, excellent condition.....\$180,000

Call Jeff at (218) 780-3480

130-1214

88 Failing F-10 HSA/Rotary rig 11 ft. stroke, on 88 Int. tandem, 6 cyl, Cummins deck engine, 5x6 Failing pump, Moyno 3L8, 500 gal. H2O tank, in-out/side-slide base, angle package. Great all-around versatile rig.....\$47,500 505-856-6498

130-1194

Texoma Auger Trucks, pressure digger, 4x4 chassis, pole setting, 20'...\$49,000 920-468-5035

130-944

### Bits

220

## Moab Bit & Tool Co., Inc.



PDC's, tri-cones, custom bits, hole openers, drill pipe, subs & stabilizers.

*Doing business for over 50 years.*

24 hr. service

PH 800-453-1052 • FX 435-259-2968

sales@moabbit.com • moabbit.com

220-822

#### WANTED TO BUY!!

Large quantities of scrap carbide drill bits & hammer bits.

E-mail: ttbits@midwest.net

Call 800-333-1816

220-413

## HOFFMAN DIAMOND PRODUCTS

sales@hoffmandiamond.com  
www.hoffmandiamond.com  
800-444-4180



Quality, Integrity, and Customer Service

- Diamond Core Bits
- Casing Shoes
- Reaming Shells
- Diamond Cup Grinders

220-712

#### Shelby Tube

3" x 30"

#### Surplus Supply

\$13.50/pc - \$150/case

Call Us 24/7

helanbak.com / 601-270-6246

220-1213

**Drill King**  
ISO INTERNATIONAL  
Sales@DrillKing.net  
866-900-BITS  
UP TO 42 in.

220-1108

#### Drill Bits

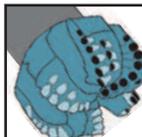
Tricone - PDC - Drag Bits  
Hammer Bits - DTH Hammers  
HDD Single Cones - Reamers  
Hole Openers

And Much More!

Call Us 24/7

helanbak.com / 601-270-6246

220-1213



#### JERRY'S BIT SERVICE INC.

710 CR 3336

Paradise TX 76073 USA

(940) 683-2874 Fax: (940) 683-2874

Mobile: (940) 393-2394

Contact: Jerry Shoemaker

jerryshoemaker54@yahoo.com

Jerry's Bit Service Inc. will meet your every drilling need. We service and sell tricone, PDCs, as well as hole openers. Rather rent a PDC? No problem. Got you covered. Our company will repair your PDC regardless if it is a rental or purchase.

220-919

#### New & Rerun Drill Bits

- 9-7/8" New TCI Button Bit.....\$2520
- 9-7/8" Geo Klaw.....\$960
- 7-7/8" New PDC 5 Blade.....\$5040
- 3-7/8" New Tooth Bit.....\$144
- 4-1/4" New Tooth Bit.....\$150
- 4-1/2" New Tooth Bit.....\$156
- 11" New Tooth Bit.....\$1800
- 14-3/8" New Tooth Bit.....\$1200
- 26" Rerun Tooth Bit.....\$4200

Call Us 24/7

helanbak.com / 601-270-6246

220-1213



#### New Diamond Bits For Sale

- (15) NXM
- (1) BX
- (9) NX (Mott)
- (1) BX casing shoe

615-746-3744

220-905

CLASSIFIED

Bits  
220

## ROCK BITS!



Cable Tool  
Air Hammer  
Roller Cone  
3" to 24"  
"A Good Bit  
Better"



800-523-5760

540-635-7753 Fax 540-635-6352

TRIDENT TOOL INC.

tridenttool.com

220-1200

WorldWide Sales Of New &  
Rebuilt Roller Cones and PDCs  
Complete Repair of PDCs



Call, Fax, or Email  
For Quotes  
P.O. Box 1067  
Archer City, Texas 75351  
940-574-4977 Fax  
Abilene Sales: 713-254-5378  
325-864-7075 Cell  
e-mail: usabit@usarockbit.com  
Visit Our Web Site At:  
http://www.usarockbit.com  
We Accept Visa, Master Card & Discover

We Purchase New and Used Bits  
OIL FIELD, WATER WELL & ENVIRONMENTAL  
NEW BITS IN STOCK  
CALL US FOR SIZES AND TYPES  
1-800-451-2906 TOLL FREE

220-162



- Bit Rental  
- New & Rerun Bit Sales  
- Factory Trained PDC Bit Repair  
940-663-5747  
www.KEYSBIT.com



220-1148

INTERNATIONAL DRILL BIT SUPPLIER.



KS/BIT  
KNOWLEDGEABLE · DEPENDABLE · GLOBAL

NEW  
SURPLUS



RERUN  
RETIP

OVER 15,000 BITS IN STOCK  
MILL TOOTH TCI · SEALED OPEN BEARING

800.213.1389 SALES@KSBIT.COM

220-699

Hey! Did you see *WDR*'s  
new Web site? Check it out!



worldwidedrillingresource.com

Boom Trucks  
225

Terex 23½-ton boom truck on 2002  
Peterbilt, 27,000 miles.....\$115,000  
National 671H 20-ton boom truck, 21' bed,  
on 2011 Peterbilt, 12,000 miles...\$220,000  
Call Alan Lang: 801-554-2419

225-1027

Breakout Tools  
238



CHECK OUT OUR UPDATED WEBSITE!

Specializing in  
Hydraulic  
Breakout Tools

- Models Ranging from:  
1.5" - 10.75"
- Torque up to 21,000 Ft-Lbs
- Optional Rod Spinner
- Optional Control Panel



NEW MODELS ARE AVAILABLE!!!

(509)946-6400

Email: sales@blackdogind.com  
www.blackdogind.com

238-574

SEMCO, INC.  
All-Hydraulic Hydrench  
S112H in Stock  
1-12" Four Rollers  
Breaks Pipe, Makes Pipe to Torque Specs  
800-541-1562

238-135

Business Opportunity  
245

### BUSINESS FOR SALE

Successful Central California pump  
company for sale (owner retiring). Sales,  
services, and repairs with a loyal,  
outstanding customer base. Works with  
Agricultural, Municipal, and Residential  
pumps. **Serious inquiries only.**  
Contact: 559-269-7669

245-1165

### BUSINESS FOR SALE

Successful pump company  
established in 1986 in north-  
eastern Colorado for sale (owners  
retiring). Sales, services, and  
repairs with a loyal and out-  
standing customer base. Works  
with large & small agricultural  
and municipal pumps.  
Serious inquires only, please.

**CONTACT: 970-848-5137**  
**970-630-0968**

245-1210

Cable Tool Rigs  
305

Star 55 Drill Rig.....\$7,500  
503-602-2847

305-1186



BE 22-W Series 2, hardly used, has a  
new Ford 172 engine, 50 ft. derrick, (3)  
hydraulic winches and (4) jacks on a  
1984 AMG 6x6, with an Atlas casing  
hammer, asking.....\$99,000  
Also Alten 32A, 24A, (2) 55 SpeedStars,  
and a 36 Cyclone. Call for price.

