Tabular Data and Graphical Images in Support of the U.S. Geological Survey National and Global Petroleum Assessment Project—Sub-Saharan Africa

By T.R. Klett, R.R. Charpentier, and P.A. Le

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Volume Title Page

Chapter 15 of
Geologic Assessment of Undiscovered Hydrocarbon Resources of Sub-Saharan Africa
Compiled by Michael E. Brownfield

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Contents

Tabular Data and Graphical Images in Support of the U.S. Geological Survey National and Global Petroleum Assessment Project—Sub-Saharan Africa

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Introduction

This chapter describes data used in support of the U.S. Geological Survey (USGS) National and Global Petroleum Assessment Project (U.S. Geological Survey World Conventional Resources Assessment Team, 2012) for the assessments of geologic provinces of the sub-Saharan Africa region between 2009 and 2012. Digital tabular data used in this report and archival data that permit the user to perform further analyses are available elsewhere on this CD–ROM and online at http://energy.usgs.gov/OilGas/AssessmentsData/WorldPetroleumAssessment.aspx. Because of the number and variety of platforms and software available, graphical images are provided as Portable Document Format files (.pdf files) and tabular data are provided in a raw form as tab-delimited text files (.tab files) and as tab-delimited Microsoft Excel spreadsheet files (.xlsx).

Disclaimers

Data Sources

Crude oil, natural gas, and natural gas liquids production data and historical data for fields, reservoirs, and wells are derived from commercial databases leased and (or) purchased by the USGS, primarily the "International exploration and production database" (IHS Energy, 2005 to 2011). Production data include all volumetric and descriptive data such as cumulative production, remaining reserves, known recoverable volumes, major producing reservoirs, and petroleum type. Historical data includes field-discovery dates, well-completion dates, exploration objectives, and well depths. Data from these databases are subject to proprietary constraints, but derivative representations in the form of graphs and summary statistics are allowed to be published and were prepared for each assessment unit. To supplement commercial databases, additional data were obtained, where available, from operators, other domestic and foreign government agencies, and published geological reports.

Data Overview

This report provides various data files supporting the National and Global Petroleum Assessment Project (U.S. Geological Survey World Conventional Resources Assessment Team, 2012). The files contain data that are the sources for the various graphs, data tables, and summary tables used in the assessment process. Tabular data are provided as tab-delimited text files (.tab files), usable in most spreadsheet and database software, and Microsoft Excel spreadsheet files (.xlsx files). The .tab files are single spreadsheets. The .xlsx files contain multiple spreadsheets. Fractiles of the assessment results, given at the assessment unit level and for each of the commodities listed below), are contained in 12 worksheets within a single Microsoft Excel file and in 12 tab-delimited files (designated with two- or three-letter codes). The codes and commodities are as follows:

ROO Risked Oil in Oil Fields, in millions of barrels of oil (MMBO)

RGO Risked Gas in Oil Fields, in billions of cubic feet of gas (BCFG)

RNO Risked NGL in Oil Fields, in millions of barrels of NGL (MMBNGL)

COO Conditional Oil in Oil Fields, in millions of barrels of oil (MMBO)

CGO Conditional Gas in Oil Fields, in billions of cubic feet of gas (BCFG)

CNO Conditional NGL in Oil Fields, in millions of barrels of NGL (MMBNGL)

LO Largest Oil Field, in millions of barrels of oil (MMBO)

RGG Risked Gas in Gas Fields, in billions of cubic feet of gas (BCFG)

RLG Risked Liquids in Gas Fields, in millions of barrels of liquids (MMBL)

CGG Conditional Gas in Gas Fields, in billions of cubic feet of gas (BCFG)

CLG Conditional Liquids in Gas Fields, in millions of barrels of liquids (MMBL)

LG Largest Gas Field, in billions of cubic feet of gas (BCFG)

Likewise, fractiles of the assessment results, given at the geologic province level and for each of the commodities listed below, are contained in 8 worksheets within a single Microsoft Excel file and in 8 tab-delimited files (designated with two- or three-letter codes). The codes and commodities are as follows:

ROO Risked Oil in Oil Fields, in millions of barrels of oil (MMBO) (same as total oil)

RGO Risked Gas in Oil Fields, in billions of cubic feet of gas (BCFG)

RNO Risked NGL in Oil Fields, in millions of barrels of NGL (MMBNGL)

RGG Risked Gas in Gas Fields, in billions of cubic feet of gas (BCFG)

RLG Risked Liquids in Gas Fields, in millions of barrels of liquids (MMBL)

TG Total Gas, in billions of cubic feet of gas (BCFG)

TN Total NGL, in millions of barrels of natural gas liquids (MMBNGL)

TBOE Total BOE, in millions of barrels of oil equivalent (MMBOE)

Graphical and summary data are provided as Portable Document Format files (.pdf files). File name conventions for assessment units (AUs) and geologic provinces included in the assessed area are as follows.

Data Files

Assessment Unit (AU) Data Tables

AU Fractiles_#.(tab, xlsx)
AU Input_#.(tab, xlsx)
AU Summary_#.(tab, xlsx)

Names and Codes Table

Code List.(tab, xlsx)

Province-Level Data Tables

Province Fractiles_#.(tab, xlsx)
Province Summary_#.(tab, xlsx)

Official Input Forms

c########.pdf

Graphical Data

em########.pdf
g########.pdf
k########.pdf

The # symbol represents a numeric code that refers to region (#), province (####), or AU (########).

Data Tables

Prefixes are defined as follows. The AU Fractiles.(tab, xlsx) and Province Fractiles.(tab, xlsx) files contain volume-percent data of undiscovered petroleum allocated to geologic provinces and AUs. The AU Summary.(tab, xlsx) and Province Summary.(tab, xlsx) (summary of undiscovered resources) tables contain estimates of undiscovered petroleum resources along with parameters that express uncertainty in these estimates. The AU Input.(tab, xlsx) table contains input data from the "Geologic Data Form for Conventional Assessment Units" used in this assessment and provided in the Official Input Form files (c########.pdf, described below).

Official Input Forms

The official data-input forms used in the assessment process, called "Geologic Data Form for Conventional Assessment Units" are preserved as c########.pdf (c for conventional assessment units) files. Data from these individual input forms are tabulated in the AU Input.(tab, xlsx) file.

For identification purposes, numbers in the positions occupied by the four symbols "####" represent the region (first digit) and province codes. Files with these numbers contain data for the entire province. The petroleum system code is indicated by the next two digits and the assessment-unit code is given in the last two digits. Files having numbers in the positions occupied by the eight symbols "##########" (which represent the entire code for the assessment unit) contain data only for that assessment unit. Numbers from 01 to 59 represent conventional assessment units.

A hierarchical numeric code identifies each region, province, total petroleum system, and assessment unit. The criteria for assigning codes are uniform throughout the National and Global Petroleum Assessment Project and throughout all resulting publications. The numeric codes used in this study are listed below and tabulated in the Codes List.(tab, xlsx) file.

