

# **Appendix 1. Input Data Forms for 192 Storage Assessment Units Used in the U.S. Geological Survey National Assessment of Geologic Carbon Dioxide Storage Resources**

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The completed input data forms in appendix 1 are arranged alphabetically by basin name and then numerically by storage assessment unit (SAU) code. A complete list of basin names, SAU names, and SAU codes is in [table 1](#). The first page of the input form contains identification information and the assessment geologist's inputs; it has spaces for the assessment geologist's name, the date of assessment, and the SAU location and its relation to NOGA assessment units (AUs), if appropriate, along with any notes from the assessor. In the input forms in appendix 1, no entries are shown for the last two categories because the information about the NOGA AUs was lengthy for some SAUs and because there were no significant notes from the assessors. Information on the related NOGA AUs is in table 1. The second page contains allocation percentages of the SAU mean area to the States that are listed alphabetically and of the SAU area to five general land-ownership categories that are defined in the "Glossary" in this report: Federal lands, State lands, Tribal lands, private and other lands, and offshore areas. More details about the forms are in the report text and figure 1.

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	E. Slucher	Date:	3/16/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Endicott Group - LCU Truncation	Number:	C50010101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>9,400</u>	most likely: <u>11,200</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>49,000</u>	most likely: <u>54,000</u>	maximum: <u>59,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>800</u>	most likely: <u>1,000</u>	maximum: <u>1,200</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 280 most likely: 350 maximum: 420

(7) Mean porosity net porous interval (fraction): minimum: 0.12 most likely: 0.21 maximum: 0.25

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 500 most likely: 530 maximum: 14,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.020 most likely: 200.00 maximum: 10,000

Storage Assessment Unit (SAU):

Endicott Group - LCU Truncation

Number:

C50010101

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>8.5</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>92</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	E. Slucher	Date:	3/16/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Endicott Group - Kayak Shale	Number:	C50010102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>9,300</u>	most likely: <u>11,500</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>329,000</u>	most likely: <u>365,000</u>	maximum: <u>402,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>360</u>	most likely: <u>460</u>	maximum: <u>560</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 137 most likely: 175 maximum: 213

(7) Mean porosity net porous interval (fraction): minimum: 0.08 most likely: 0.11 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 390 most likely: 420 maximum: 11,300

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.020 most likely: 30.00 maximum: 1,200

Storage Assessment Unit (SAU):

Endicott Group - Kayak Shale

Number:

C50010102

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>69</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>1.1</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>30</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	3/16/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Lower Ellesmerian	Number:	C50010103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>5,400</u>	most likely: <u>9,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>8,121,000</u>	most likely: <u>9,023,000</u>	maximum: <u>9,925,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,000</u>	most likely: <u>1,500</u>	maximum: <u>2,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.80 most likely: 0.90 maximum: 0.95

(6) Mean thickness net porous interval (ft): minimum: 400 most likely: 600 maximum: 800

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.10 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 600 maximum: 460,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.002 most likely: 0.50 maximum: 850

Storage Assessment Unit (SAU):

Lower Ellesmerian

Number:

C50010103

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>52</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>32</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>4.6</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>11</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	3/16/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Lower Ellesmerian Deep	Number:	C50010104
SAU relationship to NOGA AU:			
Notes from assessor:			

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input type="checkbox"/>
	> 13,000 ft	<input checked="" type="checkbox"/>

(1) SAU depth from surface (ft):	minimum:	13,000	most likely:	19,000	maximum:	27,000
(2) Area of the SAU (acres):	minimum:	25,710,000	most likely:	28,567,000	maximum:	31,424,000
(3) Mean total SAU thickness (ft):	minimum:	2,400	most likely:	2,900	maximum:	3,600
(4) SAU water quality (check one):						
Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).					<input checked="" type="checkbox"/>	
Water in this SAU is both saline and fresh.					<input type="checkbox"/>	
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).					<input type="checkbox"/>	
(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):						
	minimum:	0.95	most likely:	0.95	maximum:	1.00
(6) Mean thickness net porous interval (ft):	minimum:	480	most likely:	580	maximum:	720
(7) Mean porosity net porous interval (fraction):	minimum:	0.03	most likely:	0.06	maximum:	0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

	minimum:	400	most likely:	3,750	maximum:	1,000,000
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

	minimum:	0.002	most likely:	0.50	maximum:	8
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Storage Assessment Unit (SAU):

Lower Ellesmerian Deep

Number:

C50010104

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>65</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>20</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>12</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>2.6</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	3/16/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Lower Ellesmerian - LCU Truncation	Number:	C50010105

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 9,000 most likely: 10,000 maximum: 11,800

(2) Area of the SAU (acres): minimum: 221,000 most likely: 246,000 maximum: 271,000

(3) Mean total SAU thickness (ft): minimum: 1,100 most likely: 1,300 maximum: 1,700

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 0.90 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 770 most likely: 1,050 maximum: 1,470

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.15 maximum: 0.25

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 50 maximum: 23,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 50.00 maximum: 850

Storage Assessment Unit (SAU):

