

## 1. The reason and prevention measures for the rod and tubing wear of the pumping unit in the Bei 301 operation area

**Accession number:** 19080608

**Authors:** Xie, C.Y. (1); Ma, Y.Z. (1); Jing, Q.Y. (1); Zhang, G. (1); Sun, Y.S. (1); Liu, Q.H. (1)

**Author affiliation:** (1) Hulunbeier Subsidiary of Daqing Oilfield Co., Ltd., Hulunbeier, China

**Source title:** IOP Conference Series: Earth and Environmental Science

**Abbreviated source title:** IOP Conf. Ser., Earth Environ. Sci. (UK)

**Volume:** 354

**Publication date:** 2019

**Pages:** 012001 (6 pp.)

**Language:** English

**ISSN:** 1755-1307

**Document type:** Conference article (CA)

**Conference name:** 2019 International Conference on New Energy and Future Energy System

**Conference date:** 21-24 July 2019

**Conference location:** Macao, China

**Publisher:** IOP Publishing

**Country of publication:** UK

**Material Identity Number:** GB49-2019-185

**Abstract:** In order to study the effective prevention measures to improve the regulation effect of the anti-deflecting measure in Bei 301 operation area and prolong the pump cycle of the oil well. The calculation of the historical data of the eccentric wear well and the analysis of eccentric wear prevention effect show that eccentric wear condition in Bei 301 operation area of hailaer oilfield is relatively serious and the operating wells' ratio of rod breakage and tube leakage increases year by year due to eccentric wear [1,2]. In 2014, the proportion of rod breakage and tube leakage in the operating wells of the operation area was 19.4% and 45.2% respectively, and the average pump inspection cycle was around 400 days. The reasons for the serious wear of the rod pipe in Bei 301 operation area are the improper production parameters, the submergence depth, high water content and well fluid properties according to the detailed data analysis of the pump operation. Active eccentric wear prevention measures have some effect, and next research direction for preventing eccentric wear is put forward in this paper: the paraffin-removing technology, bi-directional protected box coupling and low friction pump combined with the problems faced by the operating area.

**Number of references:** 11

**Inspecc controlled terms:** data analysis - friction - inspection - oil technology - pipes - pumps - rods (structures) - wear

**Uncontrolled terms:** reason - tubing wear - Bei 301 operation area - effective prevention measures - eccentric wear prevention effect - eccentric wear condition - operating wells - rod breakage - tube leakage increases year - serious wear - pump operation - active eccentric wear prevention measures - operating area - time 400.0 d

**Inspecc classification codes:** E3020 Mining, oil drilling and natural gas industries - E1525 Industrial processes - E1560 Production equipment - E1710 Engineering materials

**Numerical data indexing:** time 3.456E+07 s

**Treatment:** Practical (PRA); Theoretical or Mathematical (THR)

**Discipline:** Manufacturing and production engineering (E)

**DOI:** 10.1088/1755-1315/354/1/012001

**IPC Code:** C10G - E21B43/00 - F04 - F16L

**Database:** Inspecc

Copyright 2019, The Institution of Engineering and Technology

**Data Provider:** Engineering Village