Unit	Name	Code
Region	Sub-Saharan Africa	7
Province	Senegal	7013
	Chad	7066
	Sud	7146
	West African Coastal	7173
	Gulf of Guinea	7183
	Niger Delta	7192
	West-Central Coastal	7203
	Tanzania Coastal	7273
	Orange River Basin	7303
	Mozambique Coastal	7343
	South African Coastal	7363
	Morondava	7373
	Seychelles	7417
Total Petroleum System	Cretaceous-Tertiary Composite	701301
	Cretaceous-Tertiary Composite	706601
	Cretaceous-Cenozoic Composite	714601
	Cretaceous Composite	717301
	Cretaceous Composite	718301
	Tertiary Niger Delta	719201
	Melania-Gamba	720301
	Cretaceous-Tertiary Composite	720302
	Congo Delta Composite	720303
	Kwanza Composite	720304
	Mesozoic-Cenozoic Composite	727301
	Mesozoic Composite	730301
	Mesozoic Composite	734301
	Mesozoic Composite	736301
	Mesozoic Composite	737301
	Mesozoic-Cenozoic Composite	741701
Assessment Units	Coastal Plain and Offshore	70130101
	Cretaceous-Tertiary Rifts	70660101
	Central African Rifts	71460101
	Mesozoic-Cenozoic Reservoirs	71730101
	Coastal Plain and Offshore	71830101
	Agbada Reservoirs	71920101
	Akata Reservoirs	71920102
	Gabon Subsalt	72030101
	Gabon Suprasalt	72030201
	Central Congo Delta and Carbonate Platform	72030301
	Central Congo Turbidites	72030302
	Kwanza-Namibe	72030401
	Mesozoic-Cenozoic Reservoirs	72730101
	Offshore	73030101
	Mesozoic-Cenozoic Reservoirs	73430101
	Mesozoic-Cenozoic Reservoirs	73630101
	Mesozoic-Cenozoic Reservoirs	73730101
	Seychelles Rifts	74170101

Graphical Data

The em########.pdf (output from the Monte Carlo program called EMC2) files contain statistics and graphs of input data (contained in the c########.pdf files) and estimated petroleum resource volumes for conventional assessment units. The data are defined in the various fractile and summary tables. The graphs contained in these files are derived from a report generated by a commercial software package. The quality of these pre-formatted graphs, therefore, does not necessarily meet USGS editorial standards.

The g########.pdf (grown recoverable volumes) and k########.pdf (known recoverable volumes) files contain graphs of exploration and discovery data for conventional assessment units. To protect the proprietary nature of the data, these files are not provided if the total number of accumulations in the assessment unit that are greater than or equal to the specified minimum size is less than four.

Two sets of exploration-activity and discovery-history graphs are provided for each of the assessment units, one set showing known field sizes (cumulative production plus remaining reserves) and the other showing field sizes that were adjusted to compensate for potential reserve growth that may occur in the next 30 years (labeled "grown"). Within each set of graphs, oil fields and gas fields are treated separately.

Forecasts of the potential fully developed (grown) sizes of undiscovered accumulations are made to aid in the estimation of undiscovered oil and gas resources in the assessment process. The exploration-activity and discovery-history graphs serve only as guides for the assessing geologists to estimate grown-size distributions of undiscovered accumulations. Two sets of graphs are constructed for each of the assessment units, one set showing known accumulation sizes and the other showing accumulation sizes that were adjusted to compensate for potential reserve growth that may occur in some time span in the future. The grown sizes and names of individual accumulations are not tabulated or released to the public, nor the sizes used to estimate overall reserve growth for any given assessment unit or area. Additionally, these estimated grown sizes are not used in any way for the World reserve-growth assessments.

The two sets of graphs are similarly formatted and include the following:

- Cumulative Number of New-Field Wildcat Wells vs. Drilling-Completion Year
- Number of New-Field Wildcat Wells vs. Drilling-Completion Year
- Oil- or Gas-Accumulation Size (million barrels of oil, MMBO, or billion cubic feet of gas, BCFG) vs. Oil- or Gas-Accumulation Rank by Size (With Respect to Discovery Halves or Thirds)
- Number of Oil or Gas Accumulations vs. Oil- or Gas-Accumulation Size Classes (MMBO or BCFG) (With Respect to Discovery Halves or Thirds)

- Volume of Oil or Gas (MMBO or BCFG) vs. Oil- or Gas-Accumulation Size Classes (MMBO or BCFG)
- Oil- or Gas-Accumulation Size (MMBO or BCFG) vs. Accumulation-Discovery Year
- Oil- or Gas-Accumulation Size (MMBO or BCFG) vs. Cumulative Number of New-Field Wildcat Wells
- Cumulative Oil or Gas Volume (MMBO or BCFG) vs. Accumulation-Discovery Year
- Cumulative Oil or Gas Volume (MMBO or BCFG) vs. Cumulative Number of New-Field Wildcat Wells
- Cumulative Number of Oil or Gas Accumulations vs. Accumulation-Discovery Year
- Cumulative Number of Oil or Gas Accumulations vs. Cumulative Number of New-Field Wildcat Wells
- Reservoir Depth, Oil or Gas Accumulations (ft) vs. Accumulation-Discovery Year
- Reservoir Depth, Oil or Gas Accumulations (ft) vs. Cumulative Number of New-Field Wildcat Wells
- Gas/Oil, Oil Accumulations (cubic feet of gas per barrel of oil, CFG/BO) vs. Mean Reservoir Depth (ft)
- NGL/Gas, Oil Accumulations (barrels of natural gas liquids per million cubic feet of gas, BNGL/MMCFG) vs. Mean Reservoir Depth (ft)
- Liquids/Gas, Gas Accumulations (barrels of oil and natural gas liquids per million cubic feet of gas, BL/MMCFG) vs. Mean Reservoir Depth (ft)
- Number of Reservoirs in Oil Accumulations vs. American Petroleum Institute (API) Gravity (Degrees)

If data are insufficient or do not exist, graphs are not provided. Therefore, not all graphs are included in all files.

File List

Data tables

AU Fractiles_7_CGG.tab
AU Fractiles_7_CGO.tab
AU Fractiles_7_CLG.tab
AU Fractiles_7_CLO.tab
AU Fractiles_7_COO.tab
AU Fractiles_7_LG.tab
AU Fractiles_7_LO.tab
AU Fractiles_7_RGG.tab
AU Fractiles_7_RGO.tab
AU Fractiles_7_RLG.tab
AU Fractiles_7_RLO.tab
AU Fractiles_7_ROO.tab
AU Fractiles_7.xlsx
AU Input_7.tab
AU Input_7.xlsx
AU Summary_7.tab
AU Summary_7.xlsx
Province Fractiles_7_RGG.tab
Province Fractiles_7_RGO.tab
Province Fractiles_7_RLG.tab
Province Fractiles_7_RLO.tab
Province Fractiles_7_ROO.tab
Province Fractiles_7_TBOE.tab
Province Fractiles_7_TG.tab
Province Fractiles_7_TL.tab
Province Fractiles_7.xlsx
Province Summary_7.tab
Province Summary_7.xlsx

Official input forms	Assessment unit name
c70130101.pdf	Coastal Plain and Offshore
c70660101.pdf	Cretaceous-Tertiary Rifts
c71460101.pdf	Central African Rifts
c71730101.pdf	Mesozoic-Cenozoic Reservoirs
c71830101.pdf	Coastal Plain and Offshore
c71920101.pdf	Agbada Reservoirs
c71920102.pdf	Akata Reservoirs
c72030101.pdf	Gabon Subsalt
c72030201.pdf	Gabon Suprasalt
c72030301.pdf	Central Congo Delta and Carbonate Platform
c72030302.pdf	Central Congo Turbidites
c72030401.pdf	Kwanza-Namibe
c72730101.pdf	Mesozoic-Cenozoic Reservoirs
c73030101.pdf	Offshore
c73430101.pdf	Mesozoic-Cenozoic Reservoirs
c73630101.pdf	Mesozoic-Cenozoic Reservoirs
c73730101.pdf	Mesozoic-Cenozoic Reservoirs
c74170101.pdf	Seychelles Rifts

Graphs	Assessment unit name
em70130101.pdf	Coastal Plain and Offshore
em70660101.pdf	Cretaceous-Tertiary Rifts
em71460101.pdf	Central African Rifts
em71730101.pdf	Mesozoic-Cenozoic Reservoirs
em71830101.pdf	Coastal Plain and Offshore
em71920101.pdf	Agbada Reservoirs
em71920102.pdf	Akata Reservoirs
em72030101.pdf	Gabon Subsalt
em72030201.pdf	Gabon Suprasalt
em72030301.pdf	Central Congo Delta and Carbonate Platform

