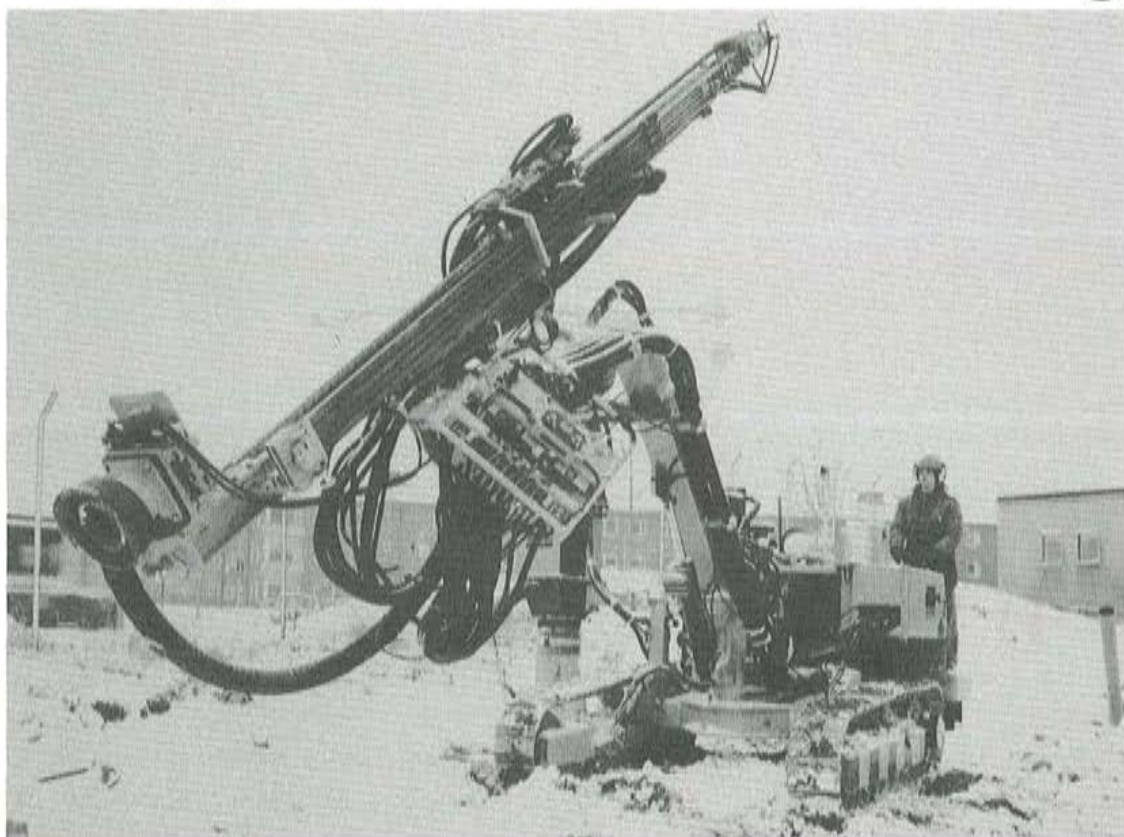




# New Zealand DRILLING NEWS

December, 1988

## ROC 612HC — A New, Cost-Effective, All-Hydraulic Crawler Drill Rig



ROC 612HC, a new light-weight, one-man-operated drill carrier unit.

The new ROC 612HC has been designed to provide a cost-effective carrier heavy enough and stable enough for the optimal utilization of the COP 1238 series of rock drills within the hole range of 35 to 76mm. It's available for both civil engineering and surface mining applications in single boom and folding boom versions. The single boom versions can be equipped with mechanized rod handling. This light-weight unit is one-manoperated, but capable of exceptional power outputs, in relation to the size and weight of its power pack. This, in turn, provides excellent, cost-effective performance.

The COP 1238 hydraulic rock drill has three different impact stroke settings which enable it to be easily adapted to different rock conditions and varying types of drill steel. For the hole diameter range 35 to 76mm, it is equipped with the COP 1238LP rock drill, which is mainly used in combination with R 32 or T 38 extension rods. COP 1238LP has

a net penetration rate of 1.7m/min in granite, when drilling 51mm diameter holes.

The power-pack consists of a turbo-charged, four-cylinder Deutz diesel engine, BF4L913, which can deliver a maximum power output of 69 kW at 2,300 rpm. The rig is equipped with four hydraulic pumps. The main pump, which provides the power for the drill's impact mechanism, is flow and pressure regulated to optimize energy utilization. The other pumps, which provide power for service functions, all operate individually. This makes them easily adjustable to differing rock conditions and to use with different drill steels.

The hydraulic system has built-in automatic functions which maximize drilling capacity and avoid damage to the drill steel. Impact energy can easily be reduced at the beginning of drilling operations, in order to ensure safe collaring, and also in situations where the bit meets no resistance. This can occur, for ex-

ample, where the bit breaks through into rock fissures. The problem here is that the full impact energy from the rig's highly effective, hydraulic rock drill—when not absorbed by the resistance of the rock—can cause damage to drill steels. Another automatic torque is indicated, i.e. when jamming is likely to occur, the system automatically stops exerting feed pressure on the bit and reduces the impact energy. Drilling proceeds very gently until the bit can rotate normally again. Regular drilling is then recommenced. (The same procedure is automatically followed if the bit's flushing holes become blocked.) These automated systems increase penetration rates and reduce spare part costs.

The on-board compressor maximizes manoeuvrability and reduces set-up times. The tramping controls are mounted on the rear platform together with one set of controls for positioning the feed. Positioning can also be carried out from a front panel mounted on the feed.



