U.S. Geological Survey
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National Assessment of Oil and Gas Project:

Petroleum Systems and Geologic Assessment of Oil and Gas in the Uinta-Piceance Province, Utah and Colorado

By USGS Uinta-Piceance Assessment Team

U.S. DEPARTMENT OF THE INTERIOR
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U.S. GEOLOGICAL SURVEY
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Introduction

The purpose of the U.S. Geological Survey's (USGS) National Oil and Gas Assessment is to develop geology-based hypotheses regarding the potential for additions to oil and gas reserves in priority areas of the United States, focusing on the distribution, quantity, and availability of oil and natural gas resources. The USGS has recently completed an assessment of the undiscovered oil and gas potential of the Uinta-Piceance Province of northeastern Utah and northwestern Colorado (USGS Province 5020). The Uinta-Piceance Province is a priority province for the National Assessment because of its potential for significant natural gas resources.

The assessment of this province is based on geologic principles and uses the total petroleum system concept. The geologic elements of a total petroleum system include hydrocarbon source rocks (source rock maturation, hydrocarbon generation and migration), reservoir rocks (sequence stratigraphy, petrophysical properties), and hydrocarbon traps (trap formation and timing). In the Uinta-Piceance Province, the USGS used this geologic framework to define five total petroleum systems and 20 assessment units within the total petroleum systems, and quantitatively estimated the undiscovered oil and gas resources within each assessment unit.

Many more details about the project and about individual chapters of this report are readily available in the very readable Chapter 2 of this volume, "The Uinta-Piceance Province—Introduction to a geologic assessment of undiscovered oil and gas resources." Use Acrobat Reader to access the PDF for this chapter.

Contact Information

This volume is one of a series of products resulting from the National Oil and Gas Assessment project of the U.S. Geological Survey. Inquiries about this CD-ROM or the project should be addressed to:

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Using This CD

The descriptive and interpretive text chapters of this volume are in PDF format. Use Acrobat Reader 5.0 (installer for Mac and Windows provided on this CD) to access and bring up these chapters. Oversize plates are also in PDF format; they are listed in the CD in a folder called "Plates." Each plate is also linked from a page-size image within the chapter text where it is discussed; click on the image to go to the plate; a return button is included on the plate.

The PDF chapters are also accessible as defined by Section 508 of the Rehabilitation Act.

Chapter 21, on a Monte Carlo simulation method for assessment, contains two Excel files (emcee.xls and Emc2.xls) whose inclusion allows the user to follow and recapture the calculation processes of the chapter. See the disclaimer section in this ReadMe file. Because not necessarily every user of this CD has Excel on his/her system, a PDF of the file is also included here, for observation.

Chapter 28 contains tabular data and graphical images in support of the Uinta-Piceance Province assessment. The chapter text PDF contains links to the data and images. Data-table files are presented as tab-delimited text files (.tab files), usable in spreadsheet and database software. Graphical and summary-table files are presented as portable document format files (.pdf files).

GIS information is presented in the Spatial folder and its subdirectories that contain the spatial data, documentation, and export files. The Spatial folder also contains the ArcGIS project (up.mxd), the ArcReader project (up.pmf), and a description of the GIS project in both .htm and .pdf formats. The Spatial/Doc folder contains metadata for the Uinta-Piceance Province spatial data in .htm format. The Spatial/Export folder contains Arc/Info export files (.e00). The Spatial/Geodatabase folder contains an ArcGIS Personal Geodatabase that supplies the Annotation layers to the two GIS projects. The Spatial/Images folder contains images used in both the GIS projects and the Metadata documents. The Spatial/Shape folder contains ArcView/ArcGIS shapefiles used in the two GIS projects.

GIS Projects—Getting Started

Uinta-Piceance Province GIS Project Display Options

There are several display options available to view spatial data contained on this CD-ROM:

ArcMap

A customized ArcMap project has been included (SPATIAL/UP.mxd) to facilitate the display of the data. This project is included on the CD-ROM under the assumption that a large portion of viewers will have access to ArcMap software. While not necessary to view the data, it is expected that the use of this project will lend more functionality to the data.

The ArcMap project utilizes relative path names, which is an option when saving the file. To open the project, start ArcMap and navigate to the file location on this CD-ROM (SPATIAL/UP.mxd).

ArcReader

If ArcMap software is not available, the ArcMap project has been converted to an ArcReader project (SPATIAL/UP.pmf). ArcReader is free software provided byESRI. The ArcReader project maintains most of the functionality present in the ArcMap project. To open the ArcReader project, download the ArcReader software from ESRI; start ArcReader and navigate to the ArcReader .pmf file on this CD-ROM. This freeware may be downloaded from www.esri.com or follow the link below:
Arcreader can be downloaded for Windows from ESRI's website
http://www.esri.com/software/arcgis/arcreader/download.html

Other

The spatial data are also provided as ESRI Shape files (see SPATIAL/SHAPE folder) or as ArcInfo 8.2 Export files (see SPATIAL/EXPORT folder), should the user need to view the data in ArcInfo or a non-ESRI application

Contents of This CD-ROM

When the CD is opened, the following folders appear on the screen:
ACROBAT—contains installer for Acrobat Reader 5.0.
OPEN_FIRST—from OPEN_FIRST.pdf in this folder, navigate to the ReadMe file, an executive summary, pages of chapter titles, and the GIS data and metadata.
PLATES—listing of and links to oversize plates for the chapters.
README—you can access the ReadMe file from this folder also.
REPORTS—listing of and links to the chapters, plus oversize versions of images from chapter 16, the two Excel files from chapter 21, and the tabular data for chapter 28.
SPATIAL—folder containing files for the GIS data and metadata.

—In other words, there are several routes to the information in this volume.

System Requirements

MAC OS
- Power PC processor
- Mac OS 8.6*, 9.0.4, 9.1, or OS X*
- 64 MB of RAM
- 24 MB of available hard drive space for installation
- CD-ROM drive
- 70 MB additional hard drive space for Asian fonts (optional)

*Some features may not be available because of system limitations.

WINDOWS
- Intel Pentium processor
- Microsoft Windows Me, Windows 2000, Windows NT 4.0 with Service Pack 5 or later, Windows 98 Second Edition, or Windows 95 Service Release 2 (OSR 2)
- 64 MB of RAM

- 24 MB of available hard drive space for installation
- CD-ROM drive
- 70 MB additional hard drive space for Asian fonts (optional)

Note: Installers for Acrobat Reader 5.0 for Windows and Macintosh platforms are provided on this CD-ROM.

Requirements for ArcReader for Windows:

- 450 MHz Processor
- Microsoft Windows NT 4.0 with Service Pack 6a or Windows 2000 or Windows XP Home and Professional Editions
- 128 MB RAM
- 200 MB Disk Space

Requirements for ArcView 8.x for Windows:

- Microsoft Windows NT 4.0 with Service Pack 6a or Windows 2000 or Windows XP Home and Professional Editions
- 128 MB RAM, 256 Recommended

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