Graphs	Assessment unit name
em72030302.pdf	Central Congo Turbidites
em72030401.pdf	Kwanza-Namibe
em72730101.pdf	Mesozoic-Cenozoic Reservoirs
em73030101.pdf	Offshore
em73430101.pdf	Mesozoic-Cenozoic Reservoirs
em73630101.pdf	Mesozoic-Cenozoic Reservoirs
em73730101.pdf	Mesozoic-Cenozoic Reservoirs
em74170101.pdf	Seychelles Rifts
g70130101.pdf	Coastal Plain and Offshore
g70660101.pdf	Cretaceous-Tertiary Rifts
g71460101.pdf	Central African Rifts
g71830101.pdf	Coastal Plain and Offshore
g71920101.pdf	Agbada Reservoirs
g71920102.pdf	Akata Reservoirs
g72030101.pdf	Gabon Subsalt
g72030201.pdf	Gabon Suprasalt
g72030301.pdf	Central Congo Delta and Carbonate Platform
g72030302.pdf	Central Congo Turbidites
g72030401.pdf	Kwanza-Namibe
g72730101.pdf	Mesozoic-Cenozoic Reservoirs
g73030101.pdf	Offshore
g73430101.pdf	Mesozoic-Cenozoic Reservoirs
g73630101.pdf	Mesozoic-Cenozoic Reservoirs
k70130101.pdf	Coastal Plain and Offshore
k70660101.pdf	Cretaceous-Tertiary Rifts
k71460101.pdf	Central African Rifts
k71830101.pdf	Coastal Plain and Offshore
k71920101.pdf	Agbada Reservoirs
k71920102.pdf	Akata Reservoirs
k72030101.pdf	Gabon Subsalt
k72030201.pdf	Gabon Suprasalt
k72030301.pdf	Central Congo Delta and Carbonate Platform
k72030302.pdf	Central Congo Turbidites
k72030401.pdf	Kwanza-Namibe
k72730101.pdf	Mesozoic-Cenozoic Reservoirs
k73030101.pdf	Offshore
k73430101.pdf	Mesozoic-Cenozoic Reservoirs
k73630101.pdf	Mesozoic-Cenozoic Reservoirs

Tabular Data

AU Fractiles.(tab, xlsx)

AU Fractiles.(tab, xlsx) are files containing a table (.tab) or tables (.xlsx) of fractiles from the results of the Monte Carlo calculations of undiscovered oil and gas resources for individual assessment units. Cells are left blank if data are unavailable. Twelve worksheets in the .xlsx files and 12 separate .tab files corresponding to each product and risk in the following list are provided.

ROO Risked Oil in Oil Fields, in millions of barrels of oil (MMBO)

RGO Risked Gas in Oil Fields, in billions of cubic feet of gas (BCFG)

RNO Risked NGL in Oil Fields, in millions of barrels of NGL (MMBNGL)

COO Conditional Oil in Oil Fields, in millions of barrels of oil (MMBO)

CGO Conditional Gas in Oil Fields, in billions of cubic feet of gas (BCFG)

CNO Conditional NGL in Oil Fields, in millions of barrels of NGL (MMBNGL)

LO Largest Oil Field, in millions of barrels of oil (MMBO)

RGG Risked Gas in Gas Fields, in billions of cubic feet of gas (BCFG)

RLG Risked Liquids in Gas Fields, in millions of barrels of liquids (MMBL)

CGG Conditional Gas in Gas Fields, in billions of cubic feet of gas (BCFG)

CLG Conditional Liquids in Gas Fields, in millions of barrels of liquids (MMBL)

LG Largest Gas Field, in billions of cubic feet of gas (BCFG)

The table contains 48 columns. Data columns are:

1. AU Code—USGS assessment unit code number
2. AU Name—USGS assessment unit name
3. Scenario Code—USGS scenario code number
4. Scenario Name—USGS scenario name
5. TPS Code—USGS total petroleum system code number
6. TPS Name—USGS total petroleum system name
7. Province Code—USGS province code number
8. Province Name—USGS province name
9. Region Code—USGS region code number
10. Region Name—USGS region name
11. Product—the product from the list of twelve products given above

12. Trials—the number of trials used in the Monte Carlo simulation to estimate the distribution
13. Mean—the estimated mean value of resource
14. Median—the estimated median (F50) value of resource
15. Mode—the estimated modal (most likely) value of resource, provided only when the program identifies a clearly defined mode
16. Standard Deviation—the standard deviation of the distribution of estimated resource
17. Variance—the variance of the distribution of estimated resource
18. Skewness—the skewness of the distribution of estimated resource
19. Kurtosis—the kurtosis of the distribution of estimated resource
20. Coefficient of Variability—the coefficient of variability of the distribution of estimated resource
21. Minimum—the minimum (F100) of the distribution of estimated resource
22. Maximum—the maximum (F0) of the distribution of estimated resource
23. Range Width—the range between the minimum and maximum values of the distribution of estimated resource
24. Mean Standard Error—the mean standard error of the distribution of estimated resource
25. Filtered Values—the number of trials filtered out in the Monte Carlo simulation
26. F100—the estimated value of resource such that there is a 100 percent probability that this amount or more exists in the assessment unit. This is the minimum.
27. F95—the estimated value of resource such that there is a 95 percent probability that this amount or more exists in the assessment unit
28. F90—the estimated value of resource such that there is a 90 percent probability that this amount or more exists in the assessment unit
29. F85—the estimated value of resource such that there is a 85 percent probability that this amount or more exists in the assessment unit
30. F80—the estimated value of resource such that there is a 80 percent probability that this amount or more exists in the assessment unit
31. F75—the estimated value of resource such that there is a 75 percent probability that this amount or more exists in the assessment unit
32. F70—the estimated value of resource such that there is a 70 percent probability that this amount or more exists in the assessment unit
33. F65—the estimated value of resource such that there is a 65 percent probability that this amount or more exists in the assessment unit
34. F60—the estimated value of resource such that there is a 60 percent probability that this amount or more exists in the assessment unit
35. F55—the estimated value of resource such that there is a 55 percent probability that this amount or more exists in the assessment unit
36. F50—the estimated value of resource such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median.
37. F45—the estimated value of resource such that there is a 45 percent probability that this amount or more exists in the assessment unit
38. F40—the estimated value of resource such that there is a 40 percent probability that this amount or more exists in the assessment unit
39. F35—the estimated value of resource such that there is a 35 percent probability that this amount or more exists in the assessment unit
40. F30—the estimated value of resource such that there is a 30 percent probability that this amount or more exists in the assessment unit
41. F25—the estimated value of resource such that there is a 25 percent probability that this amount or more exists in the assessment unit
42. F20—the estimated value of resource such that there is a 20 percent probability that this amount or more exists in the assessment unit
43. F15—the estimated value of resource such that there is a 15 percent probability that this amount or more exists in the assessment unit
44. F10—the estimated value of resource such that there is a 10 percent probability that this amount or more exists in the assessment unit
45. F5—the estimated value of resource such that there is a 5 percent probability that this amount or more exists in the assessment unit

46. F0—the estimated value of resource such that there is no probability that this amount or more exists in the assessment unit. This is the maximum.

47. Overall Oil Field Probability—the probability that there exists at least one undiscovered oil field equal to or larger than the minimum field size somewhere in the assessment unit. Overall oil field probability is given as a fractional value from 0 to 1.0.

48. Overall Gas Field Probability—the probability that there exists at least one undiscovered gas field equal to or larger than the minimum field size somewhere in the assessment unit. Overall gas field probability is given as a fractional value from 0 to 1.0.

