



February 2012

NEW Members

Full
Enermech Ltd, UK

**RAS Rohrleitungs-
und AnlagenService
GmbH & Co. KG,
Germany**

**Alchemy Oilfield
Services Ltd, UK**

**Hunter McDonnell
Pipeline Services,
Canada**

Associate
**Dow Formulated
Systems, UK**

Individual
**Jusuf Sutomo,
Indonesia**

Pigging Products & Services Association

PO Box 30, Kesgrave,
Ipswich, Suffolk,
IP5 2WY UK

Tel: +44 1473 635863
Fax: +44 1473 353597
ppsa@ppsa-online.com
www.ppsa-online.com



Pigging Industry News

the newsletter of the Pigging Products & Services Association

THE PRESIDENT'S LETTER

by Alan Sweeney, Weatherford P&SS

I am pleased to report that our membership continues to grow and today stands at 114. In reflection, 2011 has been a year where the association has stepped out and tried a few new concepts which we hope brought benefit to the membership. Our attendance at the PPIM conference in Prague, and our move to social networking on Linked In and Twitter have proven to be a great success.

Our Aberdeen seminar held on the 16th November 2011 at the Marcliffe Hotel was a sold out affair. A healthy attendance witnessed at total of eight papers throughout the course of the day which covered a wide range of topics. My thanks go out to all the speakers for taking the time to write and present these papers. I know only too well how time consuming this can be. So thank you everybody for your contribution. Mark your calendars as the next seminar is scheduled to be held on 14th November 2012 at the same location.

The association's AGM will be held on Tuesday 7th February at the Marriott Westchase Hotel in Houston, Texas. This is prior to the PPIM pigging conference and exhibition and an election for one USA director and one director from the Rest of World will take place. I strongly encourage you to attend the AGM and show your support for the association. Our annual golf tournament will be held the day before. This event has grown in popularity over the years and is now very well attended by both our membership and customers alike. Our many thanks go to Gerri Ayers for organizing the day and for always making it such a huge success. The golf tournament will take place at the Black Horse Golf Club, Houston. All are welcome to make up teams and to sponsor the event. To find out more, please visit our web-site www.ppsa-online.com and follow the

PPSA Golf tournament link.

I am pleased to have served as your president for 2011 and would like to take this opportunity to thank Diane Cordell for her hard work and dedication to the PPSA, for without her efforts the association would not continue to flourish as it does today. She has certainly made my life very plain sailing. Thank you Diane!

In closing, I would like to remind all of you that the association is there for you and will only continue to be a success if you are actively involved. So please take the time to attend the AGM and put forward ideas that will continue to help make the association grow in the future. ●



The PPSA seminar 2011, Aberdeen, UK

STATS 20" Tecno Plug™ Isolation in North Sea

STATS Group were approached by AMEC to propose an isolation solution to allow maintenance and replacement works on three maintenance valves and one ESD valve on a 20-inch gas import line onboard the North Everest platform.

After a detailed site survey and piggability study, STATS proposed the use of a tethered Tecno Plug™ pushed by stem bar to location from a temporary launcher as the best solution. As the pipeline had no pigging history, this method was considered as the least risk laden option rather than pigging a remotely operated plug from the pig trap. This alternative method was proposed based on detailed analysis during the Front End Engineering process including the piggability study which revealed potential issues for the route of the pigging run. These issues could have prevented the Tecno Plug™ from reaching the desired set location.

