

# 钻探工程

2022年第49卷第5期(总第433期)

2022年9月出版

双月刊

## 目次

### 陆域油气地质调查钻完井工程专题

支撑油气地质调查 服务能源安全保障——陆域油气地质调查钻完井工程专题编者按 ..... 《钻探工程》编辑部(1)

#### 【专家视点】

公益性陆域油气地质调查钻探工程技术进展与攻关建议 ..... 何远信, 胡志方, 单衍胜, 王胜建, 迟焕鹏, 朱迪斯, 赵洪波(3)

#### 【页岩气地质调查】

长江下游(安徽)地区页岩气钻井工程难点及对策分析 ..... 朱迪斯, 赵洪波, 刘恩然, 岳伟民, 康海霞, 王胜建, 徐秋晨, 石砥石, 单文军, 迟焕鹏, 郑红军, 李大勇(11)  
下扬子页岩气地质调查井的溶洞识别与处理 ..... 赵志涛, 蒋睿, 卢彤, 朱迪斯, 徐军军, 欧阳志勇, 朱文鉴(22)  
望江凹陷页岩油地质调查皖望地2井钻井技术 ..... 闫家, 曹龙龙, 胡晨, 王稳石, 张恒春, 王志刚, 李鑫森(30)  
鄂西地区页岩气地质调查鄂建地4井钻井技术 ..... 刘文武, 朱文鉴, 赵洪波, 孟凡洋, 冯美贵, 郭坤, 李超, 蒋睿(39)  
沅麻盆地页岩气地质调查湘桃地1井钻井技术及井下复杂处理 ..... 李正前, 房勇, 陈孝红, 李旭兵(48)  
PVA1788成膜体系无固相冲洗液在桂柳地1井的应用 ..... 苏力才, 蒙学礼, 李永卫, 王嘉瑶, 李明星, 付帆(57)  
桂中坳陷页岩气地质调查桂柳地1井钻井技术 ..... 李明星, 蒙学礼, 王嘉瑶, 杨明仙(64)  
页岩气地质调查井小口径绳索取心钻探技术分析 ..... 张强, 战启帅, 张文良, 赵东生, 李森(72)  
鹿邑凹陷海陆过渡相页岩气地质调查鹿页1井钻井技术 ..... 郝登峰, 齐治虎, 张晓昂, 秦红涛, 刘二伟(80)

#### 【钻完井技术】

河南省煤层气钻井技术发展历程及展望 ..... 张晓昂, 刘国卫, 齐治虎, 张留彬, 胡向志, 王立峰(86)  
准噶尔盆地玛页1井长筒取心技术 ..... 曹龙龙, 张恒春, 王稳石, 闫家, 徐小龙, 黄浩平, 胡晨(94)  
泸州深层页岩气水平段钻井提速关键技术 ..... 李奎(100)  
泸州深层页岩气呼吸性地层井漏堵漏方法及对策分析——以Y101H3-4井为例 ..... 李奎(106)  
东胜气田刘家沟组易漏地层随钻防漏技术研究 ..... 李德红, 罗宏志, 李明忠, 王翔, 张军义, 王健, 张辉(111)  
东胜气田致密砂岩气藏钻井储层保护研究及应用 ..... 冯永超(118)  
巴彦河套新区异形齿PDC钻头研究与应用 ..... 陈新海(127)  
银额盆地蒙苏地1井钻井设计与施工 ..... 钱锋, 赵远刚, 黄晓林, 石绍云, 罗显梁(136)

#### 【钻井装备】

国外钻井工具与仪器新进展及国内发展建议 ..... 李焱, 梁升平, 居迎军, 李凯凯(145)  
近钻头随钻测量系统及其小型化设计关键技术分析 ..... 韦海瑞, 朱芝同, 吴川, 邵玉涛, 赵洪波, 刘广, 贾炜, 董巍, 张化民, 贾明浩, 薛倩冰(156)  
近井口高压管汇布置结构设计及选材优化研究 ..... 谭建国, 洪毅, 张所邦, 王勇(163)

