

## Equipped for success

KIRILL MOLCHANOV gives an insight into the work of the HMS group in the Rumaila project and why it is so important to have well maintained, efficient water injection equipment.



Kirill Molchanov is the First Deputy General Manager of the Management Company HMS. He graduated from the Bauman Moscow State Technical University with a degree in Computer Engineering. Mr Molchanov has worked in the company in various management positions since its inception in 1993.

**What involvement does HMS Group have in the Rumaila project?**

**Kirill Molchanov.** We have been involved in the Rumaila project since 1970 when Soviet companies began Brownfield development of South Rumaila and Greenfield development of North Rumaila. The field was studied, designed and developed by a Soviet government contractor, which involved several specialised Soviet plants and companies and HMS's factories among them. We have manufactured and supplied a complete water injection system for North and South Rumaila and have been supporting it until now.

That is why we have more than 35 years' experience of working in Rumaila. For the last 13 years our export division HYDROMASHSERVICE has directly contracted Iraqi South Oil Company that has operated Rumaila.

Moreover, Russian aged superefficient oil field Samotlor is very similar to Rumaila both in its features and tasks solved. So, we are also experienced in maintenance of this field now operated by joint venture TNK-BP.

**What kind of equipment do you use in the Rumaila oil field?**

**KM.** We supplied water injection equipment for nine cluster pumping stations designed by a Russian engineering company based on the Soviet oil equipment of that time. More than 30PSc huge water injection pumps of 4MW each were supplied and most of them have been successfully running for 35 years. We also equipped a water treatment station in

Garmat Ali with a capacity of 150 mln. cub.m/year (2.5 mln. bbl/day).

Now HMS Group offers not only water injection equipment, but complete projects for oil field development.

**Are you still producing this water injection equipment used in Rumaila?**

**KM.** Well, now we produce similar water injection pumps completely interchangeable with those legendary ones, but of course they are more up-to-date and efficient. The reliability and lifetime of the produced pumps were so high that we have a specialised factory integrated in the Group, which is engaged only in the upgrading of old injection pumps like those used in Rumaila. We also produce modular, completely ready and prefabricated water injection pumping stations in our factories. Now we bring containers to the site, put them on base, connect them and within several months hand them over to the client. It is now a widely used and demanded technology in Russian Greenfield projects with short periods of commissioning.

In general, HMS Group now has not only an Industrial Pump division producing a large share of the Russian market for industrial pumps, but also a strong and modern Oil and Gas modular equipment division and EPC projects division. The strong position of the Group in water, oil and gas projects is that it can offer EPC solutions with little part of outsourcing services and equipment. It means that a broad line of services for water handling, water injection, oil field

upper stream development, pipe lines, etc. can be fulfilled in the HMS Group's integrated factories and engineering companies, including engineering, manufacturing, construction and installation with rich experience and references.

**Based on your long experience in Rumaila maintenance support, what is your view on the most pressing concerns for Rumaila's new consortium operator?**

**KM.** We are in regular contact with all participants of the new consortium and admire their top professionalism and commitment to the project. Their principal assessment of the situation in Rumaila is sure to be right. Along with urgent rehabilitation of the field infrastructure, they put water flooding of Rumaila as a short-term priority and it is truly right. As our general advice for start-up conception for Brownfield Rumaila we would recommend maximum use of the existing human and facilities capacity. We really believe that the initial production target (IPT) could be easily reached on existing facilities designed and equipped for a much higher production level. It could be realised within a short period and at a low cost. Some of the applied technology and equipment is not very modern and effective but it is reliable and well proved. And more importantly, the Iraqi personnel know it in detail and can effectively operate and maintain it with an easy improvement in management and material supply.

The facilities and equipment that was completely destroyed must be replaced with new modern ones, equipment modular and skid-mounted with maximum levels of prefabrication and a short installation period.

From what we know, based on our long-standing experience in Iraq, as well as vast expertise in operations in remote regions from Russia's Siberia with its permafrost and severe climate to desert conditions of Middle Asia, the most sophisticated state-of-the-art equipment may be, every now and then, challenged if not tried for a long enough period under local conditions and service and fine-tuned to them. In this instance, this means the likelihood of frequent cuts in the electricity supply, high ambient temperatures, dust desert storms, possibility for manual operation, training of Iraqi personnel, etc.

**You mentioned that the area in which you have most expertise in Rumaila is water injection. Could you give some details and solutions for this priority task?**

**KM.** You are right. We provide detailed information and documentation in the design, technology, equipment and operation and maintenance results of the Rumaila water injection system. What is more valuable is that we know people in the South Oil Company who operate this system and whom we met a lot at site, in Basrah or in our factories in Russia, and together we sought solutions to their problems and tasks.

In my opinion, there are three urgent priorities of the project. The first one is cluster pumping stations (CPS). After 35 years of operation the injection pumps lowered their efficiency and should be overhauled and repaired. That will increase their capacity up to the original level – 15-20 percent



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above the existing level. The pioneer contract for the pumps' overhaul repair has been agreed with the South Oil Company and could be easily completed by the new operator. We consider it more effective to overhaul and repair not only the pumps but the complete CPS with guaranteed designed output, because the effective work of the pumps should be supported by many other facilities like electric, lubrication, valves, etc.

The second priority is the water treatment plant (WTP) in Garmat Ali which supplies treated water for Rumaila water injection and other consumers. The actual production of WTP is half of the designed one and not enough for the required injection. This task could be quickly solved by recovering designed technology using existing workable facilities and replacing the destroyed equipment. Meanwhile it is necessary to make an assessment of the existing repairable works and equipment, and the capacity that can be reached with them. After that, new modular equipment can be introduced in order to increase the needed output. Now we are negotiating this solution with the consortium. We are rather cautious regarding the use of sea water for Rumaila as in the other Gulf countries, at least in the midterm, due to the huge organisational and logistical challenges. However, unlike some other countries, Iraq has the option of disposing of huge resources of fresh water.

The third priority is one of ecology. In addition to the technical point of view, our solution it has a big moral and ecological importance. It is a real solution to the problem of produced water recycling. The increasing quantity of produced water in Rumaila nowadays is being dumped to dammed lakes outside the degassing stations. The lakes of oily, dirty water are increasing and are causing ecological and environmental damage, as well as damaging the equipment of the degassing stations. It is not only an Iraqi problem, but an international problem and the consortium will have no other choice but to make it their first priority. This problem was well understood by Iraqis but was delayed due to lack of financing. For the last two years, HYDROMASH-SERVICE has been intensively negotiating with the South Oil Company and offered them several solutions adjusted to Iraqi conditions. These solutions provide treatment and reinjection of produced water and thus solve ecological tasks and reduce consumption of fresh river water for injection. ■