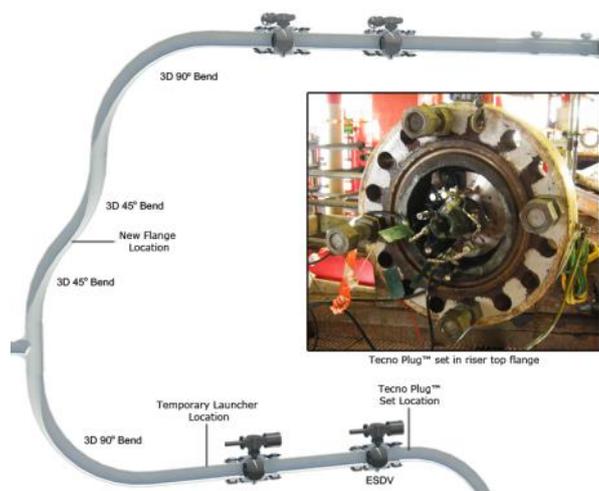
The detailed Front End Engineering process includes generation of a project design premise, pipe stress analysis, piggability study, FMECA, operational procedure and risk assessment. This package produced by STATS identifies and mitigates operational risk and reassures clients by providing detailed analysis of the internal conditions and geometry of the

pipeline prior to carrying out the isolation, guaranteeing the optimum solution is always delivered.

Prior to carrying out the isolation the pipeline pressure was reduced to 6 barg. With the ESD closed and sealant injected, the maintenance valve was then closed to provide a temporary pipeline isolation, this allowed the temporary launcher to be installed inboard of the ESD valve and a team of STATS technicians to break out the piping. A weld repair scope was also required and the STATS team removed the first 90° bend with clam shell cutting tools.

STATS also provided gas bags to act as a vapour barrier while a new 1500# flange was welded into the line. The new flange was then pressure tested using a STATS Flanged Weld Test Tool before reinstating the new bend and launcher valves.

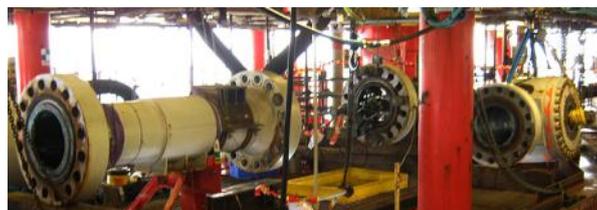
With the temporary launcher now in place and fully pressure tested the valves were opened and the Tecno Plug™ was deployed into position outboard of the valves and hydraulically set to provide pipeline isolation. Once set and monitored the stem bar was disconnected and the valves were replaced. As the



North Everest Pipe Layout

pipeline pressure was only 6 barg, the Tecno Plug™ was installed in the reverse direction, this provided full isolation while also providing a test boundary to pressure test the integrity of the reinstalled valves. A full pressure test at 208 barg was then conducted between the temporary launcher and the Tecno Plug™ before the plug was unset and recovered back into the launcher.

The valves were then closed and temporary launcher removed allowing the pipeline to be reinstalled and returned to operation. ●



ESDV being rigged out



PIPELINE PIGGING AND MAINTENANCE EQUIPMENT

FOR INFORMATION PLEASE CONTACT US VIA:

EMAIL: general@inpipeproducts.co.uk

TELEPHONE: +44 (0)1748 834 577



PII's ILI of 'unpiggable' pipeline in Australia

APA Group is Australia's largest natural gas infrastructure company, operating more than \$8 billion of gas transmission and distribution assets across Australia, and delivering over half of the country's gas supply. APA's Roma to Brisbane Pipeline transports natural gas 438 km from Roma to the Brisbane market, with connections to regional centers along the route. The pipeline's capacity has increased five-fold since its construction.

In March 2009, **PII Pipeline Solutions** (PII) was at a sales visit at the receive site of the 12" Roma to Brisbane Metro pipeline when an APA integrity engineer pointed to an offshoot and said, "what about this bit of pipe?" The segment had been excluded from the project briefing because it was thought to be too small and complex for in-line inspection. Australian regulations allow alternative integrity systems where pipelines are considered to be "unpiggable".