#### 【录井技术】

页岩气录井技术进展及展望 ..... 吴尤(171)

#### 【压裂技术】

基于扩展有限元分析的页岩水力压裂裂缝扩展规律探究 ..... 温继伟, 项天, 朱茂, 胡萍, 毛建设, 荆羽慧(177)  
贵州正安地区常压页岩气压裂关键技术 ..... 李龙, 陈显举, 彭安钰, 吴松, 迟焕鹏(189)  
海南流沙港组致密砂岩体积压裂工艺研究及应用 ..... 魏凯, 邓校国, 付杰, 张智勇, 李凯(194)

#### 【环境保护】

俄罗斯油气钻采废弃物处理及其利用研究 ..... 汤凤林, 赵荣欣, 周欣, 段隆臣, Третьяк А.А.(202)

# DRILLING ENGINEERING

Sep. 2022

Vol.49 No.5 (SUM No.433)

Bimonthly

## CONTENTS

Editor's notes of special issue on drilling and completion engineering for onshore oil & gas: Support oil & gas geological survey and serve for energy security .....	<i>Editorial Office of Drilling Engineering</i> (1)
Advances and research suggestions for onshore oil & gas survey drilling engineering for the public benefit .....	
..... <i>HE Yuanxin, HU Zhifang, SHAN Yansheng, WANG Shengjian, CHI Huanpeng, ZHU Disi, ZHAO Hongbo</i> (3)	
Shale gas drilling difficulties and their solutions in the lower reach of the Yangtze River (Anhui) .....	
..... <i>ZHU Disi, ZHAO Hongbo, LIU Enran, YUE Weimin, KANG Hairia, WANG Shengjian, XU Qiuchen, SHI Dishu, SHAN Wenjun, CHI Huanpeng, ZHENG Hongjun, LI Dayong</i> (11)	
Karst cave identification and treatment for a Lower Yangtze shale gas geological survey well .....	
..... <i>ZHAO Zhitao, JIANG Rui, LU Tong, ZHU Disi, XU Junjun, OUYANG Zhiyong, ZHU Wenjian</i> (22)	
Drilling technology of Well Wanwangdi-2 for shale oil and gas geological survey in Wangjiang Sag .....	
..... <i>YAN Jia, CAO Longlong, HU Chen, WANG Wenshi, ZHANG Hengchun, WANG Zhigang, LI Xinmiao</i> (30)	
Drilling technology of Well Ejiandi-4 for shale gas geological survey in western Hubei .....	
..... <i>LIU Wenwu, ZHU Wenjian, ZHAO Hongbo, MENG Fanyang, FENG Meigui, GUO Kun, LI Chao, JIANG Rui</i> (39)	
Drilling and downhole complex treatment of Well Xiangtaodi-1 for shale gas geological survey in Yuanma Basin .....	
..... <i>LI Zhengqian, FANG Yong, CHEN Xiaohong, LI Xubing</i> (48)	
Application of PVA1788 film-forming system solid-free drilling fluid in Well Guiliudi-1 .....	
..... <i>SU Licai, MENG Xueli, LI Yongwei, WANG Jiayao, LI Mingxing, FU Fan</i> (57)	
Drilling technology of Well Guiliudi-1 for shale gas geological survey in Guizhong depression .....	
..... <i>LI Mingxing, MENG Xueli, WANG Jiayao, YANG Mingxian</i> (64)	
Application of small diameter wire-line core drilling in shale gas geological wells .....	
..... <i>ZHANG Qiang, ZHAN Qishuai, ZHANG Wenliang, ZHAO Dongsheng, LI Sen</i> (72)	
Drilling technology of Well Luye-1 for shale gas geological survey in Luyi Sag .....	
..... <i>HAO Dengfeng, QI Zhihu, ZHANG Xiao'ang, QIN Hongtao, LIU Erwei</i> (80)	
Development and prospect of coalbed methane drilling technology in Henan province .....	
..... <i>ZHANG Xiao'ang, LIU Guowei, QI Zhihu, ZHANG Liubin, HU Xiangzhi, WANG Lifeng</i> (86)	