Lower Ellesmerian - LCU Truncation

Number:

C50010105

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>87</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>13</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill, C. Doolan	Date:	3/16/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Beaufortian and Upper Ellesmerian	Number:	C50010106

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	7,400	maximum:	13,000
(2) Area of the SAU (acres):	minimum:	14,500,000	most likely:	17,209,000	maximum:	18,000,000
(3) Mean total SAU thickness (ft):	minimum:	2,000	most likely:	3,000	maximum:	4,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

☒ x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.75 most likely: 0.85 maximum: 0.95

(6) Mean thickness net porous interval (ft): minimum: 125 most likely: 225 maximum: 325

(7) Mean porosity net porous interval (fraction): minimum: 0.09 most likely: 0.13 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 30,000 most likely: 35,000 maximum: 253,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.050 most likely: 50.00 maximum: 1,000

Storage Assessment Unit (SAU):

Beaufortian and Upper Ellesmerian

Number:

C50010106

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>59</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>28</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>3.5</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>9.0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Lower Torok Formation	Number:	C50010107

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	8,000	maximum:	11,000
(2) Area of the SAU (acres):	minimum:	21,744,000	most likely:	24,160,000	maximum:	26,576,000
(3) Mean total SAU thickness (ft):	minimum:	2,000	most likely:	3,500	maximum:	5,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.60 most likely: 0.90 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 1,000 most likely: 1,800 maximum: 2,500

(7) Mean porosity net porous interval (fraction): minimum: 0.08 most likely: 0.11 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 4,900 most likely: 130,000 maximum: 13,000,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.002 most likely: 1.00 maximum: 80

Storage Assessment Unit (SAU):

Lower Torok Formation

Number:

C50010107

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>73</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>12</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>13</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>2.3</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Upper Torok Formation	Number:	C50010108

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 5,000    most likely: 8,000    maximum: 10,000

(2) Area of the SAU (acres):            minimum: 3,330,000    most likely: 3,700,000    maximum: 4,070,000

(3) Mean total SAU thickness (ft):    minimum: 1,000    most likely: 2,000    maximum: 3,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). \_\_\_\_\_

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.75    most likely: 0.90    maximum: 1.00

(6) Mean thickness net porous interval (ft):    minimum: 500    most likely: 1,000    maximum: 1,500

(7) Mean porosity net porous interval (fraction):    minimum: 0.08    most likely: 0.11    maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 2,300    most likely: 12,000    maximum: 1,100,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.002    most likely: 1.00    maximum: 80



Storage Assessment Unit (SAU):

Upper Torok Formation

Number:

C50010108

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>9.2</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>89</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>1.7</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Nanushuk Formation	Number:	C50010109
SAU relationship to NOGA AU:			
Notes from assessor:			

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>3,900</u>	maximum: <u>6,600</u>
(2) Area of the SAU (acres):	minimum: <u>1,595,000</u>	most likely: <u>1,772,000</u>	maximum: <u>1,949,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>190</u>	most likely: <u>540</u>	maximum: <u>890</u>
(4) SAU water quality (check one):			
Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).			
Water in this SAU is both saline and fresh.			x
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).			
(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):			
	minimum: <u>0.75</u>	most likely: <u>0.85</u>	maximum: <u>0.95</u>
(6) Mean thickness net porous interval (ft):	minimum: <u>115</u>	most likely: <u>325</u>	maximum: <u>535</u>
(7) Mean porosity net porous interval (fraction):	minimum: <u>0.10</u>	most likely: <u>0.14</u>	maximum: <u>0.18</u>

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):	minimum: <u>870</u>	most likely: <u>4,500</u>	maximum: <u>810,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):	minimum: <u>0.020</u>	most likely: <u>10.00</u>	maximum: <u>800</u>
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Storage Assessment Unit (SAU):

Nanushuk Formation

Number:

C50010109

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>16</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>54</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>11</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>19</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Tuluvak Formation	Number:	C50010110
SAU relationship to NOGA AU:			
Notes from assessor:			

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	
(1) SAU depth from surface (ft):	minimum: 3,000	most likely: 4,100	maximum: 5,200
(2) Area of the SAU (acres):	minimum: 798,000	most likely: 887,000	maximum: 976,000
(3) Mean total SAU thickness (ft):	minimum: 500	most likely: 600	maximum: 700
(4) SAU water quality (check one):			
Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	x		
Water in this SAU is both saline and fresh.			
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).			
(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):	minimum: 0.50	most likely: 0.90	maximum: 1.00
(6) Mean thickness net porous interval (ft):	minimum: 300	most likely: 360	maximum: 420
(7) Mean porosity net porous interval (fraction):	minimum: 0.10	most likely: 0.15	maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	440	most likely:	2,300	maximum:	80,000
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum:	0.050	most likely:	1.00	maximum:	1,000
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Storage Assessment Unit (SAU):

Tuluwak Formation

Number:

C50010110

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>11</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>87</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>2.9</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Lower Seabee Formation	Number:	C50010111

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 4,800 most likely: 5,800 maximum: 6,800