The segment of 8-inch pipe was an outlet from the mainline running to a distribution center about 2.6 km away. APA had been unable to inspect the pipeline using ILI since commissioning 42 years earlier and integrity checks were difficult because it ran along the shore of the Aquarium Passage, with a number of nearby recreational reserves and nature parks on the Bulimba Creek and the main Brisbane River. While its integrity was being managed, APA was not aware of any viable ILI options for it.

Knowing how light and agile the new MagneScan tools are, PII's in-field project leader snapped a couple of digital photos and emailed them to an Application Engineer in Cramlington, UK, with a note saying "Can I pig this?"

Armed only with the photos, the engineer had no idea what kind of space restrictions were in the surrounding area that might prohibit launch and receive traps. He said, "That didn't matter. I knew what the 8-inch tool was capable of. It's 1.6 m long and can easily negotiate 1.5D back to back bends. So I saw an opportunity to use an existing flange to get the tool into the line."

Working on the assumption that the inspection was required immediately and the pipeline could not be taken out of service, he designed a stopple solution to divert flow and enable installation of a new 8" launch trap and connections at a flange in the existing pipework. This conceptual design offered flexibility to accommodate the variations on the pipeline. Within three days he sent rough renderings of his designs to Brisbane with an explanation of the concept and absolute minimum space requirements for launch and receive activities. The APA engineering team was pleased. They decided to avoid the stopple element by waiting to take advantage of a planned maintenance shutdown the following year. APA completed the necessary drawings of the engineering changes and pipework modifications in adherence to all country and company guidelines.



PII Pipeline Solutions' new MagneScan

The MagneScan inspection took less than three days, including all prep work, cleaning and disassembly – with first-run success. Preliminary findings were provided in 14 days, and the final ultra-high resolution report 46 days later – 10 days early.

Fortunately, the thorough evaluation revealed no anomalies, which confirmed APA's confidence that the segment could remain safely and productively in service for many years to come without harm to the fragile river environment or having to incur the costs and logistical implications of hydrostatic testing.

For APA Group, this project's success illustrates one of the benefits of working with the PII Pipeline Solutions team. There are also significant benefits for the pipeline industry as a whole. MagneScan has again proved that the traditional notion of unpiggable is no longer valid. It therefore opens the door of opportunity for greater pipeline integrity and environmental safety than ever imaginable in the past or by less advanced ILI tools. ●

KNAPP POLLY PIG, INC.
REMOVES TOUGH PARAFFIN
WON'T DAMAGE THE PIPE WALL
BLACKBELT
KNAPP'S BLACKBELT PIG IS PATENTED
1209 Hardy St. - Houston, TX 77020 Phone: 713-222-0146 - Fax: 713-222-7403 - e-mail: knapp@pollypig.com

DESIGNED FOR DEEPWATER PIPELINES
ULTRA-SEAL
KNAPP'S ULTRA-SEAL PIG IS PATENTED

P2D's 'smart' approach to pipeline cleaning

Pipelines 2 Data (P2D) have developed and successfully launched a range of innovative ATEX certified technologies that add intelligence to pipeline cleaning removing the mystery, eliminating uncertainty, mitigating the risk of a failed inspection or a blocked line and maximizing throughput.

P2D's field proven Pipeline Environment Tools (PETs), Debris Mapping Tools (DMT's) and or Pipeline Profiling Tools (PPT's) can be used to measure, monitor and record pig performance providing a real time view on the effectiveness of any mechanical cleaning program. The same technologies can also be applied to chemical cleaning performance management.

The ATEX Certified PET, DMT and or PPT, are typically used ahead of pipeline cleaning to provide a base line indication on the internal cleanliness. The DMT and PPT provide information on debris thickness (wax, scale, sand, black powder etc), location, orientation and volume. The initial data collected would be used as the basis for pig selection and to determine the pigging program. A run mid-way through the programme is used to assess the effectiveness of the cleaning pigs. The program and or pigs being used can be modified if required depending on the results. A final run at the end of the program is used to confirm the required standard of cleanliness has been achieved. Often this approach is used to qualify line cleanliness

ahead of an inline metal loss inspection eliminating the risk of a failed inspection run as a result of a dirty pipeline.