# Improved methods of core recovery and core drilling

FOLLOWING A NINE-MONTH DEVELOPMENT PROJECT, Leamington Spa based Core Drill Ltd. has announced a breakthrough in the problem of extracting undisturbed core samples from soft, friable formations.

The long-standing difficulties involved are known well enough, especially where clays, silts, chalks, mudstones and coal formations are concerned; and although polyester sleeves, such as those manufactured in Mylar material, have to some extent provided a more economical alternative to expensive geotechnical barrels, a complete low-cost solution has continued to evade those who have researched the problem, it is stated.

Core Line, the result of one of Core Drill Ltd's development projects, gives every indication that a solution has indeed been found. In fact, since its adoption by Soil Mechanics Ltd. in October last year, at least four other major geotechnical investigation specialists have claimed substantially improved core recovery performance.

## Vacuum-sized UPVC

As Core Drill's managing Director, Michael Foster, points out, the new Core Line cartridge is a development of the traditional Mylar liner, but it overcomes the polyester sleeve's deficiencies by employing a vastly stronger, more robust extruded material, vacuum-sized to achieve precise limits of accuracy. Like most effective ideas 'Core Line' is superficially simple, yet reportedly Core Drill researched more than thirty-five plastics manufacturers before finding an organisation capable of producing a close-tolerance transparent UPVC tube with a wall thickness range of 1.0 to 3.0mm.

Derived from a plastics grade originally developed for bottle-blowing applications, the impact-modified UPVC used in the Core Line cartridge is essentially the key to its success. Because it is rigid, the likelihood of concertina action, inherent in the 0.187mm thick Mylar material, is almost eliminated. At the same time the material is sufficiently supple to obviate any risk of personal injury in handling, it is claimed.

## Time saving

In addition to the integrity of the core itself, a major advantage claimed for Core Line is its time saving potential compared with conventional methods.

Once the laden corebarrel is on the rod trestle, the bit is unscrewed and the corelifter case removed in the usual way. But in contrast to the traditional stripping down and pumping out needed to dislodge a soft core from an unsleeved conventional barrel the new system's UPVC cartridge is simply pulled out from the inner barrel, having first been capped using a special UPVC end cap. A second end cap completes the encapsulation and allows the Core Line cartridge to be used, if required, as a substitute core box.

On-site evaluation in respect of 75-100mm coring indicates that once the laden core barrel has been run out, the core within its transparent UPVC cartridge can be undergoing examination inside 30-40 seconds. Thus, overall downtime between drilling cycles is assessed at around 5 minutes compared with, say 30-45 minutes or more using conventional unsleeved barrels.

## Cost saving

Although the cost of the precision gauging dies to produce the new Core Line runs into four figures for each barrel size, the end-product is said to be remarkably inexpensive. On average, selling price is £3 to £4 per metre length over the barrel sizes so far produced namely SWF, PWF, 412F, T6-131, T6-101, T6H, and SK6L-146. Core Drill see no problem in producing Core Line to suit any standard barrel size, or in any reasonable length required. Recent orders include 4.5m and 6m lengths of Core Line, all used with equal success, it is stated.

Effectively, the new system converts the standard core barrel into triple tube format. But since British-made standard barrels can themselves yield a buying cost advantage of

some 80% compared with specialist geotechnical barrels imported from France and Australia, the overall cost-saving is clearly substantial.

Using the Core Line system the corelifter case is standard but the corelifter itself and the drill bit are both specially gauged to suit the core to be cut.

Soil Mechanics were the first to recognise the potential of the new core recovery system; in fact it was that organisation's confidence and support which partially inspired Core Drill to proceed with development.

Logically, therefore, a Soil Mechanics contract provided Core Line's initial proving ground — in point of fact probably the UK's largest site investigation to date. Valued at over £3 million, the Soil Mechanics — Wimpey Laboratories joint venture at Fulbeck, north of Grantham, enabled the new system to demonstrate that in some 4 000m of coring 99% recovery could be achieved without difficulty. The formation here was variably weathered mudstones, drilling depth being up to 397m.

## Taper Tungsten core bit

The same Soil Mechanics — Wimpey Laboratories contract also provided a UK test bed for Core Line's complementary new product, the Taper Tungsten core bit. The Taper Tungsten bit is designed to provide superior performance in loose or sticky deposits such as clay, lignite, chalk, soft sedimentary rocks and soils.

A variant of the traditional, rectangular segment tungsten carbide bit, Core Drill's Taper Tungsten product is designed to improve upon the standard bit's less than optimum performance in sticky formations, notably chalks and clays. It is well known that poor core recovery performance can be attributed to clearance problems at the bit face, the soft, sticky cuttings building up and consolidating, thus plugging the ports in face discharge bits, finding their way back into the bit I.D. and causing core erosion.

Research and development by Core Drill

(Continued Page 3)



Fig. 1. Core Line cartridge



Fig. 2. Taper Tungsten core bit



# Atlas Copco Announces New Product Range From 1st August 1989 Offers Total Rock Drilling Technology

From the 1st August 1989, Atlas Copco, the world's leading supplier of drilling machinery and equipment, will market its own range of rock tools.

The introduction of Atlas Copco Rock Tools means that the company will for the first time become self-sufficient in total rock drilling technology. The decision was taken following a major strategic review of Atlas Copco's future service to customers and its own market situation.