269-963-2529 or

E-mail: cablewelldriller41@yahoo.com  
Ray Leonard, Battle Creek, MI USA

305-170

### BUY AND SELL!

BE Cable Tool Rigs & other makes.  
For Sale - BE 20W, 22W, 28L, 36L & 60L.  
Wanted - BE 20W, 22W, 28L, 36L & 60L.  
\*Buy and Sell Water Well Rotary Rigs\*

\*Let us advertise your rig\*

Reese Rig & Tool Co. LLC - 740-408-0725  
neh810@yahoo.com reeserig.com

305-982

Cable Tools  
307

**RAMPP COMPANY**  
CARBIDE BUTTON BITS  
CABLE DRILLING & FISHING TOOLS

800-272-7886

www.RAMPPCO.COM

307-518

C  
A  
L  
L  
8  
5  
0  
-  
5  
4  
7  
-  
0  
1  
0  
2

**Cable Tools**  
307

Hocker Drilling and Fishing Tools  
Special Price on Cable Tools! We  
accept Visa & Master Card. New &  
Used Cable Tools, Rope Sockets,  
Stems and Bailers.  
Call 270-926-2889

307-107

**CABLE TOOLS!**



**ROPE SOCKETS  
STEMS  
BAILERS  
JARS & SUBS  
Combination  
Sockets**

**800-523-5760**

540-635-7753 Fax 540-635-6352

**TRIDENT TOOL INC.**  
tridenttool.com

307-1200

Lots of cable tools, stems, (bits to 24"+)  
bailers, jars, crossover subs, rope  
sockets, J wrenches, drive heads, drive  
blocks and more.

503-602-2847

307-1186

**Cameras**  
309

**CAMERAS!**



**GeoVISION™ Economy  
Camera System  
GeoVISION™ Deluxe  
Camera System**

**800-523-5760**

540-635-7753 Fax 540-635-6352

**TRIDENT TOOL INC.**  
tridenttool.com

309-1200

**WorldWide SUPER MART™**

March Issue Deadline:  
Ad Copy - February 1<sup>st</sup>

**ALLEGHENY  
INSTRUMENTS**

**GeoVISION™**  
Borehole Video Systems

- Six Interchangeable Cameras
- Joystick Operated Pan-Tilt Control
- Small Diameter Dual-View Camera
- Depths to 2,000 Feet Underwater
- For Bores as Small as One-Inch (25 mm)
- Expandable and Upgradeable Systems
- Made in the USA

www.allegHENYinstruments.com  
802-626-5302 sales@allegHENYinstruments.com

309-1191

**Casing Drivers**  
313

R2000 Atlas casing driver.  
Updated model.....\$17,000  
Call Jay - 406-261-6711

313-857

**Casing Tools**  
320

**TekMark Industries**



Internal Casing Lifter 35 Tons



Flush Joint Elevator



Casing Holder 35 Tons

PVC Cutoff & Torch Guide  
DTH Spear - PVC Puller  
Heavy Column Pipe Holder  
Other Casing Tools  
tekmarkwellcasingtools.com  
800-747-2485 or 509-747-2485

320-254

**Compressors**  
335

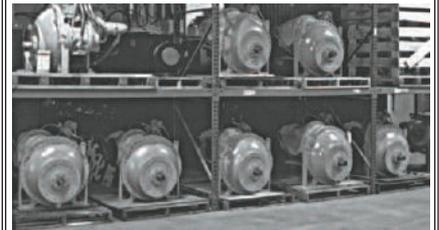


Sullair 750cfm 350psi towable or skid-mounted  
diesel compressors, 300 to 1500 hours since  
new! In California, can ship worldwide.  
Giant Ingersoll Rand air packages (5) 1600  
cfm at 500+ psi multistage compressors.  
Sierra Equipment: (510) 887-7500

335-1215

**R & R DRILLING INC.**

800-874-3907  
PH. 423-626-5302 FAX. 423-626-1232  
E-mail: airdocron1@gmail.com



**SULLAIR**

Distributor of  
SULLAIR Compressors

**INGERSOLL-RAND**

**AIR COMPRESSORS  
NEW & REBUILT  
HR2s - HR2.5  
AIRENDS IN STOCK**

**SCHRAMM**

Schramm Distributor  
**GHH - RAND**

Distributor of Genuine GHH Rand Parts

**Will Ship Worldwide!**

**NEW & REBUILT SULLAIR  
& GHH COMPRESSORS  
SHIPPING WORLDWIDE**

Sullair 750/350 to 1350/500  
GHH 204/128 and CF 1000  
Excellent Exchange Prices!

335-183

**Compressors**  
335

Distributor of brand new **Ingersoll/Rand** airends, all models and sizes available.  
Anderson Equipment Sales and Service, Inc.  
**andersondrilling@aol.com**  
**(801) 243-4480**

335-1216

**Direct Push Drills**  
401



**AMS PowerProbe™ 9580-VTR**

- Advanced Direct Push Technology
- Solid & Hollowstem Auger Capable
- 8,000 ft/lb 2-Speed Auger Drive Head
- Increased Horsepower & Fuel Economy
- 3,000 lb. Adjustable High Speed Winch

105 Harrison Street, American Falls, Idaho 83211  
www.ams-samplers.com/PowerProbe  
Phone: 800-635-7330 ams@ams-samplers.com

401-1118



**ECT**  
Manufacturer of Pre-Pack Screens

- 4" ID Pre-Pack NOW AVAILABLE
- Standard Pre-Pack  
When You Would Set A Traditional Well
- Economy Pre-Pack  
When Cost Is A Factor
- 20% Open Area High Yield Pre-Pack  
For Use In Low Yield Wells
- All Stainless Steel Pre-Pack  
For Aggressive Groundwater Environments
- Non-Metal Pre-Pack  
When Metal Components Are Not Compatible
- Annular Seals  
Foam Bridges, Bentonite & Quick-Sleeves
- Custom Injection Pre-Packs Available

\*\*\* A Johnson Screens Distributor \*\*\*  
\*\* We Stock Geoprobe compatible Supplies & Tooling \*\*  
\* Proactive Pumps Master Distributor \*

**Toll Free 1-888-240-4328**  
Phone: 1-609-631-8939 • Fax: 1-609-631-0993  
ectmfg.com • proactivepumps.com • torquerplug.com

401-719

**Drill Pipe**  
435

574 jts 6-5/8" OD reverse circulation drill pipe  
62 jts 5-7/8" reverse circulation drill pipe  
5 jts 11" OD x 5-1/4" ID drill collars  
6 jts 10" OD x 5-1/4" ID drill collars  
Call Brandon at E&M 337-332-0239



435-1212

**New & Used Drill Pipe**  
AWJ - NWJ - IF - API

Mayhew Regular - Mayhew Jr  
Up to 6-1/2" Pipe  
**Buy Direct - Best Price**  
**Call Us 24/7**  
**helanbak.com / 601-441-6414**

435-1213

200+ pieces 4 1/2" external flush drill pipe,  
30-foot lengths, 2-7/8" reg joints, RD20 type,  
some new, others like new... **\$20 per foot**  
**Call Alan Lang: 801-554-2419**

435-1027

**Used Matrix Single Tube 7" Pipe**  
**Matrix 7" LEFT HAND THREAD**  
connections on 6-5/8" OD mid body,  
5.75" ID, 20' lengths, 45 joints available.  
**\$900 per joint**  
**Call 970-874-7393**

435-1038

**Flush Joint & Bottleneck Drill Pipe**  
**IN STOCK - SURPLUS & USED**  
2-3/8", 2-7/8", 3-1/2", 4", 4-1/2", 5, 5-1/2"  
**Economy Drill Pipe, Tool Joints for**  
**WELD-ON & SCREW-ON Applications.**  
**RENE HENDON 281-260-0880**

435-120

**Drilling Accessories**  
450



**DOTSON SALES**  
MANUFACTURERS' REPRESENTATIVE

7713 Kamloops Drive  
Bakersfield, CA 93309  
ddotson.swmktg@att.net

PH: 661-834-3622 FX: 661-834-4763  
Cell: 661-619-3566

450-1105

**Drilling Fluids**  
455



**BIG FOOT**  
Polymer Slurry

So good you won't believe it.  
**matrixcp.com**  
MATRIX Construction Products

455-1192

**Drilling Products**  
458



**IES DRILLING SUPPLIES**  
**THE MUD MEN**  
- Water Well - HDD - Geothermal - Env. & Remediation  
**IES Exclusive Products**

- Drilling Mud •Polymers
- PVC and Stainless Screens
- Above Ground Protectors
- Manholes

We deliver to all 50 states  
7 days a week!  
Give us a call!