The PET is a multi-channel data logger that can be fitted to the operator's production or cleaning pigs or can be supplied with its own carrier pig. The PET measures and records the pipeline environment along with the pig's ride characteristics during the run. The 'bolt on' module consists of pressure and temperature sensors that are used to measure and record pipeline pressure and temperature profiles. A differential pressure (DP) sensor is used to measure DP across the pig enabling wall thickness changes and areas of debris build up such as wax, scale and sand etc. to be identified. A three axis (XYZ) accelerometer measures the pigs ride characteristics as it travels down the pipeline i.e. roll, pitch along with vibration. Two odometer assemblies record the distance travelled by the pig allowing pin pointing of pipeline anomalies. Pig velocities and product flowrates are also provided by the odometers.

When installed on board cleaning, scraper or more specialised pigs it will give a pipeline ride profile that provides an accurate indication on the pipeline's cleanliness and geometric configuration. In addition, when fitted on a gauging pig the data recorded by the PET will identify exactly where any gauge-plate damage occurred in the pipeline. i.e. 'smart gauging'. The DMT, can be fitted to an operator's production pig or it can be supplied as a standalone unit. It uses the same electronics module as the PET and

gathers the same data set. However in addition, depending on the nominal pipeline diameter it can accommodate up to 96 DMT sensors. The DMT sensors provide 360° coverage, are in direct contact with the pipewall and are used to accurately measure 'lift off' as it rides over hard or soft pipewall deposits or debris. The DMT will identify the thickness, linear location, clock position and the volume of debris deposited along the pipeline.

The PPT will provide a comprehensive pipeline profile, measuring and recording pipeline operating parameters, such as pressure, temperature, velocity etc. debris mapping and a detailed geometry (calliper) survey. It is a combination of the PET and DMT technologies with the addition of a geometric survey capability. It uses the Advanced Geometry Tool (AGT) as the lead module or tow pig. Fitted with an array of calliper sensor arms, providing 360° coverage, in addition to the above the PPT will identify the location, orientation and measurement of dents, ovality, bends and diameter changes. Comparison of the AGT and DMT data sets provides clear differentiation between pipeline anomalies or features and debris or pipe wall build up. This provides the operator with a comprehensive and detailed pipeline profile survey.

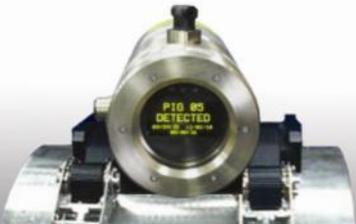
The option of a Ring Laser Giro can be added to the DMT, AGT or PPT to provide accurate pipeline mapping and strain analysis.

The above range of technologies are widely used by several North Sea operators. ●

Online Electronics Ltd.
Online House
266 Auchmill Road
Aberdeen
AB21 9NB
+44(0)1224 714714
info@online-electronics.com
www.online-electronics.com

UK - SINGAPORE - UAE
BRAZIL - USA

Non Intrusive Technology...



- Intelligent Technology
- ATEX Solutions
- Easy Installation
- Avoid Downtime
- Subsea
- Pipe in Pipe
- Above Ground
- Underground



TDW's automated combo pigging system

T.D. Williamson, Inc. (TDW) has introduced an automated pigging system engineered specifically for wet gas and other pipeline systems in need of routine pigging to prevent liquid hold-up that limits flow. Reducing the labor required to launch a pig, the SmartTrap[®] Automated Combo Pigging System releases spherical pigs one at a time at pre-determined intervals using a dual launch pin system. The system allows multiple spherical pigs to be loaded at one time and it