Magnus Unger, President of Atlas Copco MCT AB, explains:

"We are in the business of supplying total rock drilling technology, based on first class hardware and with a full support programme for customers including complete after sales and maintenance service. Our experienced field personnel are available to give professional advice on productivity and total drilling economy. This service is provided by 2000 trained mechanics and engineers working in five continents. When required, this staff has access to computerized programmes adding to their personnel experience.

"The biggest advantage to customers is that all our skills, expertise and experience can be brought directly to specific applications to offer the best solutions to customer needs wherever and what ever they are drilling.

"To ensure our continuous technical leadership and fast reactions to change in customer needs, we considered it necessary to

become independent in the development and production of the entire rock drilling system."

In order to complete the shift to independent operation Atlas Copco decided to invest in its own research and manufacturing facilities through the acquisition of Secoroc AB, one of the world's leading rock tools manufacturers.

The present worldwide Secoroc marketing and sales organisation will be maintained.

## Greetings From our New President

Our valued Secretary, our good Committee and all valued members. I am pleased and honoured to have become your President this year and on your behalf I want to heartily thank our Past President Bill Washington for his five years work as a very active, hard working, diligent and very popular President. Bill achieved many goals for us during his term and I for one will never forget the very successful conference Bill turned on at Timaru during his term as President. Thanks once again Bill.

For the readers that do not know me very well I will briefly outline my involvement with the NZDF. I was present at the first meeting held to form the NZDF in Wellington in 1975 and become a Committee member in 1976. I have (along with others of our Committee, including Bill Washington) attended International Drilling Conferences in Singapore, Bali, Perth in 1978 and in Kuala Lumpur in 1981. Other Australian Conferences have also been attended by us and much of the success of the NZDF has stemmed from this team having made these visits, collecting information etc. It was very disheartening to not have enough members able to travel to Brisbane this year to enable the first joint New Zealand and Australian Drilling Conference to be held. Nevertheless keep all chins up, because I bet we'll make it next time.

Most of us are or have been suffering from the downturn in productive work, but all we can do is diversify slightly were possible, keep the tyres pumped up on the drilling rig and grin and bear it.

The Government aren't going any better they seem to have a Drill Pipe stuck down the hole and one seems to know how to get it out.

They probably don't realise it but I'm sure they have started off with well casing with larger inside diameter than the outside diameter and have ended up with the hole on the outside.

However back to business.

I want to thank our Secretary Mel, for his excellent work and his enthusiasm for the success of the NZDF. I'm sure Mel wants to keep good contact with all of our members this term, especially as we did not have our usual NZDF Conference this year. I'm sure Mel would be delighted to hear from any members who has a problem, or better still

The Secoroc production units will be expanded to become the main manufacturing source for a new range of Rock Tools to be marketed and sold through the world wide Atlas Copco sales organisation.

Atlas Copco will in this way be able to guarantee continued supply of high quality, competitively priced rock tools to all its customers worldwide.

a good idea for some possible form of improvement to our Federation.

I say again thank you for electing me as President this year. I will do my best to keep up with Bill's good work and strive to keep our Federation right up with the times.

I take this opportunity to welcome all new members and wish every one of you a Merry Xmas and a very prosperous New Year.

Yours faithfully

Woody

C.B. Woodford

## Federation Elects New President

At the August 1988 AGM, held in Wellington, the meeting elected the following persons to the Executive: President: Ces Woodford

Vice-President: Jim Faulkner

Immediate Past President: Bill Washington

Executive: Martin Brown

Lyle McMillan

Bain Webster

Ewen Cameron

Murray Carlyle

Peter Garnett

Gordon Brown

## Trade Certification — Grand Father Clause

Recently Federation Past President Bill Washington and National Secretary Mel Ouston met with the Trades Certification Board together with Labourer Union National Secretary Charlie Clayton. The purpose of the meeting was to agree on the criteria for granting a trade certificate to industry personnel who because of age and length of industry service and of course sustained knowledge should not be required to pass a written examination. The granting of this certificate is a once only exercise in which eligible industry personnel will have a specified time period in which to submit all relevant details to the TCB Adjudications panel, consisting of NZDF and NZLU representatives seeking the awarding of a trades certificate. On the expiration of the period, this lapses for ever.

### From Page 2)

has shown that by tapering the bit face, a "shear and peel" action can be induced which greatly facilitates cuttings dispersal. Junk slots spaced around the bit periphery have also been added to encourage the action.

The new Taper Tungsten bit specification includes an upgraded T.C. segment with an 11% cobalt content. Complement of segments is also increased compared with traditional bits, the PWF size, for example, carrying fourteen segments as opposed to the usual ten. Thus the bit takes a slightly smaller bite than its conventional counterpart, but the cutting action is faster.

Inevitably, the Taper Tungsten's upgraded specification has to be paid for; in fact, cost is typically two or three times that of the conventional product. But its field record to date suggests that the increase could be money well spent since one contractor, for example, reports a six-fold increase in penetration rate in clay. Running PWF bits, the contractor reportedly cut coring time down from one hour per 3m core to 10 minutes in clay and to 5 minutes in chalk, using only two Taper Tungsten bits for 1 500m of coring.

In the notorious Woolwich and Reading Beds of variably cemented sand/gravel, some thirty Taper Tungsten bits are reported to have achieved 150-200m each, with resharping costs averaging £30 per bit. By comparison an SWF impregnated bit cutting under similar conditions achieved an 11m performance, it is stated.



