FORSPAN ASSESSMENT MODEL FOR CONTINUOUS ACCUMULATIONS--BASIC INPUT DATA FORM (NOGA, Version 9, 2-10-03)

IDENTIFICATION INFORMATION

Assessment Geologist:	R.C. Johnson	Date:	9/19/2005
Region:	North America	Number:	5
Province:	Wind River Basin	Number:	5035
Total Petroleum System:	Cretaceous-Lower Tertiary Composite	Number:	503502
Assessment Unit:	Mesaverde Coalbed Gas	Number:	50350281
Based on Data as of:	tested cells based on IHS Energy Data 2002, EUR based Wyoming Oil and Gas Conservation Commission data		
Notes from Assessor:	analogs: Powder River Basin and Piceance Basin (50200282) and Southwestern Wyoming (50370681)		

CHARACTERISTICS OF ASSESSMENT UNIT

Assessment-unit type: Oil (<20,000 cfg/bo) **or Gas** (≥20,000 cfg/bo), incl. disc. & pot. additions: Gas

What is the minimum total recovery per cell? 0.02 (mmbo for oil A.U.; bcfg for gas A.U.)

Number of tested cells: 7

Number of tested cells with total recovery per cell ≥ minimum: 1

Established (discovered cells): X Hypothetical (no cells): _____

Median total recovery per cell (for cells ≥ min.): (mmbo for oil A.U.; bcfg for gas A.U.)

1st 3rd discovered _____ 2nd 3rd _____ 3rd 3rd _____

Assessment-Unit Probabilities:

Attribute	Probability of occurrence (0-1.0)
1. **CHARGE:** Adequate petroleum charge for an untested cell with total recovery ≥ minimum.	1.0
2. **ROCKS:** Adequate reservoirs, traps, seals for an untested cell with total recovery ≥ minimum.	1.0
3. **TIMING:** Favorable geologic timing for an untested cell with total recovery ≥ minimum.	1.0

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3): 1.0

NO. OF UNTESTED CELLS WITH POTENTIAL FOR ADDITIONS TO RESERVES

1. Total assessment-unit area (acres): (uncertainty of a fixed value)

   calculated mean 649,000 minimum 584,000 mode 649,000 maximum 713,000

2. Area per cell of untested cells having potential for additions to reserves (acres): (values are inherently variable)

   calculated mean 146.7 minimum 40 mode 120 maximum 280

   uncertainty of mean: minimum 100 maximum 190

3. Percentage of total assessment-unit area that is untested (%): (uncertainty of a fixed value)

   calculated mean 99.9 minimum 99.7 mode 99.9 maximum 100

Assessment Unit (name, no.)
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NO. OF UNTESTED CELLS WITH POTENTIAL FOR ADDITIONS TO RESERVES (Continued)

4. Percentage of untested assessment-unit area that has potential for additions to reserves (%):
(a necessary criterion is that total recovery per cell ≥ minimum; uncertainty of a fixed value)

calculated mean 11.7 minimum 1 mode 7 maximum 27

Geologic evidence for estimates: At minimum, minimal development areas around USGS pilot areas;
at mode, 10% of high potential area;
at maximum, about 40% of the high potential area plus a minor amount of the low potential area

TOTAL RECOVERY PER CELL

Total recovery per cell for untested cells having potential for additions to reserves:
(values are inherently variable; mmbo for oil A.U.; bcfg for gas A.U.)

calculated mean 0.22 minimum 0.02 median 0.1 maximum 5

AVERAGE COPRODUCT RATIOS FOR UNTESTED CELLS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

Oil assessment unit:	minimum	mode	maximum
Gas/oil ratio (cfg/bo)			
NGL/gas ratio (bngl/mmcfg)			
Gas assessment unit:			
Liquids/gas ratio (bliq/mmcfg)	0	2	5

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SELECTED ANCILLARY DATA FOR UNTESTED CELLS

(values are inherently variable)

Oil assessment unit:	minimum	mode	maximum
API gravity of oil (degrees)			
Sulfur content of oil (%)			
Depth (m) of water (if applicable)			

Drilling depth (m)

minimum	F75	mode	F25	maximum

Gas assessment unit:	minimum	mode	maximum
Inert-gas content (%)	0.10	0.30	1.00
CO_2 content (%)	0.50	1.80	20.00
Hydrogen sulfide content (%)	0.00	0.00	0.00
Heating value (BTU)	850	950	1050
Depth (m) of water (if applicable)			

Drilling depth (m)

minimum	F75	mode	F25	maximum
90	779	1200	1294	1800

Success ratios:	calculated mean	minimum	mode	maximum
Future success ratio (%)	41.7	10	50	65

Historic success ratio, tested cells (%) 14

Completion practices:

1. Typical well-completion practices (conventional, open hole, open cavity, other) conventional
2. Fraction of wells drilled that are typically stimulated 1
3. Predominant type of stimulation (none, frac, acid, other) hydro
4. Fraction of wells drilled that are horizontal 0

Assessment Unit (name, no.)
Mesaverde Coalbed Gas, 50350281

ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO STATES
Surface Allocations (uncertainty of a fixed value)

1. Wyoming represents 100 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		100	

2. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

3. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

4. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

5. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

6. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
Mesaverde Coalbed Gas, 50350281

7. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

8. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

9. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

10. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

11. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

12. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

Assessment Unit (name, no.)
Mesaverde Coalbed Gas, 50350281

ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO GENERAL LAND OWNERSHIPS
Surface Allocations (uncertainty of a fixed value)

1. Federal Lands represents 41.08 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		29	

2. Private Lands represents 22.69 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		22.5	

3. Tribal Lands represents 31.39 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		45	

4. Other Lands represents 0.24 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		0.5	

5. State 1 Lands represents 4.61 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		3	

6. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
Mesaverde Coalbed Gas, 50350281

7. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

8. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

9. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

10. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

11. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

12. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

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ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO FEDERAL LAND SUBDIVISIONS
Surface Allocations (uncertainty of a fixed value)

1. Bureau of Land Management (BLM) represents 40.85 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		29	

2. BLM Wilderness Areas (BLMW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

3. BLM Roadless Areas (BLMR) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

4. National Park Service (NPS) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

5. NPS Wilderness Areas (NPSW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

6. NPS Protected Withdrawals (NPSP) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

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7. US Forest Service (FS) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

8. USFS Wilderness Areas (FSW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

9. USFS Roadless Areas (FSR) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

10. USFS Protected Withdrawals (FSP) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

11. US Fish and Wildlife Service (FWS) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

12. USFWS Wilderness Areas (FWSW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

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13. USFWS Protected Withdrawals (FWSP) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

14. Wilderness Study Areas (WS) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

15. Department of Energy (DOE) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

16. Department of Defense (DOD) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

17. Bureau of Reclamation (BOR) represents 0.23 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		0	

18. Tennessee Valley Authority (TVA) represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

Assessment Unit (name, no.)
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19. Other Federal represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

20. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

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ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO ECOSYSTEMS
Surface Allocations (uncertainty of a fixed value)

1. Central Basin and Hills (CNBH) represents 94.5 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		94.5	

2. _____ represents 5.5 area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity		5.5	

3. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

4. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

5. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

6. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity			
Gas in gas assessment unit: Volume % in entity			

7. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

8. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

9. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

10. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

11. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

12. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in oil assessment unit: Volume % in entity	_____	_____	_____
Gas in gas assessment unit: Volume % in entity	_____	_____	_____

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