TDW's SmartTrap[®] Automated Combo Pigging system

can also be used to launch a combination of standard cleaning pigs, batching pigs or inline inspection tools. Its flow-through barrel design eliminates the need to open / close valves to conduct a launch, increasing valve life and

reducing maintenance cost. The system also reduces gas releases to the atmosphere and explosive environments, and it may be used with specially designed multi-spherical pig receivers. ●

VKVC locates and removes stuck pig

Veekay Vikram & Co (VKVC) was called in to locate a stuck pig in a 28", 160km long pipeline. During construction sand had become lodged in the pipeline due to flooding. Subsequently during pigging, prior to hydro-testing, a cleaning pig became stuck in the pipeline. The contractor tried locating the pig by sectionalizing the pipeline and after almost 4 weeks the stuck pig had not been located.

VKVC deployed their crew for the assignment and within 96 hours the stuck pig was located, the position identified, the pig retrieved and removed from the pipeline and pipeline repair work was carried out. The client was able to resume work without any further hitch.

VKVC used a standard VKVC 4 Sealing disc Bi-Directional Pig

with a small 3/8" bypass port arrangement. The Pig transmitter CD42:T1A was mounted on the pig and two antenna CD42:GPA and tracker unit CD42-K14 were installed. CD52: Non-Intrusive Pig signals were installed at Chainage 8, 16, 24, 32 near the receiver. A bi-directional pig was launched using an air compressor. Pressure and flow rates were recorded continuously and leap frog pig tracking procedure was employed. The pig passed non-intrusive pig trackers installed on 8, 16, 24 km without any major pressure build up. The average travel speed of the pig was 1500 mtrs/hour. However after crossing CD52 installed on chainage 24, the pressure started to rise rapidly. No signal was detected on CD52 installed at chainage 32.

VKVC personnel now moved with the CD42: GPA antenna in perpendicular direction. The area was marked for excavation which was

completed within 24 hours.

The CD52 Pig Signalers was again employed and the position of the Pig locator transmitted marked on pipe. The length of pig was then marked on pipe, 300mm added for margin and pipe marked for cutting. The pipe coating was removed and pipe cut with acetylene. The pig was recovered at the exact location with 300mm margin as calculated.

The owner of the pipeline construction company congratulated VKVC and **CDI, USA** for a job well done within 96 hours of mobilization.



Pinpointing location of stuck pig ●



www.tdwilliamson.com



T.D. Williamson, Inc.
Pipeline Performance™

Serck Services supply Launcher Receiver to BP

Serck Services (Gulf) Ltd designed, manufactured and supplied a 42" Pig Launcher Receiver for in-line inspection of the "Supsa" export line, Georgia. The project was awarded to Serck because the overall proposal, particularly the delivery time, merged perfectly with BP's projected budgets and time scales, which were happily adhered to throughout the project.

Technical:

- Materials of construction: Normalised Carbon Steel
- Code of Construction : ASME SecVIII Div 1, 2007 Edition and Addendum 2009
- Design software: PV Elite
- Quick Opening Closure: 42" Bandlock 2, supplied by **GD Engineering**
- Overall Dimensions: Length 7.8m. Minor Barrel 36" dia. x 22mm wall. Major Barrel 42" dia x 25mm wall

With almost 40 years experience in the Middle East Serck Services offers design, manufacture and refurbishment services for a wide range of Launcher/Receiver applications.



Serck Services' Pig Launcher Receiver

Cottam Brush launches QUATTRO-FLEX brush

Cottam Brush Ltd are one of the longest trading companies in the global brush manufacturing industry. Established in 1858 the company has gone from strength to strength, specialising in the design and manufacture of cleaning and inspection brush solutions for the Pipeline Maintenance Industry.

After more than 12 months of development Cottam Brush will be taking the wraps off the new QUATTRO-FLEX pipeline cleaning brush. The brush has been designed specifically for the North American market and will fit most existing brush cleaning pigs. Developed to provide improved cleaning and longer life than existing legacy products the QUATTRO-FLEX is a cost effective solution to rival the more expensive pencil brushes options.

