Recovery process could extend basin’s lifespan

**NORTH SEA**

by Mark Lammey

A pioneering new microbial technology which will soon be trialled in the UK North Sea could add hundreds of millions of pounds to the UK’s oil and gas reserves, earning jobs and “kicking decommissioning down the road.”

The OOR process involves identifying resident microbial life in oil reservoirs, then designing a unique nutrient package to feed them.

The process is simple and easy to apply using existing equipment. A pilot, which requires the injection of low volumes of a nutrient feed for the “resident” microbes, only costs around £100,000. It’s also quick to deploy, which is important for those with rotations as fast as 8-12 months.

Chris Venkat, engineering and operations manager for OOR, said he had progressed from first conversation to pilot tests in six months.

Pioneering the technology, OOR believe it’s much more likely to be nutrient rich there. The gas is a real bugbear of oil companies. It sours wells, reduces oil and gas production and increases corrosion on installations.

The bacteria which produces H2S is primarily fed by the injection of nutrients in the North Sea. Some companies spend tens of millions of pounds every year trying to suppress the production of H2S.

A reservoir will definitely look for food. It’s incredibly cheap and easy to apply, using existing equipment. A reservoir formation.

Mr Findlay explained: “The microbial life surrounds and/or breaches through the reservoir, mainly oil breaking into smaller droplets, increasing the chances of the remaining oil breaking into smaller droplets, increasing the chances of the remaining “stranded” reserves being exploited. Microbes found naturally in the reservoir.

The technology’s developers claim they can redeploy and, in some cases, reverse production decline in reservoirs, and revive shut-in wells. It would also change the investment case for marginal fields that might otherwise be considered non-economic.

The price is right. It’s thought that 70% of UK North Sea wells have the right conditions for the technology to be applied. On a global scale, the “stranded oil market” is estimated to be worth $350 trillion.

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So a remedy will likely be of great interest to many companies, particularly those who rely heavily on water injection to enhance production from their fields.

Roger Findlay, OOR general manager, said the process should not be confused with microbial enhanced oil recovery (MEOR), which can’t work.

Mr Findlay explained that OOR is about using the existing oil-producing of a reservoir and adding the resident microbes that are already there.

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The third-stage is the pilot, which, if successful, is followed by a “sequestered water flood implementation”. It’s essentially a scale-up of the pilot, with larger volumes of the nutrient injected.

The final stage is a full-field application.

Bruce Ferguson, managing director at Hunting Energy Services, said the joint venture could scale up OOR “relatively quickly” to cope with the demand they hope to generate.

Mr Ferguson is confident OOR will be “value enhancing” for Hunting and will innovate and bring through technology.

Some companies are creating new environments and will innovate and bring through technology.

“Other who you think would be receptive, say, ‘no, it’s-make-or, or ‘it’s too good to be true’.

‘Sometimes it’s as simple as that – there’s no science behind their reasoning.

‘That’s why we have to prove up OOR through field trials, and that’s fine. That’s the name of the beast,’ he added.

Mr Venkat spoke to four or five operators who were interested, but said “patent blank” that they were “not going live” and were waiting for the results of the upcoming North Sea trials.

Hunting is confident that OOR’s samples of water produced from the wells are being sent out to determine the type of microbial life present in the well. The right nutrient package can then be designed.