Long barrel coring technology for Well Maye-1 in Junggar Basin .....	
..... <i>CAO Longlong, ZHANG Hengchun, WANG Wenshi, YAN Jia, XU Xiaolong, HUANG Haoping, HU Chen</i> (94)	
Key technologies for improving deep shale gas horizontal drilling ROP in Luzhou .....	<i>LI Kui</i> (100)
Plugging of breathing formation in deep shale gas wells in Luzhou: Taking Well Y101H3-4 for example.....	<i>LI Kui</i> (106)
Technology of prevention leak while drilling for leaky formation in Liujiagou Formation in Dongsheng Gas Field .....	
..... <i>LI Dehong, LUO Hongzhi, LI Mingzhong, WANG Xiang, ZHANG Junyi, WANG Jian, ZHANG Hui</i> (111)	
Reservoir protection in drilling through the tight sandstone gas reservoir of Dongsheng Gas Field .....	<i>FENG Yongchao</i> (118)
Research and application of special-shaped tooth PDC bits in Bayanhetao New Area .....	<i>CHEN Xinhai</i> (127)
Drilling design and construction of Well Mengsudi-1 in Yingen-Ejinaqi Basin .....	
..... <i>QIAN Feng, ZHAO Yuangang, HUANG Xiaolin, SHI Shaoyun, LUO Xianliang</i> (136)	
New advances in drilling tools and instruments abroad and suggestions for domestic development .....	
..... <i>LI Yao, LIANG Shengping, JU Yingjun, LI Kaikai</i> (145)	
Analysis on current status and key technology of miniaturization design of near-bit MWD systems .....	
..... <i>WEI Hairui, ZHU Zhitong, WU Chuan, SHAO Yutao, ZHAO Hongbo, LIU Guang, JIA Wei, DONG Wei, ZHANG Huamin, JIA Minghao, XUE Qianbing</i> (156)	
Structural design and material selection optimization for high pressure manifolds near the wellhead .....	
..... <i>TAN Jianguo, HONG Yi, ZHANG Suobang, WANG Yong</i> (163)	
Progress and prospect of shale gas mud-logging technologies.....	<i>WU You</i> (171)
Investigation of shale hydraulic fracturing propagation laws based on extended finite element analysis.....	
..... <i>WEN Jiwei, XIANG Tian, ZHU Mao, HU Ping, MAO Jianshe, JIN Yuhui</i> (177)	
Key technologies for hydraulic fracturing of normal pressure shale gas in the Zheng'an area of Guizhou .....	
..... <i>LI Long, CHEN Xianju, PENG Anyu, WU Song, CHI Huanpeng</i> (189)	
Volume fracturing technology for tight sandstone reservoir stimulation in Liushagang Formation in Hainan .....	
..... <i>WEI Kai, DENG Xiaoguo, FU Jie, ZHANG Zhiyong, LI Kai</i> (194)	
Research on processing and use of wastes in oil and gas drilling and production in Russia .....	
..... <i>TANG Fenglin, ZHAO Rongxin, ZHOU Xin, DUAN Longchen, TRETYAK A.A.</i> (202)	

Sponsored: Geological Publishing House Co., Ltd.; Institute of Exploration Techniques, CAGS

Published: Editorial Office of Drilling Engineering (No.26 Baiwanzhuang, Beijing Postcode: 100037 E-mail: tkgc@mail.cgs.gov.cn)

Chief Editor: XIE Wenwei

International Distribution: China National Publishing Industry Trading Corporation (P.O.Box 782, Beijing)