

Overview of Anton completion industry group technical service capabilities

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Anton well completion industry group is a technical service team with oil and gas well stimulation technology as the core business, characterized with the integrated stimulation and completion solutions. Anton can provide customers with stimulation and production services including reservoir and formation evaluation, proposal design and optimization, completion tools, chemical liquids, equipment construction and effect evaluation. It can also provide a variety of single technical services to meet the differentiated needs of customers, whose clients are spread over dozens of countries and regions in the world.



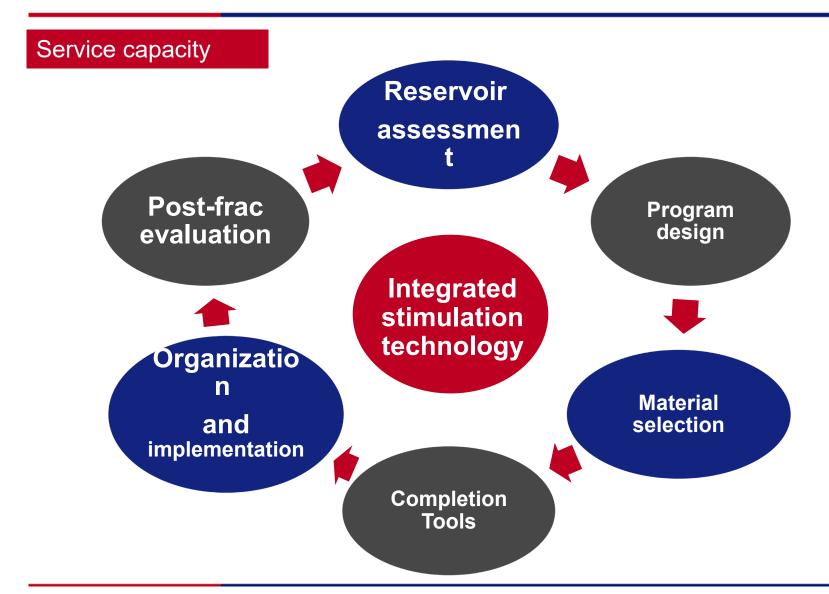
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Well completion advantages:

- Strong design capability on stimulation and the integrated stimulation design;
- The leading provider of well completion technology and tools in China, with a full set of own-branded completion tools.
- A complete set of downhole chemical products, with advanced nano stimulation and injection technology;
- 100,000 hydraulic horsepower fracturing equipment, and rich experience in shale gas and tight gas fracturing;
- The leading coiled tubing service provider in China, providing CT-related cable testing, logging, fishing, velocity string and etc.;
- The promoter of fiber optic logging technology.







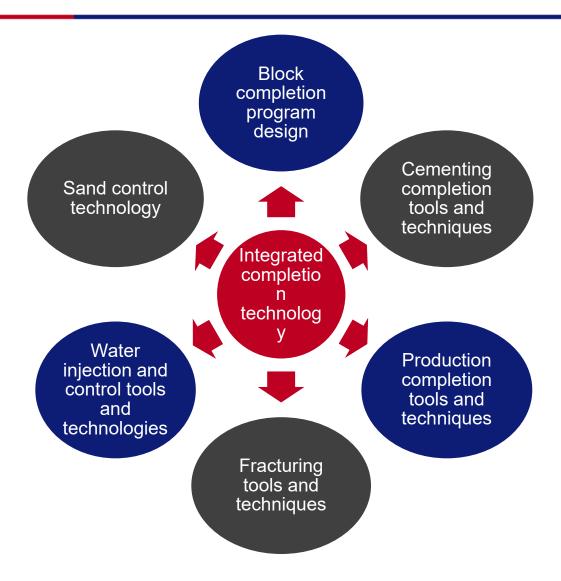
Service capacity

- Provide integrated stimulation services, including reservoir assessment, reservoir renovation, EOR program design, material selection, completion tools, organization and implementation, post-frac evaluation;
- Domestic and foreign software for reservoir analysis, fracturing acidification, testing analysis, also self-devloped characterized software as addition;
- Provide integrated stimulation services for tight oil & gas reservoir, shale reservoir and coal-bed methane reservoir.
- Strategic cooperation with a number of petroleum colleges and research institutions, provide services and wealth of case histories locally and globally.