Cam-lock Manholes  
Aluminum Anodized  
Procovers

104 E. DeVore St. Pearl City, IL 61062  
Ph: 800-388-2906 Fax: 815-443-2893  
E-mail: sales@iesdrillingsupplies.com  
www.iesdrillingsupplies.com

458-814

**Drilling Tools**  
463



**DRILLWORX**  
Our experience worx for you



**Give us a call today and ask**  
**about our low-cost high-quality**  
**solutions to your drilling needs!**  
**844-241-5513**  
**drillworx.us**

463-1180

**Electric Motors**  
510

**-WANTED-**  
20 to 300 hp vertical hollow  
shaft pump motors.  
**Good or Bad! Will pick up!!**  
**800-541-1562**

510-135

**Elevators**  
515



**SEMCO INC.**  
1" Thru 16" Elevators  
All steel with safety latch.  
**800-541-1562**  
Fax 719-336-2402  
**www.SEMCOoflamar.com**  
Ship by  same day




515-135

CALL 850-547-0102

**Elevators**  
515



**SkyRex**

Water Well Elevators  
1" to 24"  
Also Light Weight PVC  
Elevators

**SAME DAY SHIPPING!**  
Rex McFadden Co., Inc.  
806-791-3731

See our ad on page 37.  
[www.rexmcfadden.com](http://www.rexmcfadden.com)

515-123

**Employment**  
520

Env. firm seeks exp. auger rig drillers, helpers, and sonic driller. Clean CDL-A a plus. E-mail for info and other job openings. [info@aztechenv.com](mailto:info@aztechenv.com)

520-912

**Geothermal Equipment**  
708

Self-loading heat loop reel installation trailer.....\$3500  
Vacuum machine - Ring-O-Matic Co. Mfg.....\$7500

503-602-2847

708-1186

**Ground Protection**  
711

**AlturnaMATS, Inc.**

Your single source for ground protection. **AlturnaMATS** are made of HDPE and feature a limited lifetime warranty.

Toll Free: 888-544-6287

711-778

**Grouters**  
715



Single & Double hopper  
Rose-Wall  
grouters in  
stock.

828-322-3056

[jeffj@drillingequip.com](mailto:jeffj@drillingequip.com)  
[www.drillingequip.com](http://www.drillingequip.com)

715-121

**Hammers**  
805

**HAMMERS!**

Made in U.S.A.



IR Style  
Mission Style  
Halco Style  
3" to 24"

800-523-5760

540-635-7753

Fax 540-635-6352

**TRIDENT TOOL INC.**

[tridenttool.com](http://tridenttool.com)

805-1200



**Casing Hammers**  
Atlas "Pure Strike"  
Casing Hammers



**Casing Jacks**  
Atlas "Yellow Jacket"  
Casing Jacks



**Hydraulic Power Packs**

Diesel and Electric  
Hydraulic Power Packs

To see all our products,  
visit us online:  
[www.casinghammer.com](http://www.casinghammer.com)

**Atlas Manufacturing Ltd**

6524 North Island Hwy  
Merville BC V0R 2M0  
Canada

Phone: 250-337-5030

Fax: 250-337-5136

Toll-Free 866-338-5090

E-mail: [atlas@casinghammer.com](mailto:atlas@casinghammer.com)

805-313

**ELEVATORS!**



For 1/2" to 19" Casing  
Steel and PVC

800-523-5760

540-635-7753 Fax 540-635-6352

**TRIDENT TOOL INC.**  
[tridenttool.com](http://tridenttool.com)

515-1200



· Kwik Klamps  
· PVC Pipe Elevators  
· Flush Joint PVC Pipe Clamps

**J&K Tool Company, Inc.**  
[www.jktool.com](http://www.jktool.com) · [sales@jktool.com](mailto:sales@jktool.com)  
320-563-4967

515-187

**ELEVATOR SPECIAL**

1", 1 1/4", & 2" Slip-type Elevator w/kwik-clamp  
Package Special  
All 4 pieces for \$900

**DRILLING EQUIPMENT SALES, INC.**

2515 Highway 70 SW · Hickory, NC 28602



828-322-3056

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

515-121

Hydro Frac Equipment  
815



**SkyQuip, LLC.**  
Building the tools to help your business take flight

- Hydro-Frac Equipment
- Evolution Pump Hoists
- Poly Pipe Reels

S.Kyle Equipment  
800-426-6377 www.hydro-frac.com

815-1123

Complete Hydrofracturing Setup!  
1993 Peterbilt 357 with crane and 2,600 gal. water trailer. Well rehab trailer & hose reel, developing tools, cleaning tank, etc. Call 509-994-3314 for more details. [nwfrac@juno.com](mailto:nwfrac@juno.com)

815-1027

Injection Pumps  
820

**DU-ALL Injection Pumps**



All parts in stock and available for shipment. Overnight delivery available. Call your local parts supplier or Fred's Water Service at (440) 259-5436 with your order or questions.

**Fred's Water Service, Inc.**  
4390 Elberta Road Perry, Ohio 44081  
Phone (440) 259-5436  
www.fwservice.com  
Fax: (440) 259-4795




820-610

Magnets  
990

**RETRIEVING MAGNETS!**



**3 1/2" to 6 1/2" Dia.**  
100 to 600 Lbs.

**800-523-5760**  
540-635-7753 Fax 540-635-6352  
**TRIDENT TOOL INC.**  
[tridenttool.com](http://tridenttool.com)

990-1200

Meters  
1107

**Meter Testing, Repairs, & Calibration**



**Mid America Meter Inc.**  
Nationwide Services  
Rebuilt & New Meters  
**1-800-324-0365**  
Turbo, Propeller, and All Other Types of Meters.



All Makes & Models  
5/8" - 12"

Where America sends its meters

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

1107-1204

Mud Pumps  
1120

GD & Wheatley 4x5 to 7x12  
Complete Pump, Gearend, Fluidend  
RENE HENDON 281-260-0880

1120-120

Hydraulic driven mud pumps  
~ small and lightweight ~



New 7 1/2"x10" duplex pump

- Fits in the place of a 5"x6"
- Pumps 300 GPM at up to 800 PSI
- Weighs half as much as a 5"x6"
- Other models available
- US Pat. # 6,769,884 and others pending

**Centerline Manufacturing**  
Call (903) 725-6978  
or visit our Web site  
[www.centerlinemanufacturing.com](http://www.centerlinemanufacturing.com)

1120-152

Gardner Denver FXN mud pump with 3408 Cat®.....\$48,000  
Call Alan Lang: 801-554-2419  
1120-1027

Mud Systems  
1125

**MUDSLAYER MFG.**



Where you come for Innovation



360-477-0251  
[www.mudslayermfg.com](http://www.mudslayermfg.com)