AU Input.(tab, xlsx)

The AU Input.(tab, xlsx) are files containing input data from the official input forms used in the assessment process. Blank cells represent no data. This file contains 268 columns. Data columns are:

1. AU Code—USGS assessment unit code number
2. AU Name—USGS assessment unit name
3. Scenario Code—USGS scenario code number
4. Scenario Name—USGS scenario name
5. TPS Code—USGS total petroleum system code number
6. TPS Name—USGS total petroleum system name
7. Province Code—USGS province code number
8. Province Name—USGS province name
9. Region Code—USGS region code number
10. Region Name—USGS region name
11. Province Geologist—assessor's name
12. Date—date of assessment
13. Based on Data as of—cutoff date used for defining discovered versus undiscovered fields; also versions of databases used in the assessment
14. Notes1—space for notes; if the assessment unit was not quantitatively assessed it is noted here.
15. Notes2—additional space for notes
16. Notes3—additional space for notes
17. Area—area of the assessment unit in square kilometers
18. Minimum Size—minimum field size, in million barrels of oil equivalent, considered for assessment
19. Number Oil > Minimum—number of discovered oil fields equal to or larger than the minimum field size in the assessment unit
20. Number Gas > Minimum—number of discovered gas fields equal to or larger than the minimum field size in the assessment unit
21. Producing fields—a characterization of exploration maturity (along with columns 23, 25, 27, and 28); checked if there is at least one producing field in the assessment unit
22. Number of Producing fields—number of producing fields in the assessment unit
23. Discoveries—a characterization of exploration maturity (along with columns 21, 25, 27, and 28); denoted if there has been at least one field discovery in the assessment unit but no producing fields
24. Number of Discoveries—number of field discoveries in the assessment unit
25. Wells—a characterization of exploration maturity (along with columns 21, 23, 27, and 28); checked if there has been at least one well drilled in the assessment unit but no discoveries
26. Number of Wells—number of wells drilled in the assessment unit
27. Seismic—a characterization of exploration maturity (along with columns 21, 23, 25, and 28); checked if there has been seismic run in the assessment unit but no wells drilled
28. No Seismic—a characterization of exploration maturity (along with columns 21, 23, 25, and 27); checked if there has been no seismic run in the assessment unit
29. Med Oil 1st 3rd—median size, in million barrels of oil, of the set of discovered oil fields that constitute the first third or half of the total number of oil fields ranked according to date of discovery within the assessment unit
30. Med Oil 2nd 3rd—median size, in million barrels of oil, of the set of discovered oil fields that constitute the second third or half of the total number of oil fields ranked according to date of discovery within the assessment unit
31. Med Oil 3rd 3rd—median size, in million barrels of oil, of the set of discovered oil fields that constitute the third third of the total number of oil fields ranked according to date of discovery within the assessment unit
32. Med Gas 1st 3rd—median size, in billion cubic feet of gas, of the set of discovered gas fields that constitute the first third or half of the total number of gas fields ranked according to date of discovery within the assessment unit

33. Med Gas 2nd 3rd—median size, in billion cubic feet of gas, of the set of discovered gas fields that constitute the second third or half of the total number of gas fields ranked according to date of discovery within the assessment unit

34. Med Gas 3rd 3rd—median size, in billion cubic feet of gas, of the set of discovered gas fields that constitute the third third of the total number of gas fields ranked according to date of discovery within the assessment unit

35. Analog Purpose 1—assessment variables for which the first analog set was used

36. Analog Set 1a—description of first analog set

37. Analog Set 1b—description of first analog set

38. Analog Set 1c—description of first analog set

39. Analog Purpose 2—assessment variables for which the second analog set was used

40. Analog Set 2a—description of second analog set

41. Analog Set 2b—description of second analog set

42. Analog Set 2c—description of second analog set

43. Analog Purpose 3—assessment variables for which the third analog set was used

44. Analog Set 3a—description of third analog set

45. Analog Set 3b—description of third analog set

46. Analog Set 3c—description of third analog set

47. Analog Purpose 4—assessment variables for which the fourth analog set was used

48. Analog Set 4a—description of fourth analog set

49. Analog Set 4b—description of fourth analog set

50. Analog Set 4c—description of fourth analog set

51. Scenario Probability—the probability associated with a particular scenario. The total of all scenario probabilities in an AU must equal 1. Scenario probability is given as a fractional value from 0 to 1.0.

52. Charge—probability for adequate petroleum charge for at least one undiscovered field equal to or larger than the minimum field size, somewhere in the assessment unit. Charge is given as a fractional value from 0 to 1.0.

53. Rocks—probability for adequate reservoirs, traps, and seals for at least one undiscovered field equal to or larger than the minimum field size, somewhere in the assessment unit. Rocks is given as a fractional value from 0 to 1.0.

54. Timing—probability for favorable geologic timing for at least one undiscovered field equal to or larger than the minimum field size, somewhere in the assessment unit. Timing is given as a fractional value from 0 to 1.0.

55. AU Probability—the product of charge, rocks, and timing probabilities. AU probability is given as a fractional value from 0 to 1.0.

56. Total Fields Minimum Number—estimated minimum (F100) number of undiscovered fields equal to or larger than the minimum field size in the assessment unit

57. Total Fields Median Number—estimated median (F50) number of undiscovered fields equal to or larger than the minimum field size in the assessment unit

58. Total Fields Maximum Number—estimated maximum (F0) number of undiscovered fields equal to or larger than the minimum field size in the assessment unit

59. Oil/Gas Mix Minimum—minimum estimated measure of the mix of undiscovered oil and gas fields in the assessment unit

60. (60) Oil/Gas Mix Median—median estimated measure of the mix of undiscovered oil and gas fields in the assessment unit

61. Oil/Gas Mix Maximum—maximum estimated measure of the mix of undiscovered oil and gas fields in the assessment unit

62. Oil/Gas Type 1—option used for oil/gas mix (columns 58 to 60); type 1 is the number of oil accumulations divided by the number of total accumulations

63. Oil/Gas Type 2—option used for oil/gas mix (columns 58 to 60); type 2 is the number of oil accumulations divided by the number of gas accumulations

64. Oil/Gas Type 3—option used for oil/gas mix (columns 58 to 60); type 3 is the number of gas accumulations divided by the number of oil accumulations

65. Oil Fields Minimum Number—estimated minimum (F100) number of undiscovered oil fields equal to or larger than the minimum field size in the assessment unit

66. Oil Fields Median Number—estimated median (F50) number of undiscovered oil fields equal to or larger than the minimum field size in the assessment unit

67. Oil Fields Maximum Number—estimated maximum (F0) number of undiscovered oil fields equal to or larger than the minimum field size in the assessment unit

68. Gas Fields Minimum Number—estimated minimum (F100) number of undiscovered gas fields equal to or larger than the minimum field size in the assessment unit

69. Gas Fields Median Number—estimated median (F50) number of undiscovered gas fields equal to or larger than the minimum field size in the assessment unit

70. Gas Fields Maximum Number—estimated maximum (F0) number of undiscovered gas fields equal to or larger than the minimum field size in the assessment unit

71. Oil Fields Minimum Size—estimated minimum (F100) size, in million barrels of oil, of undiscovered oil fields in the assessment unit

72. Oil Fields Median Size—estimated median (F50) size, in million barrels of oil, of undiscovered oil fields in the assessment unit

73. Oil Fields Maximum Size—estimated maximum (F0) size, in million barrels of oil, of undiscovered oil fields in the assessment unit

74. Gas Fields Minimum Size—estimated minimum (F100) size, in billion cubic feet of gas, of undiscovered gas fields in the assessment unit

75. Gas Fields Median Size—estimated median (F50) size, in billion cubic feet of gas, of undiscovered gas fields in the assessment unit

76. Gas Fields Maximum Size—estimated maximum (F0) size, in billion cubic feet of gas, of undiscovered gas fields in the assessment unit

