

中国油田开发丛书

刘丁曾 王启民 李伯虎 著

大庆多层砂岩油田开发

DEVELOPMENT OF MULTI-SANDSTONE RESERVOIRS IN DAOING OIL FIELD

THE SERIES
OF OIL FIELD
DEVELOPMENT IN

CHINA



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内 容 提 要

本书以大庆油田的开发为实例,系统地阐述了大型陆相油田、多油层非均质严重储层的地质特征、储量研究、开发部署、注水开发等过程中的水驱油特点,油田长期高产稳产的基本作法和采取的措施,油层高含水期开展聚合物驱和三元复合驱提高采收率研究和试验的效果。

本书可供从事油田开发的工程技术人员以及石油院校开发专业的师生参考。

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序

新中国成立以来，我国石油工业在党中央、国务院领导下，艰苦创业，取得了迅猛发展。特别是实行改革开放以来，我国石油、天然气产量持续稳定增长，科技水平和经营实力明显提高，发展进入到了一个新的阶段。

我国石油工业的发展历程，是一个艰苦的科学技术攻关的历程。这是由中国石油地质的特点决定的。我国现已开发的油气田，多为陆相沉积，地质构造复杂，断块发育，含油层系多，非均质性强，渗透性差别很大，原油性质多种多样。这些特征，都给我国油气田开发带来了许多特殊性和复杂性。40多年来，我国广大石油科技工作者和石油职工，在生产实践中不断探索，刻苦攻关，逐步发展创造了一套具有中国地质特点的陆相非均质油气田开发理论，以及相应的一整套陆相油气藏开发工艺技术和方法，推动我国油田开发不断发展达到了新的水平。

我国陆相油田开发是一场伟大的科学实践。《中国油田开发丛书》正是这一实践的总结。这套丛书，共分《复杂断块油田详探与开发》、《碳酸盐岩潜山油田开发》、《大庆多层砂岩油田开发》三册，比较系统地著述了我国陆相油田开发的实践与理论，展示了我国油田开发科学技术的成果和进步。相信它的编辑出版，必将给人以启迪，对指导今后油田开发起到积极的作用。同时也会有助于广大石油科技工作者和石油职工更好地了解我国石油工业的科技发展史，有助于世界更好地了解和认识中国的油气田开发工作和石油工业的发展，加强与同行之间的交流。这是一件很有意义和值得祝贺的事情。

石油工业在发展，科学技术在进步。我相信，经过我国广大科技工作者和石油职工坚持不懈的努力，中国陆相油田开发的理论和实践会不断有所创新，日臻充实和完善，推动我国油气田开发水平的不断提高和石油工业的发展。

王德林
1992.4

前 言

本书是由中国石油天然气总公司组织编写的《中国油田开发丛书》之一，是在石油工业出版社 1986 年出版的《多油层砂岩油田开发》一书的基础上编写的。成稿以后，《中国油田开发丛书》编委会曾两次组织有关专家对初稿进行了比较大的修改。

本书力图结合大庆油田开发的实际，从理论和实践的结合上，阐述多油层油田的开发过程，所采取的重大措施以及所取得的开发效果，使读者在了解和掌握多油层油田的开发技术上，能够有所启示和帮助。

全书由刘丁曾、王启民、李伯虎担任主编，李伯虎、宫文超、张洪兴、杨玉哲、刘丁曾、任玉林、王启民、张景存等同志参加了编写。大庆石油管理局总地质师巢华庆对该书的编辑出版工作给与了关注与支持。书中的资料及内容是大庆油田从事油田开发工作的同志共同研究的技术成果，为此，向所有提供资料和给与帮助的同志表示衷心的感谢。

多油层大油田的开发工作，范围很广，综合性很强。本书以大庆油田为例进行论述，难免会有一定的局限性，不妥之处，敬请广大读者批评指正。

作 者
一九九六年六月

The series of oil field development in China

Development of Multizone Sandstone Reservoirs in Daqing Oil Field

ABSTRACT

Taking the development of Daqing oil field for example, this book makes a systematic exposition of geological feature of the large multi-pay zones non-marine oil field with strong heterogeneity, reserves study, development strategy, characteristics of oil-water displacement during waterflooding development and the basic methodology and measures of keeping high and stable oil production of the field. Also the book discusses EOR by using polymerflooding and alkaline-surfactant-polymer recovery system at ultra high water cut stage in heterogeneous thick reservoirs and the knowledge and results obtained in EOR field tests.

The book can be used as a reference material for engineers and technicians dealing with oil field development, and teachers and students of petroleum colleges.

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