CEO, Ben Cottam, commented "We've had a dedicated team working on the QUATTRO-FLEX for about a year. The brush has been rigorously tested and we're confident that customers will realize efficiency and performance benefits when they choose the QUATTRO-FLEX".



Cottam Brush's QUATTRO-FLEX pipeline cleaning brush

Jee Ltd shortlisted for Queen's Award

Aberdeen-based subsea engineering experts **Jee Ltd** is pleased to announce it has been shortlisted for The Queen's Awards for Enterprise in International Trade. "I am very proud that we have got to this stage for this prestigious award," said Trevor Jee, Managing Director. "British engineering is second to none and it is significant that The Queen's Awards for Enterprise recognise companies in our industry. "I insist on very high standards. This shortlisting is testament to the knowledge, commitment and drive of my staff and proves our international strength – not only in the subsea projects we deliver in but also in the high-quality training we provide, worldwide, year-round. To be shortlisted is a great achievement. I am now looking forward to the winners being announced in April." ●

Greene's Energy Group Acquires Synergy Services

Greene's Energy Group (GEG), a leading provider of integrated testing, rentals and specialty services, has acquired the assets of Houston, Texas and Magnolia Springs, Ala. based **Synergy Services** from owner Mark Mattox. The acquisition will broaden the offerings of GEG's Pipeline Division and many of its drilling and production base locations. **Greene's Synergy Services** will offer chemical cleaning – including

Outstanding Pig Tracking

For accurate, real time location and tracking!

Call: +44 (0) 1642 375500 or Email: tracerco@tracerco.com

www.tracerco.com



patented chemistry and processes; large volume product separation units; mechanical cleaning equipment; and other support equipment for cleaning various types of pipe, vessels and facilities. The business will report to Vice President Pipeline and International Business, Tom Sawyer. "We are elated that the opportunity arose to purchase such a well-respected chemical cleaning and service company that offers patented "green" custom chemical solutions," said Sawyer. "Adding this in-house capability fits well within our Pipeline Division and follows the strategic growth plan outlined for the division and other GEG upstream and downstream businesses." Oil & gas producers, pipeline operators and refineries are the beneficiaries of these patented chemicals and cleaning processes by means of improved through-put of product in pipelines, enhanced performance of refineries and increased efficiency of injection and production at the well site. "This is a great business with excellent products that the industry needs. Synergy will customize a solution based on analysis of the

problem using proven combinations of chemicals (patented and otherwise), tailoring the solution to maximize the results," said Vilyus. "Ultimately, the customer will benefit with better process and asset efficiency, hence lowering operating costs and increasing revenues." ●

MACAW Engineering's new global headquarters

On their 15th anniversary of being in business, the Duke of Northumberland officially opened the new global headquarters of **MACAW Engineering**, on the prestigious Quorum Business Park in Newcastle Upon Tyne, UK. MACAW Engineering is a leading independent engineering consultancy, working closely with global operators of oil & gas production facilities, pipelines and utility systems to reduce risk, maintain integrity and extend the service life of client assets. Situated in the North-East of England in a region renowned for its expertise in pipeline engineering and integrity management, MACAW Engineering is ideally positioned to serve its clients world-wide, from

Aberdeen to Australia. MACAW Engineering General Manager Dr John Healy said "This is a very exciting time in the growth of MACAW Engineering, with a real pick-up in new business. Established in 1996 and having grown from 18 people in 2006 to 58 in 2011, these new facilities will support the predicted rise in staff to 80 engineers by 2013". ●

Inline Services signs agreement with P2D

Inline Services has signed a reciprocal agreement with Aberdeen-based **Pipelines 2 Data (P2D) Ltd**, to jointly develop technology for pipeline cleaning and to introduce the full range of both companies' technologies to their respective geographical territories. Over the past two years, they have jointly developed a Speed Control Pig for use in high flow gas lines, which has onboard intelligence to record and react to speed and other environmental pipeline conditions. Inline has also introduced P2D's pigging management software, data loggers and debris measuring technology to the U.S market. Inline has added new management, technical, sales

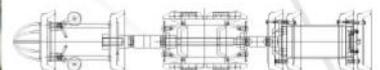
Get the Full Picture
 Ultrasonic crack detection reveals more than MFL and TFI technologies.