Service performance

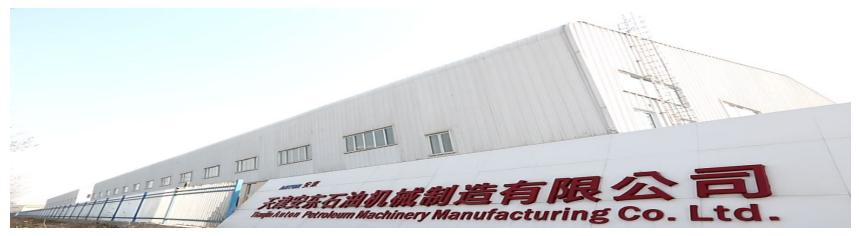
- The first introduction of horizontal multi-stage fracturing technology has been widely promoted in tight oil and gas reservoirs in China, which opened the large-scale development of Sulige gas field and implemented more than 1200 wells.
- The first to introduce slick water SRV fracturing technology, and carried the 1st package service of shale fracturing project in China, and become the main technical service provider in Sichuan and Chongqing shale gas area.
- Promote new stimulation technologies in emerging markets around the world, as acidizing over 500 wells, acid fracturing 4 wells and sand fracturing 3 wells in Iraq, Pakistan sand fractured 13 wells in Pakistan, and 5 wells in Kazakhstan.



Completion tools and technical service capabilities



- Provide integrated completion technical services, including reservoir analysis, program design, tool organization and field operations;
- Professional R&D team and manufacturing team, can provide customized tools and services according to customer needs;
- With more than 10 years of experience in the application of liner hanger, fracturing tools, water control tools and sand control products, the market feedback is fairly positive;
- The service bases spread in more than a dozen countries, and the engineers have rich overseas operation experience and can provide timely and efficient services. The company has provided service for more than 2000 wells, and is also the first company to introduce open hole fracturing technology in China. Currently, Anton has won many invention patents on fracturing tools.



Completion tool manufacturing base, 4 workshops, 6000 m² each.



Characteristics of oilfield chemical technology

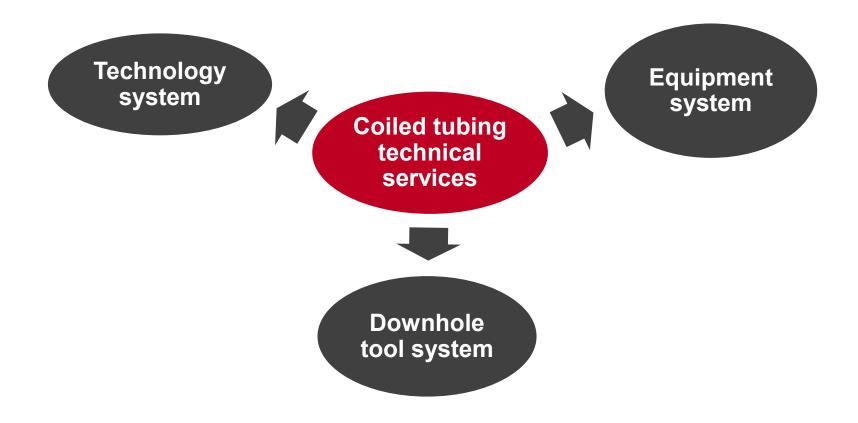
- Chemical technologies and products for the stimulation integration program
- Chemical techniques for stimulation and reproduction of old wells, including refracturing, temporary plugging & fracturing, injection enhancement in injection wells, injection profile control, and etc.
- Wellbore chemical treatment technology: chemical plugging and chemical wellbore remolding technology





Technical capacity	Technical characteristics	Service performance
Laboratory evaluation capability	Domestic strong test evaluation capacity combined with on- site mobile laboratory support, to provide customized liquid system	 More than 100 groups of single well ingredient optimization tests in Pakistan 10 groups of reservoir damage test for fracturing fluids in China
Fluid system	 The low damage gel gum fracturing fluid system High temperature resistance and low friction fracturing fluid system (sustainable at 180°C) Low-temperature glue breaking fracturing liquid system (glue breaking 100% below 40°C) Efficient slick water fracturing fluid system Characteristic acid systems such as retarded acid and diverter acid 	 Domestic service: 40,000 cubic meters/year; Pakistan: total 10,000+ cubic meters
Characteristic additive	Composite nano fluid (CNF) Chemical tracers Chemical plugging agent	20,000 cubic meters CNF fluid
On-site quality control	 Test and debug for the mixing fracturing fluid Standardized operation of mixing fracturing fluid Test for the fracturing linear gel 	100+ wells on average/year

Coiled tubing service capability



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Coiled tubing service capability

Founded in 2009, Anton coiled tubing service department provides a wide range of technical services to customers, relying on the imported world's leading equipment, mature process technology and advanced downhole tools.

- With imported world-advanced HYDRA equipment, stable performance, mature and reliable design;
- We full-set American Tenaris coil tubing with excellent quality and service capacity up to 7900m.
- With the industry leading professional simulation and acquisition software, mature string life monitoring system;
- Equipped with complete downhole tools and corresponding technologies, so as to cover drilling & completion, logging and downhole operations.
- Capable of integrated program design, material supply, equipment, service group and technical service.
- 5 coiled tubing units for technical service in Iraq now.