**Built for Drillers by Drillers**

1125-576

Home of Solid  
Gold Service™

Packers  
1203



**QSP Packers, LLC**  
Quality - Service - Price

Serving Your Complete Packer Needs

- ♦ **Inflatable Packers:**  
Pressure Grout, Wireline, Water Well, Environmental, For 1.5" I.D. to 13" I.D. + Hole Diameter
- ♦ **Mechanical Packers**

Call us with all your packer questions!  
Toll Free: 1-888-572-2537  
Fax: 253-770-0327

Email: [info@QSPPackers.com](mailto:info@QSPPackers.com)  
WEB SITE: [www.QSPPackers.com](http://www.QSPPackers.com)

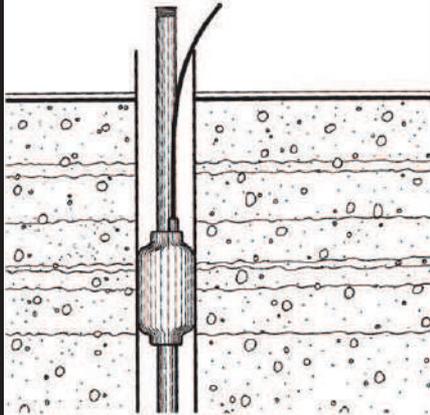
1203-409

CALL 850-547-0102

Packers  
1203

# Lansas PRODUCTS

## Inflatable Well Packers



CUSTOM BUILT  
PACKERS FOR ANY  
APPLICATION

COMPETITIVE  
PRICES

**800-452-4902**

Manufactured by Vanderlans & Sons  
1320 S. Sacramento Street  
Lodi CA 95240  
209-334-4115  
Fax: 209-339-8260  
www.lansas.com

1203-1190

## Baski, Inc.

PACKERS,  
ASR FLOW  
CONTROL  
VALVES &  
PITLESS  
UNITS

1586 S. Robb Way  
Denver, CO 80232  
Ph: 303-789-1200  
Fax: 303-789-0900  
info@baski.com



**www.baski.com**

1203-115

Perforators  
1205

### MILLS Knife Type Perforators

For Sale or Rent  
4" thru 24"

Montana 406-580-2818

1205-1184

On January 19, 1922, the U.S. Geological Survey predicted the U.S. would run out of petroleum in a given number of years. How many years before petroleum runs out? Page 71 has the answer!

Pump Hoists  
1230

### 2016 Dodge & Ford Trucks Available

**\$4,000 Pump Hoist**, 8,000# cap., 35' telescoping mast, 30 gal. oil tank, hyd. pump, 5T safety hook, hyd. controls & variable speed engine control.. **\$15,665**  
**\$6,000 Pump Hoist**, 16,000# 3L cap., 35' telescoping mast, 30 gal. oil tank, hyd. pump, 5T safety hook, hyd. con-

trols & variable speed engine control.....**\$17,950**  
**\$8,000 Pump Hoist**, 22,000# 3L cap., 36' telescoping mast, 30 gal. oil tank, hyd. pump, 7T safety hook, hyd. controls & variable speed engine control.....**\$22,950**  
**\$10,000 Pump Hoist**, 30,000# 3L cap., 40' telescoping mast, 30 gal. oil tank, hyd. pump, 9T safety hook, hyd. controls & variable speed engine control.....**\$32,500**  
**\$12,000 Pump Hoist**, 48,000# 4L cap., 44' telescoping mast, 6000# tail-out line, 72 gal. oil tank, hyd. pump, 11T safety hook, hyd. controls & variable speed engine control.....**\$36,250**  
**\$15,000 Pump Hoist**, 60,000# 4L cap., 48' telescoping mast, 6000# tail-out line, 72 gal. oil tank, hyd. pump, 13T safety hook, hyd. controls & variable speed engine control.....**\$44,895**  
**\$20,000 Pump Hoist**, 80,000# 4L cap., 40' telescoping mast, 6000# tail-out line, 72 gal. oil tank, hyd. pump, 13T safety hook, hyd. controls, & variable speed engine control.....**\$59,230**  
**\$25,000 Pump Hoist**, 100,000# 4L cap., 40' telescoping mast, 6000# tail-out line, 100 gal. oil tank, hyd. pump, 15T safety hook, hyd. control & variable speed engine control.....**\$82,545**  
**\$30,000 Pump Hoist**, 120,000# 4L cap., 40' telescoping mast, 6000# tail-out line, 100 gal. oil tank, hyd. pump, 15T safety hook, hyd. control & variable speed engine control.....**\$96,945**

### USED EQUIPMENT IN STOCK

**\$8,000H SEMCO**, 36' derrick, 22,000# cap., HS PTO, 2-spd, RC, sandreel, oil cooler, aux., PR, 9' bed, toolboxes, 2012 Dodge 5500, 6.7L diesel, auto., 4X4.....**\$73,890**

Contact us for a list  
of more used equipment.

### SEMCO INC.

719-336-9006/800-541-1562

FAX 719-336-2402

See our Ad on page 80.

semcopumphoist@yahoo.com

www.SEMCOoflamar.com

1230-135

### Water Pump Hoists

Monitor 34 on a truck  
Monitor 33 has own motor  
Shop-built hoist with a 3-ton?  
2000 ft. of bailer line  
4 part block older Int'l ton & ½ truck  
Montana 406-580-2818

1230-1184



**WWD** is just a click away online! Read the current issue, browse archive issues, and check out fantastic deals in the **WorldWide SUPER MART™!**  
All this and much more at:

**worldwidedrillingresource.com**

**Pump Hoists**  
1230

**NEW**

Hunke/Smeal Pump Hoist  
 "Your Most Competitive Pricing"  
 Used Hunke/Smeal 5T's, 6T, 8T & R12  
**Buy & Sell** used pump hoists all makes  
 Reese Rig & Tool Co. LLC - 740-408-0725  
 neh810@yahoo.com reeserig.com  
 1230-982

**WANTED TO BUY  
 PULSTAR**

**SMEAL, SEMCO PUMP HOIST  
 RENE HENDON 281-260-0880**  
 1230-120

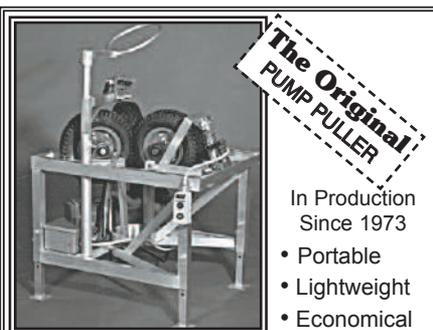
**Duke Equipment Company, LLC**  
 "Reliable and Versatile Pump Hoist  
 at an Affordable Price"



**www.pumphoist4u.com**

1000 E. Oklahoma Avenue  
 P. O. Box 215  
 Darrouzett, TX 79024  
**806-624-2200**

1230-511



**The Original  
 PUMP PULLER**

In Production  
 Since 1973

- Portable
- Lightweight
- Economical

- Welded aluminum frame.
- Waterproof motor and electrical system.
- Worm gearbox holds in any position.
- Will handle up to 2" galvanized pipe @ 600 lb. capacity.
- Pull or set 24' per minute.
- Adjustable legs. Extends down to 7".

(Optional)

Wheel kit w/handles, winch, swing vice  
 and overhead guide.

**Funk Manufacturing  
 Up-Z-Dazy, Inc.**  
 30 Myers Road  
 Newville, PA 17241  
**Phone: 717-776-3181**  
**Fax: 717-423-5201**

1230-371



Used Pulstar units available.