# Downhole drills expand water well applications

by Joseph P. Beloso

Water well drillers who want to expand their drilling options for penetrating a variety of rock formations are increasingly turning to downhole drills. The decision to use a downhole drill goes beyond the rock composition, however. Consider factors such as penetration rates, rig size, pulldown demands and maintenance requirements. The following provides an overview of when to use downhole drills for water well drilling applications, along with some tips on improving downhole drill productivity and service.

Although percussion downhole drills are primarily used to improve penetration in medium to hard rock formations, they can also be used effectively for drilling in softer rock formations, wherever air and air-foam circulation systems can be used.

Downhole drills effectively drill igneous and metamorphic rocks (e.g., granite, basalt, trap rock, gneiss, quartzite, or schist). They also perform effectively in sedimentary formations and soft formations like sandstone, limestone, and shale. The downhole drill is not effective in unconsolidated formations such as clay, sand, or gravel, conditions for which rotary drills are better suited.

But there are other reasons to use a downhole drill for water well drilling. Bit weight, rig size, down pressure, torque loads and rotation speeds can all be greatly reduced compared to rotary drilling. For example, a 15-inch rotary drill bit may require as much as 6,000 pounds of down pressure per inch of bit diameter. Downhole drill bits require only 500 pounds of down pressure per inch of bit diameter regardless of bit size. Typically, the world water well drilling industry employs downhole drills ranging from 4½ inches to 20 inches.

The moderate bit weight required by a downhole drill (2,000-10,000 feet) eliminates the need for a heavy string of drill collars to add weight to the bit. Accordingly, drillers can drill deeper holes with a smaller rig. That is especially useful



Photo credit: Ingersoll Rand

Downhole drills are used to improve penetration in medium to hard rock formations, however they are also being used in softer rock formations wherever air and airfoam circulation systems are used.

when drilling in hard-to-reach areas. Additional bit weight accelerates bit wear and increases loads on the rotation system.

## Design difference

Other advantages are gained through the use of downhole drills due to their relative mechanical simplicity. A downhole drill's only moving part is the piston which is positioned immediately above the drill bit. Compressed air drives the piston which opens and closes air intake and exhaust ports. Exhaust air vents through the face of the bit and carries cuttings up and out of the hole.

By using a piston to direct the compressed air, valves are eliminated, which means fewer parts to wear out and replace, and, consequently, less maintenance. In addition, valveless drills can operate at higher air pressures than their valved-hammer counterparts -- up to 350 psi versus 150 psi, thus providing faster rock penetration.

The development of these valveless hammers has produced quantum advances in drilling speed while demanding less air volume per

foot of hole drilled. Today, it is common to operate a downhole drill continuously at 350 psi and drill over 180 feet per hour in hard barre granite. The short rapid blow of the downhole drill minimizes the effects of broken or dipping formations and assures uniform penetration and straight holes that can be maintained to any depth.

Finally, drill string torque loads and rotation speeds also are much lower in downhole drilling than rotary drilling. A downhole drill operates from 10 to 60 rpm, which allows the buttons to index to new and fresh material after each blow. The piston drives its energy through the bit into the rock and once the rock is fractured, the carbide buttons should be rotated to a new position. The more blows per minute, the faster the RPM; the softer the rock, the faster the RPM.

## Downhole drilling tips

Drilling speed and the ability to clean a hole using a downhole drill is proportional to the amount of air pressure and volume used, though downhole drills require no more air



volume than rotary bit drilling. Of course, different rock type and conditions will dramatically affect penetration rates. Bit rotation also should be as slow as possible to maintain smooth operation. For a proper chip removal, recommended bailing velocity ranges from 3,000 to 7,000 feet per minute. The following formula will provide the proper bailing velocity.

Bailing velocity =

$$\frac{\text{CFM} \times 183.4}{\text{Bit diameter}^2 - \text{rod diameter}^2}$$

Bit diameter<sup>2</sup> - rod diameter<sup>2</sup>

When water is in a hole, there must be sufficient air pressure available to blow the water from the hole after every pipe change. The amount of pressure required to blow a hole clear is the "peak unloading" pressure, determined by the height of the water column. Two formulas can determine the pressure at the bottom of a hole exerted by a column of water: one foot of head equals .434 psi; or one psi equals 2.3 feet of head.

Once water has started moving out of the hole, the supply pressure will drop to the drill operating pressure. If there is a large amount of water in the hole, drilling performance will drop due to increased back pressure on the exhaust. In this case, it may be necessary to increase supply pressure with a high pressure booster compressor.

## Downhole drill maintenance

As with any precision tool, downhole drills require periodic maintenance to maximize their service life. Often, however, maintenance and repair can be forestalled by taking precautions in the field. Some of these precautions and maintenance tips follow.

Make sure the drill is properly lubricated. At the minimum, downhole drills should receive one-third pint of specially formulated rock drill oil per hundred cfm of air volume per hour. Before operating a downhole drill, blow out the air supply hose and drill pipe and flush out the water supply hose before attaching it to the drill rig. Fill the oiler and make sure it is operating correctly. Look for oil in the air exhaust. The filter on the water injection system must also be clean.