Weatherford
 weatherford.com/pss

Contact: pss@weatherford.com



3P Services » Your partner for special pipeline inspection applications and technologies«
 www.3P-Services.com



and shipping staff at its Tomball, Texas location and is expanding its facilities. Phase one is now complete, adding new offices and a clean room for electronic assembly, development and data analysis. The second phase, now underway, will increase their shipping department and warehouse space allowing for a greater inventory level to better meet customer demands. ●

TDW's ILI for EON

T.D. Williamson UK (TDW) performed an inline inspection operation for E.ON UK on the Blyborough to Cottam 24-inch diameter, 23.4 km pipeline, which transports natural gas from the National Grid Gas Blyborough NTS junction through E.ON UK's Blyborough installation to a pressure reduction centre located at the Cottam Power Station.

The inline inspection confirmed the integrity of the pipeline, and also revealed the presence of condensate and 'compressor oil' forming an organic mixture. E.ON therefore asked TDW to institute an extended cleaning program to remove this material from the pipeline. TDW used RealSeal® cups on the TDW cleaning pigs, a process that was so successful that it brought out more than the anticipated quantities of effluent. E.ON was so impressed with the efficiency of these cups that they are keen to use them for routine cleaning of this pipeline.

"We were delighted by how TDW was able to handle every aspect of this complicated inspection with perfect efficiency and careful attention to our specific needs," said Andy Skinn, Gas Pipelines Team Leader - Killingholme Power Station for E.ON.

A wide range of TDW expertise was brought to bear on this project, including surveying the site; specific pigging procedures; method statements and risk assessments; proving, gauging and cleaning; ILI data analysis; and Fitness for Purpose reporting. A number of high-resolution inspection tools were deployed, among them the deformation tool for geometric anomaly inspection, and the Gas Magnetic Flux Leakage tool for corrosion inspection.

Using resources and equipment from the T.D. Williamson Centre of Excellence in Swindon, and by partnering with sub-suppliers, TDW efficiently carried out the work with no disruption to the normal operation of the pipeline. By taking advantage of the gamut of TDW expertise, E.ON received an inspection with which they could feel completely confident. ●



Publisher:
Scientific Surveys Ltd
PO Box 21, Beaconsfield,
Bucks HP9 1NS, UK
Tel: +44 1494 675139
E-mail: jt@scientificsurveys.com

PPSA'S Book An Introduction to Pipeline Pigging

- Why pig a pipeline?
- How to pig a pipeline
- What is a pig?
- Cost-effectiveness
- Corrosion inspection
- Pig traps and launchers
- Industrial pigging
- In-line inspection
- Pipeline design for pigging
- Equipment description and uses
- Pigging for maintenance and repair
- Pig signallers, locators and trackers
- Specialist techniques
- Pigging management

Price: £21 UK / \$52 US elsewhere (inc. P&P)

Visit the PPSA Web Site to find out more about Pigging

www.ppsa-online.com

- MEMBERS' DIRECTORY WITH HYPERLINKS TO THEIR WEB SITES
- BUYERS' GUIDE
- FREE TECHNICAL ENQUIRY SERVICE
- PAPERS FROM PPSA SEMINARS
- NEWS OF FUTURE SEMINARS AND CONFERENCES
- PIGGING INDUSTRY NEWS
- INFORMATION ON PIGGING & TERMINOLOGY



Visit
the PPSA
Web Site

ON THE GO.

www.roseninspection.net



EMPOWERED BY
TECHNOLOGY
ROSEN
→