Fracturing & pumping service capability ANTON 安東

Equipment capacity

- Six sets of equipment units (4 sets in China, 2 sets abroad);
- 10,2000HHP fracturing equipment, including 16 fracturing trucks (type 2500) and 31 fracturing trucks (type 2000);
- Can supply 6700m³ fracturing fluid and 700m³ acid fluid.
- 20set sand tanks (15m³ each), 330m³ silo, to achieve a total sand supply of 630m³.

Service capability

- Acid fracturing technology services for conventional oil and gas wells and coal-bed methane (CBM);
- Horizontal P&P, open hole multi-stage fracturing, coiled tubing drag fracturing and other technical services;
- Technical service of zipper frac in shale gas wells;
- Gas foam fracturing, temporary plugging fracturing, supercritical CO2 fracturing and other new technical services.

Service performance

- From 2010 to 2018, Anton has fractured 1174 wells/2368 stages in conventional wells, and 1028 wells/1421 stages in coal-bed methane(CBM) wells.
- Also 160 wells/3155 stages in horizontal wells and shale gas wells.
- A total of 2362 wells /6944 stages have been fractured locally in China and expanding gloabllay.

Fracturing &pumping service capability ANTON 安東

Iraq project department

- Established in 2010, it is equipped with 5 fracturing trucks of model 2000 and a complete set fracturing units of 10000HHP.
- It has the ability to implement acidizing and fracturing technology in conventional well and horizontal well.
- Since 2010, nearly 800 wells have been completed. In 2016, lraq successfully conducted the first pilot test of gravel pack fracturing, and completed the large-scale acid fracturing and fracturing operations in three wells in 2018.

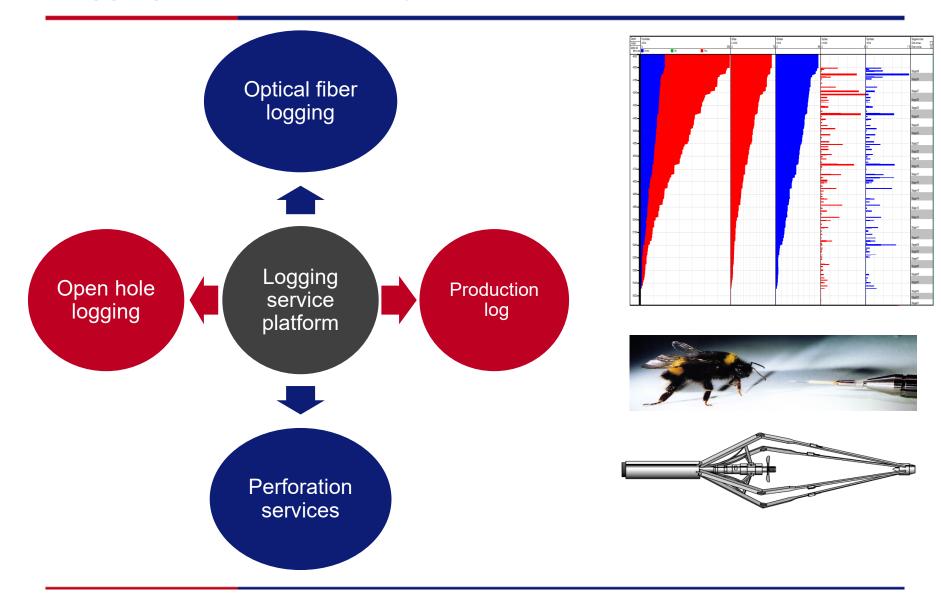


Pakistan project department

- Founded in 2016, it is equipped with 6 fracturing trucks of model 2000 and a complete set fracturing unit of 12000HHP.
- Capable of independently completing acidizing and fracturing technology services for conventional oil and gas wells, horizontal wells and shale gas wells;
- From 2016 to 2018, Anton has finished 16 wells /18 layers fracturing in conventional oil and gas wells.

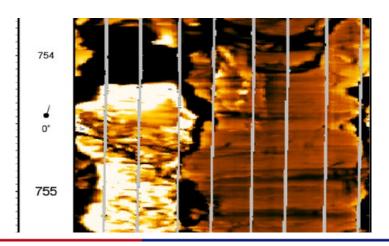


Logging service capability



Logging service capability

- Anton provides all the services of bare well logging, including conventional full string logging and high tech logging program which include cross dipole sonic and microimager logging;
- Anton provides the most advanced fiber logging technology service in the industry, which solves the problems of horizontal well, complex well and difficult well logging
- Anton provides a full range of production logging services, including seven-parameter logging, residual oil saturation logging, multiphase flow logging, and etc.
- Anton provides all types of perforating services, including TCP perforating, PDP pumping & perforating, TTP through-tubing perforating and cutting services.





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THANKS!

Helping others succeed...