828-322-3056  
 jeffj@drillingequip.com  
 www.drillingequip.com

1230-121

**Pumps**  
1240



Trailer-mounted  
 Bean 35 pumping  
 unit w/4-cylinder  
 Wisconsin engine  
 w/electric starter  
**\$4000**

615-746-3744

1240-905

**TASCOSA Pump & Supply  
 Welcomes Barry Royal to the  
 TASCOSA Pump Family**  
 tascosapumpandsupply.com

1240-1169

**SAVE A LOT OF GREEN!**

Have an  
 injection  
 well?

Try our gas  
 or electric  
 Hydra-Cell  
 package.  
 200-1200 BWD  
 pressures to  
 1000 psi.

NG/Propane w/automatic  
 start/stop controls EPS 3-12



Pumping out of a water tank?



**SAVE  
 SAVE \$\$\$  
 SAVE ENERGY**

**CALL**

**Mr. Pumper**

A product of Graham Equipment & Manufacturing  
 877-566-PUMP MRPUMPER.NET

GOULDS • BERKELEY • STA-RITE • MYERS • GRUNDFOS •  
 PENTAIR & MORE

1240-1207

**ROBBCO PUMPS INC**

Manufacturer of  
 Submersible &  
 Lineshaft Pumps

806-749-7475  
 robbcopumps.com  
 Idalou, Texas USA

1240-1112

**Rig Parts**  
1320

**Need  
 Parts or Drilling  
 Supplies?**

Driltech, IR, CP, REICHdrill,  
 Sullair, GHH compressor parts  
 & components.

S. G. Bowman Enterprises, Inc.  
 Phone: (828) 381-1408  
 sgbowmanent@bellsouth.net  
 www.sgbowmanent.com

1320-461

**KELLY BARS**  
 Fluted, Round, & Square  
**DRILL PIPE & COLLARS**

IR 4-1/2" DP w/2-7/8" Conn 30' Joints  
 6" Drill Collars

**ROTARY TABLES**

18" SpeedStar with Bushing  
 8-1/2" Midway

**SWIVELS**

2" & 3" Little Giant  
 King 15XV  
 King 20GW  
 King 40KG

**AIR COMPRESSOR**

Screw 900/200 w/Volume Tank

**GEARBOXES**

Failing  
 Spicer  
 Cotta

For additional information and  
 equipment go to our web site or  
 give us a call.

325-653-3433  
 www.wichtex.com

1320-948

On January 19, 1922, the U.S.  
 Geological Survey predicted the  
 United States would run out of  
 petroleum in 20 years.

**CALL 850-547-0102**

5¼, 7½, 8½, 12, 17½ Rotary Table,  
Hyd. Tubing Tongs, Air Slips,  
Type LF & C Tongs, Elevators  
RENE HENDON 281-260-0880  
1320-120



The **Rx9** Doctor's  
317-839-7534

Complete Rebuilding and Repair  
of Drill Unit Components.

Hub City model 4-H gearbox  
31' - 6" long Failing mast  
2" new Failing water swivel  
12" I.D. new Failing table  
2½" rebuilt King swivel  
Failing high-torque PTO  
Call or fax for listing.

PH: 317-839-7534 FAX: 317-838-9244  
1325-117



1989 SpeedStar 30K CAT 3408-B deck  
(rebuilt '12), 900/350 AC just rebuilt, recent  
tophead rebuild and tophead motor, spare  
backup rig.....\$155,000 505-856-6498  
1330-1194



1990 Diedrich D-50 diesel rig, mtd. on 1990  
gasoline GMC TopKick truck. Rig has a probe  
hammer w/hyd slide. In good shape & ready  
to drill. Reduced..\$58,000 214-755-0067

1330-1195

20W BUCYRUS ERIE CABLE RIG  
Completely restored, mtd. on 2000  
Int'l 4700. Asking.....\$35,000 OBO  
See at BillPentzWellService.com  
Orlando, FL 407-579-5606  
1330-575

**WANTED TO BUY FOR EXPORT**

ATLAS COPCO/INGERSOLL-RAND DRILL  
DM30E, DM45E, DML, T3W, T4W, T5W, RD10, RD20  
DRILTECH DRILL T25K, D40K, T40K, DH1, DH2  
WE WANT SURPLUS SPARE PARTS,  
PIPES FOR ABOVE DRILLS  
TEL: 818-956-5231 FAX: 818-956-5239  
www.pacificcranes.com

1330-995

Authorized  
Distributor  
for  
REICHdrill

828-322-3056  
jeff@drillingequip.com  
www.drillingequip.com

1330-121

**TOPHEAD RC CONVERSION RIGS**  
2 to choose from, each.....\$75,000  
IR-RD-10 53' mast, carrier mtd.  
**KELLY RIGS**  
Failing CF-15, 5½x10 pump, 480/250  
air, 2000 truck.  
GD-14W, 5x6 pump, 650/250 air - nice.  
Failing CF-2500, 18" table, carrier - double  
drum.

307-587-5192

1330-100

**SONIC** DRILL CORPORATION  
Suite 1904120, 119 N. Commercial St.  
Bellingham, WA 98225  
1-804-688-8081  
www.sonic-drill.com

1330-301

'71 SpeedStar and BE 10R, 8" retract  
table, 5x6 GD, LeRoi compressor.  
Both trucks & rigs in excellent cond.  
519-733-2760

1330-503

DRILL RIGS  
BOTH NEW AND USED

**SIMCO DRILLING EQUIPMENT**  
1-800-338-9925  
WWW.SIMCODRILL.COM

1330-497

(2) GD Mayhew 1000, (4) hyd. jacks,  
5x6 GD pump, 32' Derrick, 23' kelly,  
Ford diesel, extra nice, clean rig,  
starting @.....\$29,000 OBO  
218-384-3458

1330-252



Failing 2500SE Single drum drawworks  
with air clutches, equipped with Foster  
catheads, 18" Failing rotary table, powered  
by Detroit 671 engine, 750 Allison  
transmission, with telescoping mast  
mounted on T/A trailer.  
Call 325-653-3433

1330-948

Core drills & exploration drills, LF70,  
LM55, LM75, LM90, LY44, CS500,  
CS1500, CP650 (RC), Foremost/Mobile  
B3300 HSA trailer mounted.  
Anderson Equipment Sales and Service, Inc.  
andersondrilling@aol.com  
(801) 243-4480

1330-1216



Totally rebuilt IR TH100A drill rig, mtd. on  
a pre-emission 2005 International tri-drive,  
Cummins ISX 565 hp engine, 18-speed  
transmission, approx. 171,000 miles  
(275,000km). Angle package 46' derrick,  
20-rod carousel for 4½" pipe. IR HR2  
1250/350 compressor, 18,000 lb Braden  
main winch, 12,000 lb aux. Braden winch,  
25 gpm Bean water injection pump, 7-gallon  
DHD lubricator. All new sheaves (18"  
crown sheaves), rebuilt cylinders, new  
wire rope, all updated hydraulic system.  
Rig inspected and certified.....\$700,000  
Darrel Skinner (403) 809-2700  
Monument Machine Shop Ltd.  
Calgary, AB, Canada

1330-1082

Foremost / Barber, dual rotary, Sullair  
1150/350, 600 hp deck engine, DR-24  
truck mtd., good condition.....\$545,000  
208-771-0770

1330-1211

Rigs  
1330



**SCHRAMM T130XD SET-UP FOR  
LARGE DIAMETER AND FLOODED  
REVERSE WATER WELLS**

CALL JOHN LITTLE 610-344-3113

1330-193

1982 T685 DHH Schramm on 1981 GMC Brigadier w/850-350 GHH comp., 12V71 twin turbo Detroit diesel. Asking..\$150,000  
636-937-4800

1330-1208



**2009 Klemm KR806-3D Drill**, serial number 66263, 2617 hours, double head.....\$350,000  
**Lang Equipment 801-554-2419**

1330-1027

1980 T66H Schramm on 1979 Mack w/850-350 Sullair, 8V92 Detroit, bigger hyd. rot. valve bank, King swivel on rot. gearbox. Asking.....\$125,000  
636-937-4800

1330-1208



**1995 SD-300**, 357 Peterbilt w/3406 Cat® power, 4x3 mud, 750/350 air compressor, 4 cylinder injection pump.  
**2003 GEFCO 1250**, 330 Peterbilt, 5x6 mud, development air compressor.