77. Minimum GOR—estimated minimum (F100) gas to oil ratio (GOR), in cubic feet of gas per barrel of oil, of undiscovered oil fields in the assessment unit

78. Median GOR—estimated median (F50) gas to oil ratio (GOR), in cubic feet of gas per barrel of oil, of undiscovered oil fields in the assessment unit

79. Maximum GOR—estimated maximum (F0) gas to oil ratio (GOR), in cubic feet of gas per barrel of oil, of undiscovered oil fields in the assessment unit

80. Minimum NGLGR—estimated minimum (F100) natural gas liquids (NGL) to gas ratio, in barrels of natural gas liquids per million cubic feet of gas, of undiscovered oil fields in the assessment unit

81. Median NGLGR—estimated median (F50) natural gas liquids (NGL) to gas ratio, in barrels of natural gas liquids per million cubic feet of gas, of undiscovered oil fields in the assessment unit

82. Maximum NGLGR—estimated maximum (F0) natural gas liquids (NGL) to gas ratio, in barrels of natural gas liquids per million cubic feet of gas, of undiscovered oil fields in the assessment unit

83. Minimum LGR—estimated minimum (F100) liquids (oil plus natural gas liquids) to gas ratio (LGR), in barrels of liquids per million cubic feet of gas, of undiscovered gas fields in the assessment unit

84. Median LGR—estimated median (F50) liquids (oil plus natural gas liquids) to gas ratio (LGR), in barrels of liquids per million cubic feet of gas, of undiscovered gas fields in the assessment unit

85. Maximum LGR—estimated maximum (F0) liquids (oil plus natural gas liquids) to gas ratio (LGR), in barrels of liquids per million cubic feet of gas, of undiscovered gas fields in the assessment unit

86. API Minimum—estimated minimum (F100) API gravity, in degrees, of oil in undiscovered oil fields in the assessment unit

87. API Median—estimated median (F50) API gravity, in degrees, of oil in undiscovered oil fields in the assessment unit

88. API Maximum—estimated maximum (F0) API gravity, in degrees, of oil in undiscovered oil fields in the assessment unit

89. Viscosity Minimum—estimated minimum (F100) viscosity, in centipoise, of oil in undiscovered oil fields in the assessment unit

90. Viscosity Median—estimated median (F50) viscosity, in centipoise, of oil in undiscovered oil fields in the assessment unit

91. Viscosity Maximum—estimated maximum (F0) viscosity, in centipoise, of oil in undiscovered oil fields in the assessment unit

92. Sulfur Minimum—estimated minimum (F100) sulfur content, in percent, of oil in undiscovered oil fields in the assessment unit

93. Sulfur Median—estimated median (F50) sulfur content, in percent, of oil in undiscovered oil fields in the assessment unit

94. Sulfur Maximum—estimated maximum (F0) sulfur content, in percent, of oil in undiscovered oil fields in the assessment unit

95. Oil Water Depth Minimum—estimated minimum (F100) water depth, in meters, of undiscovered oil fields in the assessment unit (ocean, bays, or lakes, if applicable)

96. Oil Water Depth Median—estimated median (F50) water depth, in meters, of undiscovered oil fields in the assessment unit (ocean, bays, or lakes, if applicable)

97. Oil Water Depth Maximum—estimated maximum (F0) water depth, in meters, of undiscovered oil fields in the assessment unit (ocean, bays, or lakes, if applicable)

98. Oil Drilling Depth Minimum—estimated minimum (F100) drilling depth, in meters, of undiscovered oil fields in the assessment unit

99. Oil Drilling Depth F75—estimated (F75) drilling depth, in meters, such that 75 percent of the undiscovered oil fields in the assessment unit would be deeper than this value

100. Oil Drilling Depth Median—estimated median (F50) drilling depth, in meters, of undiscovered oil fields in the assessment unit

101. Oil Drilling Depth F25—estimated (F25) drilling depth, in meters, such that 25 percent of the undiscovered oil fields in the assessment unit would be deeper than this value

102. Oil Drilling Depth Maximum—estimated maximum (F0) drilling depth, in meters, of undiscovered oil fields in the assessment unit

103. Inert Gas Minimum—estimated minimum (F100) inert gas content, in percent, of gas in undiscovered gas fields in the assessment unit (nitrogen, helium, etc.)

104. Inert Gas Median—estimated median (F50) inert gas content, in percent, of gas in undiscovered gas fields in the assessment unit (nitrogen, helium, etc.)

105. Inert Gas Maximum—estimated maximum (F0) inert gas content, in percent, of gas in undiscovered gas fields in the assessment unit (nitrogen, helium, etc.)

106. CO2 Minimum—estimated minimum (F100) carbon dioxide content, in percent, of gas in undiscovered gas fields in the assessment unit

107. CO2 Median—estimated median (F50) carbon dioxide content, in percent, of gas in undiscovered gas fields in the assessment unit

108. CO2 Maximum—estimated maximum (F0) carbon dioxide content, in percent, of gas in undiscovered gas fields in the assessment unit

109. H2S Minimum—estimated minimum (F100) hydrogen sulfide content, in percent, of gas in undiscovered gas fields in the assessment unit

110. H2S Median—estimated median (F50) hydrogen sulfide content, in percent, of gas in undiscovered gas fields in the assessment unit

111. H2S Maximum—estimated maximum (F0) hydrogen sulfide content, in percent, of gas in undiscovered gas fields in the assessment unit

112. Gas Water Depth Minimum—estimated minimum (F100) water depth, in meters, of undiscovered gas fields in the assessment unit (ocean, bays, or lakes, if applicable)

113. Gas Water Depth Median—estimated median (F50) water depth, in meters, of undiscovered gas fields in the assessment unit (ocean, bays, or lakes, if applicable)

114. Gas Water Depth Maximum—estimated maximum (F0) water depth, in meters, of undiscovered gas fields in the assessment unit (ocean, bays, or lakes, if applicable)

115. Gas Drilling Depth Minimum—estimated minimum (F100) drilling depth, in meters, of undiscovered gas fields in the assessment unit

116. Gas Drilling Depth F75—estimated median (F75) drilling depth, in meters, such that 75 percent of the undiscovered gas fields in the assessment unit would be deeper than this value

117. Gas Drilling Depth Median—estimated median (F50) drilling depth, in meters, of undiscovered gas fields in the assessment unit

118. Gas Drilling Depth F25—estimated median (F25) drilling depth, in meters, such that 25 percent of the undiscovered gas fields in the assessment unit would be deeper than this value

119. Gas Drilling Depth Maximum—estimated maximum (F0) drilling depth, in meters, of undiscovered gas fields in the assessment unit