Be aware of any pollutants to

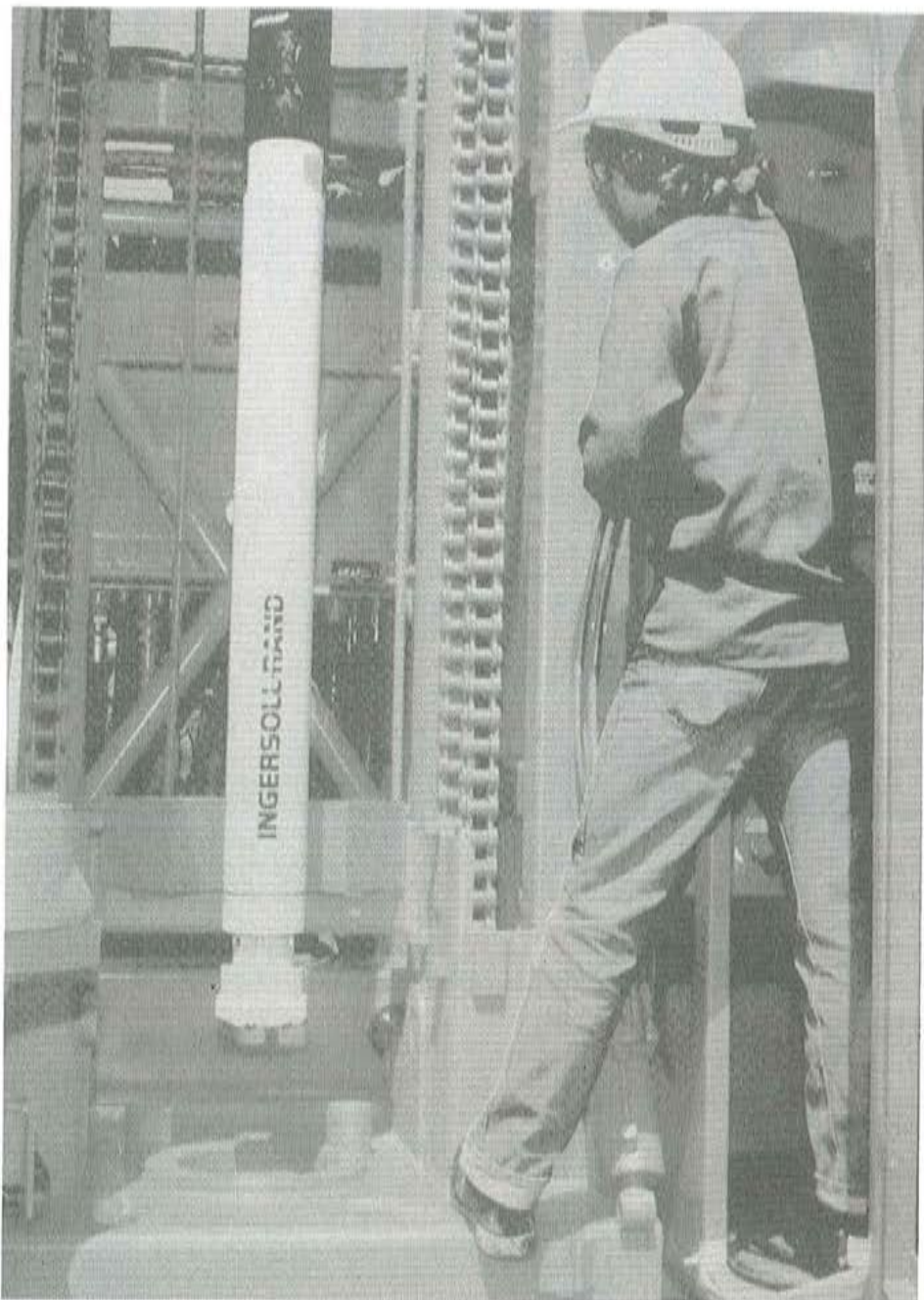
the downhole drill system, including acid water and dirty water, a bentonite, a dirty drill pipe, especially one previously used for mud drilling, and a faulty check valve, which would allow water and dirt back up into the hammer during steel changes.

When storing the downhole drill, always cover the API connection; when not in use also cover the drill pipe openings. In water well drilling, downhole drill parts should be cleaned and inspected every 100 hours of operation. Routinely replace simple parts like check valve springs and bit exhaust tubes.

Finally, although downhole drill bits frequently last longer than rotary bits due to less pull-down weight, some steps can be taken to improve their longevity. For instance, select-

ing the right rotation speed for the type of rock will reduce bit wear. Adequate feed pressure will assure complete transfer of impact energy. In addition, reduce air pressure to the downhole drill when freeing a stuck drill string to help prevent button popouts.

*The author, Joseph P. Beloso, is Product Manager of Downhole Drills and Bits for Ingersoll-Rand Company's Rock Drill Division.*



6" -- 6 1/4" size downhole drills are commonly used to drill consolidated formations in the water well industry.

Photo credit: Ingersoll-Rand



# Mike's Drill Makes An Impression

Building motor vehicles was a bit of a hobby for Mike Pulman until he made a breakthrough for the Waihi company he works for.

The 16-tonne tank-like drilling rig designed by the Waihi engineer is the latest in a series of vehicles started when he built himself a motorbike as a teenager.

With a bulldozer blade at the front and the drill at the back, the caterpillar-tracked machine is designed to move across rugged terrain collecting ground samples from as deep as 300 metres for mineral exploration.

Mr Pulman says the mobile drilling rig, built by mineral explorers Radial Drilling of Waihi, differs from other mobile rigs in that it can travel as fast as 60 km/h in top gear, compared to the 2 to 3 km/h other mobile

rigs do.

And while most mobile rigs can drill only 10 to 20 metres a day, the new rig can drill 70 to 100 metres in the same time.

The 250 horsepower engine moving the rigs sits beside a 280 horsepower air compressor engine wrapped in "a major nightmare" of 2km of hydraulic hose.

"Some things didn't fit but we made them fit. Things that break down we tried to put on top where we can get at them."