For a listing of our preowned rigs, go to: [gefco.com/sales-dealers/preowned](http://gefco.com/sales-dealers/preowned) or call us at (800) 759-7441

1330-809

**2007 Schramm 130**, SN J1300186, with rod launcher, many extras.....\$800,000  
**2004 Schramm 130**, SN J1300018, 4843 hours, 8000 miles, non-tilt head, model 1350/350 - 1150/500 Sullair.....\$450,000  
**2006 Atlas Copco RD20**, S/N 21053 6000 hours.....\$700,000  
Call Alan Lang: 801-554-2419

1330-1027

**71 SpeedStar**, like new 1976 year model w/lots of tools.....\$50,000 OBO  
**Davey rotary small drill**, w/some rods and bits.....\$20,000 OBO  
Call Richard 435-559-9357 for more info.  
Package deal available

1330-1166

**East West Machinery**  
Ph (949)722-8643 (Corp Office)  
Email: [sales@ewdrilling.com](mailto:sales@ewdrilling.com)  
Ph (570)966-7312(PA yard/office)

**We Buy & Sell Drill Rigs&Equip**

Water Well, Oil & Gas, Auger, Core, Blasthole & Mining, Exploration Drills. Air Compressor, Mud Pumps, Parts, Engines, Drill Pipe, Hammers & Bits



**\*All Makes & Models Available\***

IR / Atlas Copco, CAT, Cummins, MTU Schramm, Driltech, REICHdrill / CP, GD, Speedstar, Simco, Mobile, CME

1330-124

**Fresh IR TH60 set up for mud rotary drilling**, 400 gpm 1000 psi GD triplex onboard, mtd on 2004 Kenworth w/Cat® C-15, in California.....\$325,000  
530-681-2000

1330-1196

**1983 track drill**, high-torque heavy hoist, 900/300 air.....\$120,000  
Call Jay - 406-261-6711

1330-857

**NE Drill Supply**  
northeastdrill.com

800-963-2466

**QUALITY NEW & PRE-OWNED RIGS**

**2015 REICHdrill Legend 4** (In stock)  
Mounted on 2016 Mack Granite 1070/375 airpack, C15 Cat® on deck.

**2011 REICHdrill T690**

Mounted on 2011 Mack Granite 1070/375 airpack, C15 Cat® on deck.

**2008 REICHdrill T690**

Mounted on 2008 Mack Granite 1000/350 airpack, Cat® 3406 on deck.

**2004 REICHdrill T690W**

Mounted on 2004 Mack Granite 1070/375 Sullair airpack, Cat® C15 on deck.

"ONLY Authorized REICHdrill® sales, service, and parts dealer in New England."



We stock REICHdrill® and CP Parts. New REICHdrill® style 4½" and 4" Drill Rod in Stock.

DENISON

Hydraulics

DYNEX

Fan Pumps • Head Motors • Main Pumps  
Hoist Pumps • Control Valves

We Ship Worldwide

NH: 603-878-0998

VT: 802-235-2466

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

1330-204

Screens  
1408



**New Product Announcement**

**SCHUMAPROBE**

**Porous Polyethylene Sparge Screens**  
Pipe Size: 1" ID and 2" ID  
Pore Size: 20 Micron and 40 Micron Available  
Length: 24" Standard  
Length: Available Up to 60"  
Ends: Male X Female ASTM Flush Threads  
NPT and Sch80 Adapters Available

A Johnson Screens Distributor  
We Stock Geoprobe Compatible Supplies & Tooling  
Proactive Pumps Master Distributor

Toll Free 1-888-240-4328

Phone: 1-609-631-8939 • Fax: 1-609-631-0993  
[ectmfg.com](http://ectmfg.com) • [proactivepumps.com](http://proactivepumps.com) • [torqueplug.com](http://torqueplug.com)

1408-719

C  
A  
L  
L  
8  
5  
0  
-  
5  
4  
7  
-  
0  
1  
0  
2

Stolen  
1445

**STOLEN DRILL RIG!!**

STOLEN



STOLEN

1990 SpeedStar SS25K drilling rig, tophead drive, mtd. on 1990 Int'l VT100 w/Cummins 400, 10-spd. trans. TRUCK VIN #44KHM6488LWZ17237  
If anyone has any information please call: 818-956-5231 or visit: [www.pacificcranes.com](http://www.pacificcranes.com)  
You may also contact: Crime Prevention Program @ 800-432-7257 ext. 823

1445-995

Trucks  
1540

[www.Trucks123.com](http://www.Trucks123.com)

**Knuckleboom Trucks**  
Single & Tandem Axle

**4x4's**  
3-5 in Stock Everyday

**100+ units in stock**

OPDYKE INC. SPECIALIZED TRUCKS & EQUIPMENT SALES (877) 224-8834  
3123 Bethlehem Pike Hatfield, PA 19340

1540-709

**ASHER** (855) 885-2295  
SINCE 1974 Call Us TOLL FREE! We Ship Nationwide!

**6x6 Knuckleboom & Stinger Crane Trucks**

#15120-66 - Manitex 104 ft. Reach with Aerial Remote Controls  
#14997-66 - Zeligson 6x6 Knuckleboom Winch Truck \$17,500

250+ Specialized Trucks  
Jobsite Delivery Available

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

1540-1159

(30) Freightliner Trucks 6X6, 60 Series Detroit, HT740, Allison Trans., Rockwell Axle, 68KGWV, 315/80 R22.5 Michelin, Low Miles  
SEMCO, Inc.  
800-541-1562

1540-135

Wanted  
1705

**QUICK CASH MONEY**  
Paid for Drill Rigs, Pump Hoists, Mud Pumps, Drill Pipe, & Bits.  
RENE HENDON Tel: 281-260-0880  
1705-120

Water Level Indicators  
1710

**Reliable Water Level Indicators** proudly made in the USA. Various lengths & scales available, selectable buzzer/light indication & sensitivity control. Economical repair service.  
**Waterline Envirotech Ltd.**  
[www.waterlineusa.com](http://www.waterlineusa.com)  
360-676-9635

1710-188

**CONTROL EVERYTHING** HARWIL

**CHEMICAL FEED PUMP CONTROL**  
Activates chemical feed pump with water flow.  
Includes switched and always-on receptacles.  
Available for most pipe sizes.

**Tested - Proven - Best**

**WIRELESS CONTROL**  
Wireless Bridge between switch and device - Range 1000 feet.  
Eliminates cost of wire, installation and maintenance.  
Ideal for rainwater capture, tank level control or pump control.

**HARWIL.COM**  
(805) 988-6800 sales@harwil.com

1710-1179

Water Trucks  
1730

**NORTHWEST FLATTANKS**

Let us custom build your next Flattank Support truck.