120. N of AC Area %—areal percent of the assessment unit north of the Arctic Circle

121. N of AC Oil Volume %—volume percent of oil in undiscovered oil fields north of the Arctic Circle

122. N of AC Gas Volume %—volume percent of gas in undiscovered gas fields north of the Arctic Circle

123. S of AC Area %—areal percent of the assessment unit south of the Arctic Circle

124. S of AC Oil Volume %—volume percent of oil in undiscovered oil fields south of the Arctic Circle

125. S of AC Gas Volume %—volume percent of gas in undiscovered gas fields south of the Arctic Circle

126. Offshore Area %—areal percent of the assessment unit offshore

127. Offshore Oil Volume %—volume percent of oil in undiscovered oil fields offshore

128. Offshore Gas Volume %—volume percent of gas in undiscovered gas fields offshore

129. Country 1—first country for allocation of onshore resources

130. Country 1 Area %—areal percent of the assessment unit in the onshore of the first country

131. Country 1 Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the first country
132. Country 1 Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the first country
133. Country 2—second country for allocation of onshore resources
134. Country 2 Area %—areal percent of the assessment unit in the onshore of the second country
135. Country 2 Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the second country
136. Country 2 Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the second country
137. Country 3—third country for allocation of onshore resources
138. Country 3 Area %—areal percent of the assessment unit in the onshore of the third country
139. Country 3 Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the third country
140. Country 3 Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the third country
141. Country 4—fourth country for allocation of onshore resources
142. Country 4 Area %—areal percent of the assessment unit in the onshore of the fourth country
143. Country 4 Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the fourth country
144. Country 4 Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the fourth country
145. Country 5—fifth country for allocation of onshore resources
146. Country 5 Area %—areal percent of the assessment unit in the onshore of the fifth country
147. Country 5 Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the fifth country
148. Country 5 Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the fifth country
149. Country 6—sixth country for allocation of onshore resources
150. Country 6 Area %—areal percent of the assessment unit in the onshore of the sixth country
151. Country 6 Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the sixth country
152. Country 6 Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the sixth country
153. Country 7—seventh country for allocation of onshore resources
154. Country 7 Area %—areal percent of the assessment unit in the onshore of the seventh country
155. Country 7 Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the seventh country
156. (156) Country 7 Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the seventh country
157. Province 1 Code—code for first province for allocation of resources
158. Province 1 Name—name of first province for allocation of resources
159. Province 1 Onshore Area %—areal percent of the assessment unit in the onshore of the first province
160. Province 1 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the first province
161. Province 1 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the first province
162. Province 1 Offshore Area %—areal percent of the assessment unit in the offshore of the first province
163. Province 1 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the first province
164. Province 1 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the first province
165. Province 2 Code—code for second province for allocation of resources
166. Province 2 Name—name of second province for allocation of resources
167. Province 2 Onshore Area %—areal percent of the assessment unit in the onshore of the second province

168. Province 2 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the second province

169. Province 2 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the second province

170. Province 2 Offshore Area %—areal percent of the assessment unit in the offshore of the second province

171. Province 2 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the second province

172. Province 2 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the second province

173. Province 3 Code—code for third province for allocation of resources

174. Province 3 Name—name of third province for allocation of resources

175. Province 3 Onshore Area %—areal percent of the assessment unit in the onshore of the third province

176. Province 3 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the third province

177. Province 3 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the third province

178. Province 3 Offshore Area %—areal percent of the assessment unit in the offshore of the third province

179. Province 3 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the third province

180. Province 3 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the third province

181. Province 4 Code—code for fourth province for allocation of resources

182. Province 4 Name—name of fourth province for allocation of resources

183. Province 4 Onshore Area %—areal percent of the assessment unit in the onshore of the fourth province

184. Province 4 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the fourth province

185. Province 4 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the fourth province

186. Province 4 Offshore Area %—areal percent of the assessment unit in the offshore of the fourth province

187. Province 4 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the fourth province

188. Province 4 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the fourth province

189. Province 5 Code—code for fifth province for allocation of resources

190. Province 5 Name—name of fifth province for allocation of resources

191. Province 5 Onshore Area %—areal percent of the assessment unit in the onshore of the fifth province

192. Province 5 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the fifth province

193. Province 5 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the fifth province

194. Province 5 Offshore Area %—areal percent of the assessment unit in the offshore of the fifth province

195. Province 5 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the fifth province

196. Province 5 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the fifth province

197. Province 6 Code—code for sixth province for allocation of resources

198. Province 6 Name—name of sixth province for allocation of resources

199. Province 6 Onshore Area %—areal percent of the assessment unit in the onshore of the sixth province

200. Province 6 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the sixth province

201. Province 6 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the sixth province

202. Province 6 Offshore Area %—areal percent of the assessment unit in the offshore of the sixth province

203. Province 6 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the sixth province

204. Province 6 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the sixth province

205. Province 7 Code—code for seventh province for allocation of resources

206. Province 7 Name—name of seventh province for allocation of resources

207. Province 7 Onshore Area %—areal percent of the assessment unit in the onshore of the seventh province

208. Province 7 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the seventh province

209. Province 7 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the seventh province

210. Province 7 Offshore Area %—areal percent of the assessment unit in the offshore of the seventh province

211. Province 7 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the seventh province

212. Province 7 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the seventh province

213. Province 8 Code—code for eighth province for allocation of resources

214. Province 8 Name—name of eighth province for allocation of resources

215. Province 8 Onshore Area %—areal percent of the assessment unit in the onshore of the eighth province

216. Province 8 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the eighth province

217. Province 8 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the eighth province

218. Province 8 Offshore Area %—areal percent of the assessment unit in the offshore of the eighth province

219. Province 8 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the eighth province

220. Province 8 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the eighth province

221. Province 9 Code—code for ninth province for allocation of resources

222. Province 9 Name—name of ninth province for allocation of resources

223. Province 9 Onshore Area %—areal percent of the assessment unit in the onshore of the ninth province

224. Province 9 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the ninth province

225. Province 9 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the ninth province

226. Province 9 Offshore Area %—areal percent of the assessment unit in the offshore of the ninth province

227. Province 9 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the ninth province

228. Province 9 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the ninth province

229. Province 10 Code—code for tenth province for allocation of resources

230. Province 10 Name—name of tenth province for allocation of resources

231. Province 10 Onshore Area %—areal percent of the assessment unit in the onshore of the tenth province

232. Province 10 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the tenth province

233. Province 10 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the tenth province

234. Province 10 Offshore Area %—areal percent of the assessment unit in the offshore of the tenth province

235. Province 10 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the tenth province

236. Province 10 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the tenth province

237. Province 11 Code—code for eleventh province for allocation of resources

238. Province 11 Name—name of eleventh province for allocation of resources

239. Province 11 Onshore Area %—areal percent of the assessment unit in the onshore of the eleventh province

240. Province 11 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the eleventh province

241. Province 11 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the eleventh province

242. Province 11 Offshore Area %—areal percent of the assessment unit in the offshore of the eleventh province

243. Province 11 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the eleventh province

244. Province 11 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the eleventh province

245. Province 12 Code—code for twelfth province for allocation of resources

246. Province 12 Name—name of twelfth province for allocation of resources

247. Province 12 Onshore Area %—areal percent of the assessment unit in the onshore of the twelfth province

248. Province 12 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the twelfth province

249. Province 12 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the twelfth province

250. Province 12 Offshore Area %—areal percent of the assessment unit in the offshore of the twelfth province

251. (251) Province 12 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the twelfth province

252. Province 12 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the twelfth province

253. Province 13 Code—code for thirteenth province for allocation of resources

254. Province 13 Name—name of thirteenth province for allocation of resources

255. Province 13 Onshore Area %—areal percent of the assessment unit in the onshore of the thirteenth province

256. Province 13 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the thirteenth province

257. Province 13 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the thirteenth province

258. Province 13 Offshore Area %—areal percent of the assessment unit in the offshore of the thirteenth province

259. Province 13 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the thirteenth province

260. Province 13 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the thirteenth province

261. Province 14 Code—code for fourteenth province for allocation of resources

262. Province 14 Name—name of fourteenth province for allocation of resources

263. Province 14 Onshore Area %—areal percent of the assessment unit in the onshore of the fourteenth province

264. Province 14 Onshore Oil Volume %—volume percent of oil in undiscovered oil fields in the onshore of the fourteenth province

265. Province 14 Onshore Gas Volume %—volume percent of gas in undiscovered gas fields in the onshore of the fourteenth province

266. Province 14 Offshore Area %—areal percent of the assessment unit in the offshore of the fourteenth province

267. Province 14 Offshore Oil Volume %—volume percent of oil in undiscovered oil fields in the offshore of the fourteenth province

268. Province 14 Offshore Gas Volume %—volume percent of gas in undiscovered gas fields in the offshore of the fourteenth province

AU Summary.(tab, xlsx)

AU Summary.(tab, xlsx) are files containing a table that summarizes the results of the Monte Carlo calculations of undiscovered oil and gas resources for individual assessment units. The table contains 38 columns. Data columns are:

1. Assessment Unit Code—USGS assessment unit code number

2. Assessment Unit Name—USGS assessment unit name

3. Assessment Unit Probability—the probability that there exists at least one undiscovered field equal to or larger than the minimum field size somewhere in the assessment unit. Assessment unit probability is given as a fractional value from 0 to 1.0.