He collected ideas for the rig from working in mineral exploration in Australia, the Pacific Islands and South America, but it was a group effort with the Radial Drilling crew that got the \$350,000 machine assembled.

Mr Pulman, whose other vehicles include

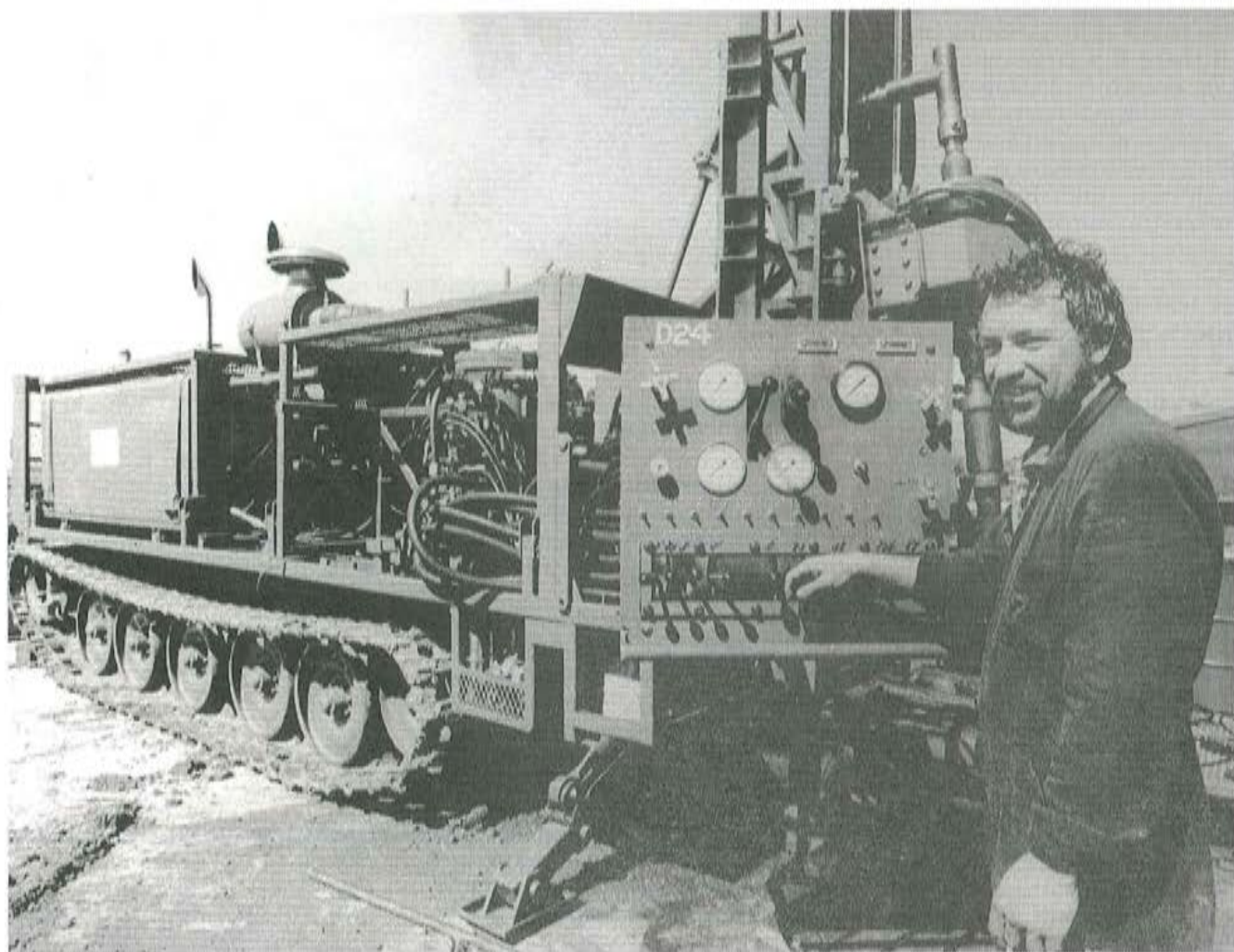
a four-wheel drive fertiliser spreader for his own business, says it took nine weeks to get all the pieces into one vehicle.

There may be another modified rig in the pipeline, but Mr Pulman also has a private ambition.

"I'd like to make an indestructible lawnmower—that doesn't break down."

Radial Drilling group project director Colin Burr says there is at least three months work for the rig in New Zealand, but after that it could go to Indonesia for other mineral exploration work.

The rig is capable of diamond drilling, reverse circulation drilling and air coring, Mr Burr said.



Mike Pulman shows off the latest in a series of vehicles he built as a hobby. It made a breakthrough for Radial Drilling Ltd.





Blade and drill enable this mobile rig to sample from 300m deep.



# CHemGrout Introduces A Mobile Well Grouter Integral Power Unit That Offers Non-Stop Grouting With One Man Crew

CHemGrout announces a newly-designed grouter for the well drilling industry that combines simplicity, efficiency and productivity. The ChemGrout Well Grouter provides simultaneous mixing and pumping using its large storage hopper. The variable output system delivers up to 60 bats of cement or equivalent in bentonite per hour continuously with only one operator. Hydraulic operation is powered by a gas-driven engine integrally mounted on the frame.

The mobile Well Grouter is carefully designed so the mixer, pump and power unit are perfectly weight-balanced on a wheel and tongue frame. This allows one person to easily manoeuvre and position the entire unit for towing or storing. It operates from the towing position for fast set-up. The grouter is strongly ruggedly built for long, trouble-free service.