**For Sale**

**2006 Peterbilt 378, C15 Cat® HP 475,** mileage 250,905 transmission, 18-spd engine brake, air trac suspension, ratio 4:10, rear axle weight 46,000 lbs, front axle weight 20,000 lbs, 4-way lockers.

New V bottom flattank (2000 gallons) 21' of usable bed, 35' 1" fuel hose reel w/auto nozzle. 12-volt 20 gallons per minute fuel transfer pump. 2 row mid deck stake pockets, w/20" abovedeck height tube stakes - 4 each side. Torch locker passenger side vertical toolbox, storage hooks, 1 shelving, w/50' torch reel, 3 removable shelves in front driver vertical toolbox & 1 in torch box. Towing air & wiring to rear 45-ton pintle & receiver hitch type. New IMT 7500 - 22' reach IMT wireless radio crane.

Please call for price: lots of information and specs on our new web site.

Contact Steve: 406-466-2146  
406-544-5914 Cell  
steve@northwestflattanks.com  
[www.northwestflattanks.com](http://www.northwestflattanks.com)

1730-665



'94 Int'l 8100 6x4 L10 Cummins 10-spd transmission, 316K, 1800-gal Rose-Wall water tank, inside tank coated to stop rust, 4-underbody toolboxes, crane rdy, 50-gal fuel tank w/electric pump.....\$33,000  
Excellent Condition 810-441-4644

1730-1199

WWD wishes our WorldWide SUPER MART™ advertisers and shoppers a thriving and **Happy 2016!**

Water Trucks  
1730

Well Plugs  
1753

Well Rehabilitation  
1755

Rose-Wall Mfg. Inc.



Rose-Wall puts a new "tilt" on the water tank business!



We can build any shape or size  
Please call for a custom quote  
**1-800-321-1541**  
rose-wall.com

1730-390



2005 International Model 8500 with 530 Int'l engine and 10-speed trans. New 2015 service body with 2000 gallons of water and 200 gallons of fuel w/fuel transfer pump.

All service bodies are new with 1/4" construction baffled every 18", & coated.

**Gordon Ballard**  
**Ballard Drilling Co., Inc.**  
**Wadley, Alabama**  
**256-825-5871**

E-mail: gballard501@msn.com

1730-785

## Custom Fabrication for the Environmental Monitoring Well Industry

- Vented Caps
- 3/4" to 8" EX-Caps
- Plugs & Caps
- Sewer Caps
- Vault & Manhole
- Protective Risers
- Well Packers
- U.S. Patent Protected



**EDP**  
Enviro Design Products

wwatts@gate.net 386-256-3441  
www.envirodesignproducts.net

1753-1119

## TORQUER™ Professional Locking Well Plugs

Sched. 40/80

1/2", 3/4"

1", 1 1/4"

1 1/2", 2"

2 1/2", 3"

4", 5", 6"

coming soon: 8"



- Domed top
- No metal parts
- Padlocks or safety lock out tags
- Most sq. inch of gasket power
- Bright safety orange color
- Vapor extraction convertible
- Vented Plug Option
- Low Cost

U.S. Patent Protected  
[www.torquerplugs.com](http://www.torquerplugs.com)

1753-244

### Why Classified?

Whether you are looking to buy or sell, the classified section is a great place to start!  
**Sellers** - Did you know that classified ads are among the most cost-effective methods to sell your products? You can place several ads in different sections for a very reasonable cost. You don't even have to create the ad! Just provide basic information and a photo and **WWD** will prepare the ad for free. We even place the ad on our Web site for free.

**Buyers** - Are you looking for a great deal? Classified ads are a great place to find equipment and products at reduced prices. From auctions and bits, to cable tools, drill pipe, hammers, packers, rigs, and wire rope, you can find it here in the **WorldWide SUPER MART!**

So, do classified ads really work? You tell me. You just read this in the classified section!

**JET-LUBE**

## Eliminate Iron Bacteria!

**Utracid™**

**DESIGN WATER TECHNOLOGIES**  
A JET-LUBE COMPANY

**One time...Every time!**

800-JET-LUBE | 800-538-5823  
[www.jetlube.com](http://www.jetlube.com)

**JET-LUBE**

## Eliminate Coliform!

**STERILENE**

**DESIGN WATER TECHNOLOGIES**  
A JET-LUBE COMPANY

- NSF Certified
- No premixing to control pH
- No corrosive fumes
- No corrosion
- No shelf life

800-JET-LUBE | 800-538-5823  
[www.jetlube.com](http://www.jetlube.com)

CALL 850-547-0102

**Well Screens**  
1760

**Stainless Steel - Carbon Steel  
Galvanized Steel - Wedge-Wire**

**Well Screens & Slotted Pipe**

18102 East Hardy Road  
Houston, Texas 77073 USA  
Phone: 281.233.0214  
Fax: 281.233.0487  
**Toll-free: 800.577.5068**  
info@alloyscreenworks.com  
www.alloyscreenworks.com

**ALLOY SCREEN WORKS**  
▲▲▲ A division of Alloy Machine Works, Inc.



1760-378



**Environmental  
Manufacturing,  
Inc.**

8887 Green Valley Drive  
Manhattan, KS 66502

**PVC Pipe, Fittings, and  
Supplies for  
Monitoring/Remediation  
Applications  
Worldwide**

**Toll Free 888-587-0807**  
**Fax 785-539-1349**  
**www.emipipe.com**



1760-156

**Wire Rope**  
1785

**WIRE ROPE!**

Made in U.S.A.

**Drill Line  
Sandline  
Non-Rotating  
Hoist Line**

**800-523-5760**  
540-635-7753  
Fax 540-635-6352

**TRIDENT TOOL INC.**  
**tridenttool.com**

1785-1200

**Too Late to Classify**  
2003

**Mobile 56** auger rig mtd. on 1998 F-800 Ford, both eng. are diesel, all tools, etc. Very good cond., need to sell due to age.. **\$13,000**  
**309-243-9027**

2003-1203

**WorldWide Drilling Resource® Classified Ad Form**

Phone: 1-850-547-0102 • Fax: 1-850-547-0329  
E-mail: [Brenda@](mailto:Brenda@worldwidedrillingresource.com) or [Kathy@worldwidedrillingresource.com](mailto:Kathy@worldwidedrillingresource.com)

The only drilling magazine reaching the most of your potential buyers ~ place your classified ad with **WDR**. Visit our Web site [worldwidedrillingresource.com](http://worldwidedrillingresource.com), e-mail [Brenda@](mailto:Brenda@worldwidedrillingresource.com) or [Kathy@worldwidedrillingresource.com](mailto:Kathy@worldwidedrillingresource.com), call 850-547-0102 for more information, or fill out the form below. Fax: 850-547-0329 or mail to: PO Box 660 Bonifay, Florida 32425-0660. **Form Instructions:** Please TYPE or PRINT your ad exactly as you would like it to appear (include all punctuation marks). The rate is \$9.00 per line; normally 32 characters makes one line. **Note:** Bold type is considered 2 spaces. Multiply rate x # of lines to find your total charge. Deadline is the 1st of each month.