4. Oil in Oil Fields (MMBO), F95—the estimated value of undiscovered oil such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of oil (MMBO).

5. Oil in Oil Fields (MMBO), F50—the estimated value of undiscovered oil such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in millions of barrels of oil (MMBO).

6. Oil in Oil Fields (MMBO), F5—the estimated value of undiscovered oil such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of oil (MMBO).

7. Oil in Oil Fields (MMBO), Mean—the estimated mean (average) value of undiscovered oil in the assessment unit. The volume is given in millions of barrels of oil (MMBO).

8. Oil in Oil Fields (MMBO), Std. Dev.—the estimated standard deviation of the distribution of undiscovered oil in the assessment unit. The volume is given in millions of barrels of oil (MMBO).

9. Gas in Oil Fields (BCFG), F95—the estimated value of undiscovered gas in oil fields such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

10. Gas in Oil Fields (BCFG), F50—the estimated value of undiscovered gas in oil fields such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in billions of cubic feet of gas (BCFG).

11. Gas in Oil Fields (BCFG), F5—the estimated value of undiscovered gas in oil fields such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

12. Gas in Oil Fields (BCFG), Mean—the estimated mean (average) value of undiscovered gas in oil fields in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

13. Gas in Oil Fields (BCFG), Std. Dev.—the estimated standard deviation of the distribution of undiscovered gas in oil fields in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

14. Natural Gas Liquids in Oil Fields (MMBNGL), F95—the estimated value of undiscovered natural gas liquids in oil fields such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

15. Natural Gas Liquids in Oil Fields (MMBNGL), F50—the estimated value of undiscovered natural gas liquids in oil fields such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

16. Natural Gas Liquids in Oil Fields (MMBNGL), F5—the estimated value of undiscovered natural gas liquids in oil fields such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

17. (Natural Gas Liquids in Oil Fields (MMBNGL), Mean—the estimated mean (average) value of undiscovered natural gas liquids in oil fields in the assessment unit. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

18. Natural Gas Liquids in Oil Fields (MMBNGL), Std. Dev.—the estimated standard deviation of the distribution of undiscovered natural gas liquids in oil fields in the assessment unit. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

19. Gas in Gas Fields (BCFG), F95—the estimated value of undiscovered gas in gas fields such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

20. Gas in Gas Fields (BCFG), F50—the estimated value of undiscovered gas in gas fields such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in billions of cubic feet of gas (BCFG).

21. Gas in Gas Fields (BCFG), F5—the estimated value of undiscovered gas in gas fields such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

22. Gas in Gas Fields (BCFG), Mean—the estimated mean (average) value of undiscovered gas in gas fields in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

23. Gas in Gas Fields (BCFG), Std. Dev.—the estimated standard deviation of the distribution of undiscovered gas in gas fields in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

24. Liquids in Gas Fields (MMBL), F95—the estimated value of undiscovered liquids in gas fields such that there is a 95 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of liquids (MMBL).

25. Liquids in Gas Fields (MMBL), F50—the estimated value of undiscovered liquids in gas fields such that there is a 50 percent probability that this amount or more exists in the assessment unit. This is the median value. The volume is given in millions of barrels of liquids (MMBL).

26. Liquids in Gas Fields (MMBL), F5—the estimated value of undiscovered liquids in gas fields such that there is a 5 percent probability that this amount or more exists in the assessment unit. The volume is given in millions of barrels of liquids (MMBL).

27. Liquids in Gas Fields (MMBL), Mean—the estimated mean (average) value of undiscovered liquids in gas fields in the assessment unit. The volume is given in millions of barrels of liquids (MMBL).

28. Liquids in Gas Fields (MMBL), Std. Dev.—the estimated standard deviation of the distribution of undiscovered liquids in gas fields in the assessment unit. The volume is given in millions of barrels of liquids (MMBL).

29. Largest Oil Field (MMBO), F95—the estimated size of the largest undiscovered oil field in the assessment unit, such that there is a 95 percent probability of that field being this amount or larger. The volume is given in millions of barrels of oil (MMBO).

30. Largest Oil Field (MMBO), F50—the estimated size of the largest undiscovered oil field in the assessment unit, such that there is a 50 percent probability of that field being this amount or larger. This is the median value. The volume is given in millions of barrels of oil (MMBO).

31. Largest Oil Field (MMBO), F5—the estimated size of the largest undiscovered oil field in the assessment unit, such that there is a 5 percent probability of that field being this amount or larger. The volume is given in millions of barrels of oil (MMBO).

32. Largest Oil Field (MMBO), Mean—the estimated mean (average) size of the largest undiscovered oil field in the assessment unit. The volume is given in millions of barrels of oil (MMBO).

33. Largest Oil Field (MMBO), Std. Dev.—the estimated standard deviation of the distribution of the size of the largest undiscovered oil field in the assessment unit. The volume is given in millions of barrels of oil (MMBO).

34. Largest Gas Field (BCFG), F95—the estimated size of the largest undiscovered gas field in the assessment unit, such that there is a 95 percent probability of that field being this amount or larger. The volume is given in billions of cubic feet of gas (BCFG).

35. Largest Gas Field (BCFG), F50—the estimated size of the largest undiscovered gas field in the assessment unit, such that there is a 50 percent probability of that field being this amount or larger. This is the median value. The volume is given in billions of cubic feet of gas (BCFG).

36. Largest Gas Field (BCFG), F5—the estimated size of the largest undiscovered gas field in the assessment unit, such that there is a 5 percent probability of that field being this amount or larger. The volume is given in billions of cubic feet of gas (BCFG).

37. Largest Gas Field (BCFG), Mean—the estimated mean (average) size of the largest undiscovered gas field in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

38. Largest Gas Field (BCFG), Std. Dev.—the estimated standard deviation of the distribution of the size of the largest undiscovered gas field in the assessment unit. The volume is given in billions of cubic feet of gas (BCFG).

Code List.(tab, xlsx)

Tab-delimited file containing code numbers used in world provinces, total petroleum systems, and assessment units. The table contains 6 columns. Data columns are:

1. Code—USGS code number
2. Name—USGS area name
3. Name and Code—the USGS area name, a comma, a space, and the USGS code number
4. Name, Unit, and Code—the USGS area name, a comma, a space, the hierarchical unit name (province, total petroleum system, or assessment unit), and the USGS code number
5. Region—USGS region name
6. Status—marking those assessment units that have been quantitatively assessed

Province Fractiles.(tab, xlsx)

Province Fractiles.(tab, xlsx) are files containing a table (.tab) or tables (.xlsx) of fractiles from the results of the Monte Carlo calculations of undiscovered oil and gas resources for geologic provinces. Undiscovered-resource volumes are provided for only those areas within the geologic province that were assessed in this study. These volumes do not necessarily represent the total undiscovered oil and gas resources within the province. Eight worksheets in the .xlsx files and eight separate .tab files corresponding to each product in the following list are provided.