For specific information on the ChemGrout Well Grouter contact: ChemGrout, P.O. Box 1140, La Grange Park, IL 60525, 312-35471121. Fax: 312-354-3881.



## New degree in drilling

**Newcastle University in the north-east of England is to introduce a new undergraduate degree course in drilling engineering.**

The course, which starts in October this year, is the first specialist drilling degree to be offered by a British university and is expected to attract students from the United Kingdom and overseas. It is designed to produce graduates with a specialist knowledge of drilling in all its aspects.

At present, most drilling engineers come from mining, mechanical, civil and chemical engineering backgrounds and have to acquire their knowledge of drilling through their employers.

The new three year course will lead to a Bachelor of Engineering in Drilling Engineering. It has been set up in the university's mining engineering department in response to requests from the industry and has been welcomed by the British Drilling Association.

Professor John Tunnicliffe, head of mining engineering at Newcastle University, said: "There is a growing demand throughout the world for qualified drilling engineers, both from oil and mining companies, and companies concerned with waterwell drilling and major projects such as the Channel tunnel.

"This course is the first step in our plan to become a centre of excellence for drilling research in the country."

The course is expected to have an initial intake of about six students.

## Hong Kong to Host a Second International WaterTech Exhibition

Hong Kong will host a second International WaterTech Exhibition from 8-11 March 1989. Organised by Fairs and Exhibitions Limited of London, its objective is to promote international trade and development in the region. This major WaterTechnology, Sewage and Wastewater Treatment Exhibition has the unreserved support of the Hong Kong Government, including the Environmental Protection Department, the Water Supplies Department and the Civil Engineering Department.

Following the success of the first International WaterTech Exhibition in March 1988, which saw over 2,500 top quality buyers and specifiers from 25 countries, including official delegations from the People's Republic of China, Taiwan, Korea, Thailand and Macau, and in view of the region's rapidly deteriorating environments due to increasing urbanisation, the need was recognised to stage another exhibition in 1989. WaterTech 89 is expected to be the largest and most important exhibition of its kind to be held in South East Asia.

## NQ Gold '89 - Townsville

The North Queensland Branch of the Australian Institute of Mining and Metallurgy is holding a conference "NQ Gold '89" in Townsville from the 17th to 20th April, 1989. The Conference is to be held at the Sheraton Breakwater Casino-Hotel.

The theme for the Conference will be based on gold exploration and mining centred around Townsville. The industry has recently experienced an explosive growth and may offer your Company new or expanded business opportunities.

A delegation of approximately 500-650 persons is expected from Australia, New Zealand, and North America. Most Queensland mining and exploration companies will be represented at the Conference.



# Bulk Drilling Used to Correlate Gold Sampling Technique

Unidrill Pty Ltd recently completed an unusual, if not unique, alluvial gold sampling program for Felstone Investments Pty Ltd on the Macquarie River flats near Wellington in NSW.

General Manager of Unidrill, Wayne McGuinness says the program has been unusual in that it has involved drilling large diameter bulk sample holes beside smaller diameter churn drilled holes.

"To my knowledge, this program is rare, if not unique in directly correlating sampling carried out by two different types of drilling rigs," he said.

"In the past churn drilled holes have been checked by excavating bulk samples by hand."

Unidrill churn drilled 55 holes on the river flats in 1986/87, in an exploration venture initiated by Valley Exploration Pty Ltd, who hold the exploration licence over the area.

A Hydromaster 1500 cable tool rig, drilled 150mm diameter holes to depths ranging from 15 to 70 metres below ground level.

Rich samples obtained from the initial program encouraged Felstone, the exploration arm of Consolidated Rutile/Cudgen R Z Ltd, to enter into a farm-in agreement with Valley to continue the exploration.

As a first stage in the ongoing venture, Felstone suggested that they would like bulk sampling beside some of the previously drilled small diameter holes. So a program was planned to drill five large holes to represent a cross-section of terrain and gold grade results.

Unidrill used their Calweld 250B bucket drilling rigs to drill inside 750mm diameter steel casing.

The 1.5 metre lengths of interlocking steel casing were added progressively and rotated by the rigs turntable so that the casing was always kept ahead of the excavation bucket. This ensured accurate samples were recovered, giving samples 25 times larger than those recovered from the 150mm cable tool drilled holes.

Ground conditions were relatively consistent, with a barren clay-loam overburden down to 12 metres and the main auriferous gravel varying in depth between 15 and 22 metres below ground level.

Once the samples were raised to the surface in the bottom dump bucket, they were discharged into plywood pallet containers, lined with polythene sheeting, each container holding a 1.5 metre length of sample.

When the drilling program was completed, the pallets were sealed and trucked to Consolidated Rutile's works in Brisbane. There the samples were put through a treatment plant to recover the gold.



top, A sample being discharged into a polythene-lined container

left, The 750mm steel casing being extracted after a hole has been drilled

bottom, Alan Wallace, founder and managing director of Unidrill, was one of the first to use bucket rigs for alluvial exploration.





# Oilcorp Offers Consumer True Competition

Keen pricing, customer choice and fair competition are the motivating factors behind Oilcorp International (NZ) Ltd entering the New Zealand market.

Managing director Mr D L (Don) Stewart says deregulation of the oil industry has given his company an ideal opportunity to develop a service-oriented business that will bring real benefits to the customer.

"Deregulation means that we can now supply competitively-priced diesel and lubricating oils to a variety of users, especially in the contracting and road haulage industries," he said.

"For the first time, not only can the larger consumer benefit from real competition but he also has an alternative—and independent—line of supply."

Mr Stewart said Oilcorp, which is based in Penrose, was concentrating on building its business nationwide.