Ad Text: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Special Instructions: \_\_\_\_\_

Company Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone # \_\_\_\_\_

Fax # \_\_\_\_\_

Card # \_\_\_\_\_

Name on Card \_\_\_\_\_

Exp Date: \_\_\_\_\_ CCV # \_\_\_\_\_

**Minimum Charge is \$36.00 - Call 850-547-0102 For Display Classified Rates**

**We accept:**




**\$15,000 SEMCO Pump Hoist**, 60,000# 52' telescoping hoist, air shift PTO, direct-mount pump, 2-speed winch w/grooved drum, 2000' sandreel w/disc brake, aux. hydro valves, hydro cylinder, hydraulic oil cooler, 12V DC, mounted on 2016 Kenworth auto truck w/19' custom steel flatbed, toolboxes, 30' triple line block, 225 amp welder, air reels, torch setup. Also comes with extra tools and down hole camera..... **\$195,000**  
**Rick Dreiling 970-567-7246**

2003-1217

**Have something to sell???**  
Fill out this form or E-mail us:  
**kathy@**  
**brenda@**  
**worldwidedrillingresource.com**



# Welcome to the Change.



Breaking out of routine is tough as no one likes unnecessary risk. But at Shakti you can be confident as we leave nothing to chance. **TOP QUALITY, BEST SERVICE, MOST COMPETITIVE PRICES, REWARD PROGRAMS.....** And with all this we promise you opportunities to **DOUBLE** your profit margin.

**GIVE US A CALL AND OUR EXPERT WILL VISIT YOU AT YOUR PLACE TO EXPLAIN HOW YOU CAN INCREASE YOUR PROFIT MARGIN TO 2 TIMES.**

So, go ahead and ask for SHAKTI Distributorship today by giving us a call.

Phone: 407-574-4001, 407-574-2797.



## SHAKTI PUMPS USA LLC

740 Florida Central Pkwy, Ste 1008 Longwood, FL 32750, USA.  
Email: shaktiusa@shaktipumps.com, ashish@shaktipumps.com  
Web: www.shaktipumps.com



# America West Drilling Supply



Check out our RC Hammers,  
Well Sounders, and Cameras.

Whether you are in Water Well, Construction, Mining,  
Foundation, Exploration, Mineral, or Environmental,  
we have all of your drilling needs; local and international.

For all your drilling products and supplies, visit us online:

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

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

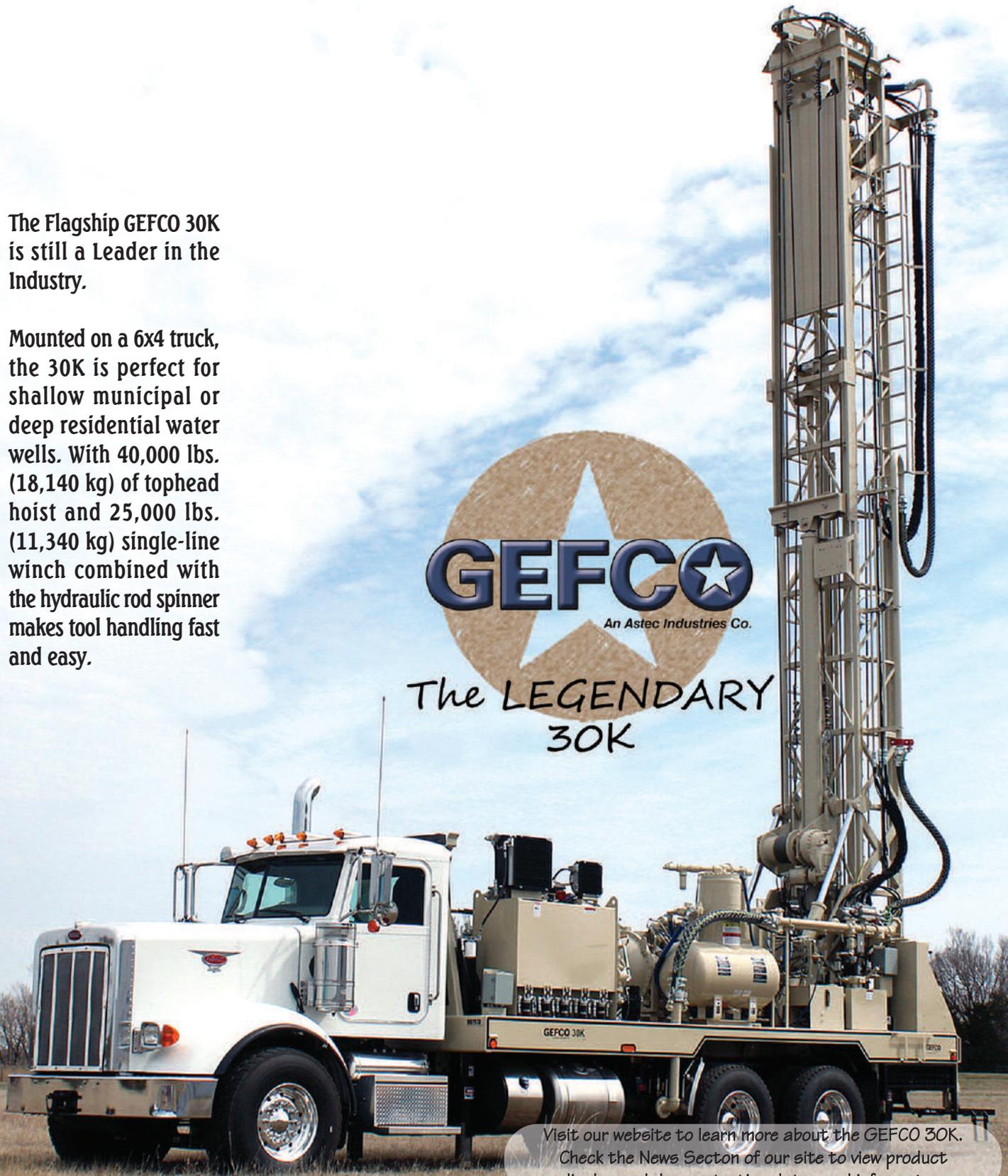
(800) 800-8444 • (775) 355-1199 • [sales@awds.com](mailto:sales@awds.com)

The Flagship GEFCO 30K is still a Leader in the Industry.

Mounted on a 6x4 truck, the 30K is perfect for shallow municipal or deep residential water wells. With 40,000 lbs. (18,140 kg) of tophead hoist and 25,000 lbs. (11,340 kg) single-line winch combined with the hydraulic rod spinner makes tool handling fast and easy.



The LEGENDARY 30K



Visit our website to learn more about the GEFCO 30K. Check the News Section of our site to view product display and demonstration dates and informaton.

**GEFCO, INC. an Astec Industries Company**



2215 South van Buren • Enid, OK 73703 • Phone: 580-234-4141 • domsales@gefco.com • intsales@gefco.com • www.gefco.com

*WorldWide Drilling Resource®*

JANUARY 2016

79

Reply to: **WORLDWIDE Drilling Resource**  
PO Box 660 • Bonifay FL 32425-0660  
850-547-0102

PRSRT STD  
US POSTAGE  
PAID  
ATLANTA GA  
PERMIT  
NO. 3592



**S8,000H SEMCO Pump Hoist, 36' derrick, hot shift PTO direct-mount pump, remote control, 22,000# triple line option, 1,500' sandline w/motor and disk brake, hydraulic oil cooler, pipe racks, 108 Model service body, HD bumper and receiver hitch, factory mounting, painted white and blue, mounted on customer's Dodge 5500.**



**Widner Electric Industrial  
PO Box 126  
Milton Free Water OR 97862**

**SEMCO INC.**

E-mail:  
[semcopumphoist@yahoo.com](mailto:semcopumphoist@yahoo.com)  
[www.SEMCOoflamar.com](http://www.SEMCOoflamar.com)

**CALL OUR TOLL-FREE  
NUMBER: 800-541-1562**

**PO Box 1216  
7595 US Hwy 50  
Lamar CO 81052-1216  
719-336-9006  
719-336-2402 Fax**

