2022, 18 (3): 683-700.

[12] 王秋实,齐晗兵,王美薇. 油田星形注水网络布局优化研究[J]. 节能技术,2013,31(4):356-358.
Wang Qiushi, Qi Hanbing, Wang Meiwei. Layout optimization of the star oilfield water injection network [J]. Energy Conservation Technology, 2013, 31 (4): 356-358.

[13] 殷桂琴,张公社,刘志军,等. 树枝状注水管网布局优化设计方法研究[J]. 断块油气田,2006,13(5):58-60.
Yin Guiqin, Zhang Gongshe, Liu Zhijun, et al. Method for layout optimization design of dendritic waterflooding pipeline networks [J]. Fault-Block Oil & Gas Field, 2006, 13 (5): 58-60.

[14] Wang Bohong, Liang Yongtu, Yuan Meng, et al. Optimal design of oilfield surface pipeline networks for the cyclic water injection development method [J]. Journal of Petroleum Science and Engineering, 2018, 171: 1400-1408.

[15] 姚　彬,丰慧霞,王博弘,等. 注水管网拓扑结构与管径优化[J]. 给水排水,2021,57(11):144-148.
Yao Bin, Feng Huixia, Wang Bohong, et al. Topology structure and diameter optimization of waterflooding pipeline network [J]. Water & Wastewater Engineering, 2021, 47 (11): 144-148.

[16] 张　昕,周星远,张浩然,等. 油田注水管网布局优化混合整数非线性规划模型[J]. 油气田地面工程,2020,39 (11):37-43.
Zhang Xin, Zhou Xingyuan, Zhang Haoran, et al. Mixed-integer nonlinear programming model for layout optimization of oilfield water injection pipeline network [J]. Oil-Gas Field Surface Engineering, 2020, 39 (11): 37-43.

[17] Xie Shuyi, Feng Huixia, Huang Zimeng, et al. Optimization of an existing water injection network in an oilfield for multi-period development [J]. Optimization and Engineering, 2024, 25 (1): 199-228.

[18] Sinha A, Malo P, Deb K. A review on bilevel optimization: From classical to evolutionary approaches and applications [J]. IEEE Transactions on Evolutionary Computation, 2018, 22 (2): 276-295.

[19] Soares I, Alves M J, Antunes C H. A deterministic bounding algorithm vs. a hybrid meta-heuristic to deal with a bilevel mixed-integer nonlinear optimization model for electricity dynamic pricing [J]. Computers & Operations Research, 2023, 155: 106195.

[20] 张　涛,谭晶纯,尹子钊. 基于统计过程控制的成品油损耗监控与管理[J]. 世界石油工业,2025,32(5):106-112.
Zhang Tao, Tan Jingchun, Yin Zizhao. Monitoring and management of refined oil product losses based on statistical process control [J]. World Petroleum Industry, 2025, 32 (5): 106-112.

国内深层煤层气单井台累产破纪录

2026 年 8 月 4 日从中石油煤层气公司获悉,该公司大吉气田吉深 12－8 井台投产 2 年多来,累计生产天然气突破 3 亿立方米,刷新了国内深层煤层气单井台累产纪录。

作为大吉气田规模最大的深层煤层气开发平台,吉深 12－8 井台创新采用单井台部署 8 口深层煤层气水平井的开发模式,于 2023 年 9 月正式投产。投产以来,煤层气公司立足气井全生命周期管理,推行精细化生产管控,落地“五步法”特色排采制度,通过焖井渗吸、控压稳流、调控促排、举升解堵、补能稳产等系统化技术举措,有效保障了井台长期平稳高效运行。

截至目前,8 口深层煤层气水平井全部实现高产稳产,单井累产均超 3 500 万立方米,产能后劲十足。

(杨　寒　摘编自中国石油新闻中心 https://news.cnpc.com.cn/system/2026/08/06/030199617.shtml)