"In the course of developing our business we discovered opportunities through New Zealand to provide competitively-priced fuel. We're looking at these closely but we intend to building slowly to ensure that customer service remains paramount."

Oilcorp, a subsidiary of Oilcorp International Pty Ltd of New South Wales, Australia, was formed in July 1988. From the outset, it attracted the attention of the large oil companies supplying the New Zealand market, BP-Europa in particular.

"BP-Europa took an alarmist view about our entry into the market and waged a pretty savage advertising campaign against us, suggesting our principal product was low-quality 'moonshine' diesel," says Mr Stewart.

"Fortunately we have been able to protect our reputation and, hopefully, persuade existing and potential customers of our professionalism and customer service. It hasn't been an easy time for us but we're here to stay."

Mr Stewart says he has been asked several times whether Oilcorp has plans to supply petrol and challenge the big oil companies head on in the retail market.

"Anything's possible, although in the short term our attention will be spent on widening the market for our existing products."

Mr Stewart, who has had 20 years' association with petrochemicals manufacturing and has held a senior position with the Top Group, says the most interesting outcome of deregulation has been the desire for change expressed by service station proprietors and

the motor trade in general.

"Numerous service station owners and Motor Trade Association members have told me they don't like the present retail system because it doesn't provide for fair trade or true customer choice. We've been asked if we would tackle this head on."

"This is not our role. We have no axe to grind with the oil companies provided they leave us alone and let us trade freely and fair-

ly, our size hardly makes us a serious threat to their business."

Mr Stewart says Oilcorp is able to guarantee an independent supply of diesel to the New Zealand market by contracting supplies from Electricorp and an international oil broker.

"Customers need not fear our supplies will dry up. We've taken the appropriate contingency steps to ensure needs are met."

## ACC Levies

Over the last six months your Past President Bill Washington and Secretary Mel Ouston have been engaged in a long running battle with ACC; over the huge increase in levy payments. Members' have already received a copy of Bill Washington's press release dated 18 May 1988. Following this the Federation then surveyed its own members to seek positive verification of the number of accidents and quantum of claims made. To those members who did reply thank you. It was fortunate that some did not provide details to the Federation. In August the Secretary wrote to ACC again, the following being an extract — The Federation has now surveyed its members as to the quantum of claims made over the last year. You state that claims had risen from \$40057 to just over \$1 million. Our survey not unfortunately complete, suggest at the very most, total claims of \$75,000. Accordingly the balance of your increase must be either flow on from previous years or much more likely from the more high risk petroleum sector. We submit it to be most unfair for us to be expected to cross subsidise this sector group, as has already been mentioned in a media release by our President Mr Bill Washington, the Federation and its members are very safety conscious and take umbrage that the Corporation in this age of computerisation cannot supply us with an adequate breakdown of how the aforementioned massive claims increase came about. For our part we would wish to work closely with the Corporation in minimising any accident level within our industry. However we cannot initiate any moves in this direction if your data base of claims does not permit us to jointly appraise the quantum of claims and carry out the appropriate level of analysis and follow up in the field of accident prevention, training and education. Hence we submit the urgent need for our own levy classification.

Pursuant to this request I would make mention that Federation members were extremely angry that in many instances they were forced to outlay a large sum of money over and above the previous year, when they knew from their own records that there had been no matching increase in actual accidents. We would further mention that the industry is currently experiencing one of its worst economic downturns in available work. The extra levy payment for many was almost financially crippling. Therefore your urgent attention to separate classification is of major concern and interest to all our members. The great bulk being small family concerns, who do not have a sizeable capital base able to absorb, such non-recoverable cost increases.

Our AGM is programmed for 31 August

at which we would wish to table some positive response from the Corporation. We would implore you not to take 10 weeks to answer this correspondence as you did our earlier letters.

On receipt of the above letter the Corporation did acknowledge a willingness to transfer members to another class but not create a special class just for us. After this ACC Deputy Managing Director Steve Anderson kindly addressed the Federation Council and at that stage appeared to offer considerable hope for a reduction. Unfortunately later in September further correspondence was received from ACC, advising that after sorting all members claims (the Federation has given them a list of our members) it was found that whilst the average number of claims for our classification should have been 18, the actual number was 33, and that on this basis no change in classification could be considered.

Early in October Bill Washington and Mel Ouston again travelled to Wellington specifically to meet with ACC Deputy Managing Director Steve Anderson. Also at the meeting was senior ACC Executive officer M.D. French. This time we were confronted with, details of a higher than expected level of accidents in one sector only of our industry. Which was most regrettable as we were hopeful of perhaps making some tangible headway. At this stage we have sought from ACC, a breakdown of all levies and claims for compensation paid. Although in view of the changes proposed by Government to the whole levy system, it is probably fair to say our ability to effect some reduction for the industry is not all that promising. Needless to say your Federation will keep on chipping away and also adding its weight to Employers Association protests.



## Cranes Used Exclusively For Lifting Duties Associated With Pile Driving Operations

New Ministry of Transport (Marine Division) regulations regarding the use of cranes used exclusively for lifting duties associated with pile driving operations have recently been laid down. Most members should have received a copy of the new regulations direct from MOT. If you haven't, please contact the NZDF secretary.

## 1989 Conference

Venue: Hamilton  
Dates: 26-29 July 1989  
Conference Secretary:  
Mel Ouston Phone (071) 299-677  
or Fax (071) 299-848



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*For further information  
write to:*

The National Secretary  
N.Z. Drillers Federation Inc.  
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