ROO Risked Oil in Oil Fields, in millions of barrels of oil (MMBO) (same as total oil)

RGO Risked Gas in Oil Fields, in billions of cubic feet of gas (BCFG)

RNO Risked NGL in Oil Fields, in millions of barrels of NGL (MMBNGL)

RGG Risked Gas in Gas Fields, in billions of cubic feet of gas (BCFG)

RLG Risked Liquids in Gas Fields, in millions of barrels of liquids (MMBL)

TG Total Gas, in billions of cubic feet of gas (BCFG)

TN Total NGL, in millions of barrels of natural gas liquids (MMBNGL)

TBOE Total BOE, in millions of barrels of oil equivalent (MMBOE)

The table contains 26 columns. Data columns are:

1. Province Code—USGS numeric province code
2. Province Name—USGS province name
3. Product—the product from the list of eight products given above
4. Mean—the estimated mean value of resource
5. Median—the estimated median (F50) value of resource
6. F100—the estimated value of resource such that there is a 100 percent probability that this amount or more exists in the province. This is the minimum.
7. F95—the estimated value of resource such that there is a 95 percent probability that this amount or more exists in the province
8. F90—the estimated value of resource such that there is a 90 percent probability that this amount or more exists in the province
9. F85—the estimated value of resource such that there is a 85 percent probability that this amount or more exists in the province
10. F80—the estimated value of resource such that there is a 80 percent probability that this amount or more exists in the province
11. F75—the estimated value of resource such that there is a 75 percent probability that this amount or more exists in the province
12. F70—the estimated value of resource such that there is a 70 percent probability that this amount or more exists in the province
13. F65—the estimated value of resource such that there is a 65 percent probability that this amount or more exists in the province
14. F60—the estimated value of resource such that there is a 60 percent probability that this amount or more exists in the province
15. F55—the estimated value of resource such that there is a 55 percent probability that this amount or more exists in the province
16. F50—the estimated value of resource such that there is a 50 percent probability that this amount or more exists in the province. This is the median.
17. F45—the estimated value of resource such that there is a 45 percent probability that this amount or more exists in the province
18. F40—the estimated value of resource such that there is a 40 percent probability that this amount or more exists in the province
19. F35—the estimated value of resource such that there is a 35 percent probability that this amount or more exists in the province
20. F30—the estimated value of resource such that there is a 30 percent probability that this amount or more exists in the province
21. F25—the estimated value of resource such that there is a 25 percent probability that this amount or more exists in the province
22. F20—the estimated value of resource such that there is a 20 percent probability that this amount or more exists in the province
23. F15—the estimated value of resource such that there is a 15 percent probability that this amount or more exists in the province

24. F10—the estimated value of resource such that there is a 10 percent probability that this amount or more exists in the province

25. F5—the estimated value of resource such that there is a 5 percent probability that this amount or more exists in the province

26. F0—the estimated value of resource such that there is no probability that this amount or more exists in the province. This is the maximum.

Province Summary.(tab, xlsx)

Province Summary.(tab, xlsx) are files containing a table that summarizes the results of the Monte Carlo calculations of undiscovered oil and gas resources for geologic provinces. Because the results in these tables were aggregated from individual AUs, standard deviations of the estimated potential undiscovered oil and gas resources are not provided. The table contains 26 columns. Data columns are:

1. Province Code—USGS numeric province code

2. Province Name—USGS province name

3. Province Probability—the probability that there exists at least one undiscovered field equal to or larger than the minimum field size somewhere in the province. Province probability is given as a fractional value from 0 to 1.0.

4. Oil in Oil Fields (MMBO), F95—the estimated value of undiscovered oil such that there is a 95 percent probability that this amount or more exists in the province. The volume is given in millions of barrels of oil (MMBO).

5. Oil in Oil Fields (MMBO), F50—the estimated value of undiscovered oil such that there is a 50 percent probability that this amount or more exists in the province. This is the median value. The volume is given in millions of barrels of oil (MMBO).

6. Oil in Oil Fields (MMBO), F5—the estimated value of undiscovered oil such that there is a 5 percent probability that this amount or more exists in the province. The volume is given in millions of barrels of oil (MMBO).

7. Oil in Oil Fields (MMBO), Mean—the estimated mean (average) value of undiscovered oil in the province. The volume is given in millions of barrels of oil (MMBO).

8. Gas in Oil Fields (BCFG), F95—the estimated value of undiscovered gas in oil fields such that there is a 95 percent probability that this amount or more exists in the province. The volume is given in billions of cubic feet of gas (BCFG).

9. Gas in Oil Fields (BCFG), F50—the estimated value of undiscovered gas in oil fields such that there is a 50 percent probability that this amount or more exists in the province. This is the median value. The volume is given in billions of cubic feet of gas (BCFG).

10. Gas in Oil Fields (BCFG), F5—the estimated value of undiscovered gas in oil fields such that there is a 5 percent probability that this amount or more exists in the province. The volume is given in billions of cubic feet of gas (BCFG).

11. Gas in Oil Fields (BCFG), Mean—the estimated mean (average) value of undiscovered gas in oil fields in the province. The volume is given in billions of cubic feet of gas (BCFG).

12. Natural Gas Liquids in Oil Fields (MMBNGL), F95—the estimated value of undiscovered natural gas liquids in oil fields such that there is a 95 percent probability that this amount or more exists in the province. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

13. Natural Gas Liquids in Oil Fields (MMBNGL), F50—the estimated value of undiscovered natural gas liquids in oil fields such that there is a 50 percent probability that this amount or more exists in the province. This is the median value. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

14. Natural Gas Liquids in Oil Fields (MMBNGL), F5—the estimated value of undiscovered natural gas liquids in oil fields such that there is a 5 percent probability that this amount or more exists in the province. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

15. Natural Gas Liquids in Oil Fields (MMBNGL), Mean—the estimated mean (average) value of undiscovered natural gas liquids in oil fields in the province. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

16. Gas in Gas Fields (BCFG), F95—the estimated value of undiscovered gas in gas fields such that there is a 95 percent probability that this amount or more exists in the province. The volume is given in billions of cubic feet of gas (BCFG).

17. Gas in Gas Fields (BCFG), F50—the estimated value of undiscovered gas in gas fields such that there is a 50 percent probability that this amount or more exists in the province. This is the median value. The volume is given in billions of cubic feet of gas (BCFG).

18. Gas in Gas Fields (BCFG), F5—the estimated value of undiscovered gas in gas fields such that there is a 5 percent probability that this amount or more exists in the province. The volume is given in billions of cubic feet of gas (BCFG).

19. Gas in Gas Fields (BCFG), Mean—the estimated mean (average) value of undiscovered gas in gas fields in the province. The volume is given in billions of cubic feet of gas (BCFG).

20. Liquids in Gas Fields (MMBL), F95—the estimated value of undiscovered liquids in gas fields such that there is a 95 percent probability that this amount or more exists in the province. The volume is given in millions of barrels of liquids (MMBL).

21. Liquids in Gas Fields (MMBL), F50—the estimated value of undiscovered liquids in gas fields such that there is a 50 percent probability that this amount or more exists in the province. This is the median value. The volume is given in millions of barrels of liquids (MMBL).

22. Liquids in Gas Fields (MMBL), F5—the estimated value of undiscovered liquids in gas fields such that there is a 5 percent probability that this amount or more exists in the province. The volume is given in millions of barrels of liquids (MMBL).

23. Liquids in Gas Fields (MMBL), Mean—the estimated mean (average) value of undiscovered liquids in gas fields in the province. The volume is given in millions of barrels of liquids (MMBL).

24. Total Gas (BCFG), Mean—the estimated mean (average) value of total undiscovered gas in the province. The volume is given in billions of cubic feet of gas (BCFG).

25. Total NGL (MMBNGL), Mean—the estimated mean (average) value of total undiscovered NGL in the province. The volume is given in millions of barrels of natural gas liquids (MMBNGL).

26. Total BOE (MMBOE), Mean—the estimated mean (average) value of total undiscovered barrels of oil equivalent in the province. The volume is given in millions of barrels of oil equivalent (MMBOE).

Full Monte Carlo Output Files

These files are designated by the assessment unit number preceded by “em” and followed by “.pdf.” They are the complete results output from the Monte Carlo simulations, including statistics and graphs of the distributions. The data from these individual output files can also be found in files AU Summary.(tab, xlsx) and AU Fractiles.(tab, xlsx).

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