(2) Area of the SAU (acres): minimum: 207,000 most likely: 230,000 maximum: 253,000

(3) Mean total SAU thickness (ft): minimum: 350 most likely: 425 maximum: 500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	0.70	most likely:	0.90	maximum:	1.00
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(6) Mean thickness net porous interval (ft): minimum: 175 most likely: 210 maximum: 250

(7) Mean porosity net porous interval (fraction): minimum: 0.14 most likely: 0.18 maximum: 0.21

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	140	most likely:	790	maximum:	13,000
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.002 most likely: 0.50 maximum: 300

Storage Assessment Unit (SAU):

Lower Seabee Formation

Number:

C50010111

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>100</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	R. Drake	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Middle Schrader Bluff Formation	Number:	C50010112

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,275</u>	maximum: <u>7,600</u>
(2) Area of the SAU (acres):	minimum: <u>1,220,000</u>	most likely: <u>1,355,000</u>	maximum: <u>1,491,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>50</u>	most likely: <u>100</u>	maximum: <u>150</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.60 most likely: 0.90 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 30 most likely: 60 maximum: 90

(7) Mean porosity net porous interval (fraction): minimum: 0.14 most likely: 0.19 maximum: 0.24

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 125 most likely: 1,000 maximum: 22,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.300 most likely: 50.00 maximum: 3,000



Storage Assessment Unit (SAU):

Middle Schrader Bluff Formation

Number:

C50010112

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>99</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Canning Formation	Number:	C50010113

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	3,900	maximum:	4,850
(2) Area of the SAU (acres):	minimum:	285,000	most likely:	317,000	maximum:	349,000
(3) Mean total SAU thickness (ft):	minimum:	250	most likely:	400	maximum:	550

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.70 most likely: 0.90 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 130 most likely: 200 maximum: 270

(7) Mean porosity net porous interval (fraction): minimum: 0.12 most likely: 0.15 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 190 most likely: 1,100 maximum: 1,700

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.50 maximum: 200

Storage Assessment Unit (SAU):

Canning Formation

Number:

C50010113

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>100</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	R. Drake	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Alaska North Slope	Number:	C5001
Basin:	Alaska North Slope	Number:	C500101
Storage Assessment Unit (SAU):	Staines Tongue	Number:	C50010114
SAU relationship to NOGA AU:			
Notes from assessor:			

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/>
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 5,501    maximum: 11,235

(2) Area of the SAU (acres):      minimum: 1,769,000    most likely: 1,966,000    maximum: 2,163,000

(3) Mean total SAU thickness (ft):      minimum: 1,500    most likely: 2,000    maximum: 2,500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/>
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.60</u>	most likely: <u>0.90</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):      minimum: 675    most likely: 900    maximum: 1,125

(7) Mean porosity net porous interval (fraction):      minimum: 0.13    most likely: 0.18    maximum: 0.23

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>5</u>	most likely: <u>5,000</u>	maximum: <u>500,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.300    most likely: 50.00    maximum: 3,000

Storage Assessment Unit (SAU):

Staines Tongue

Number:

C50010114

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>8.9</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>66</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>25</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	P. Warwick, R. Drake	Date:	3/8/2012
Assessment region:	Western Mid-Continent		
Province:	Anadarko and Southern Oklahoma Basins	Number:	C5058
Basin:	Anadarko and Southern Oklahoma Basins	Number:	C505801
Storage Assessment Unit (SAU):	Lower Paleozoic Composite	Number:	C50580101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/> x
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>9,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>5,295,000</u>	most likely: <u>5,883,000</u>	maximum: <u>6,471,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>2,000</u>	most likely: <u>3,000</u>	maximum: <u>4,500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/> x
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.90</u>	most likely: <u>0.95</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>200</u>	most likely: <u>300</u>	maximum: <u>450</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.05</u>	most likely: <u>0.10</u>	maximum: <u>0.15</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>1,030</u>	most likely: <u>1,210</u>	maximum: <u>164,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.010</u>	most likely: <u>500.00</u>	maximum: <u>2,500</u>
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Storage Assessment Unit (SAU):

Lower Paleozoic Composite

Number:

C50580101

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>80</u>	% of mean SAU area
(2)	<u>Texas</u>	contains	<u>20</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.3</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>99</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	P. Warwick, R. Drake	Date:	3/8/2012
Assessment region:	Western Mid-Continent		
Province:	Anadarko and Southern Oklahoma Basins	Number:	C5058
Basin:	Anadarko and Southern Oklahoma Basins	Number:	C505801
Storage Assessment Unit (SAU):	Lower Paleozoic Composite Deep	Number:	C50580102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	
	> 13,000 ft	x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>17,000</u>	maximum: <u>30,000</u>
(2) Area of the SAU (acres):	minimum: <u>5,234,000</u>	most likely: <u>5,815,000</u>	maximum: <u>6,397,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>2,500</u>	most likely: <u>3,500</u>	maximum: <u>5,500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	x
Water in this SAU is both saline and fresh.	
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>1.00</u>	most likely: <u>1.00</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>250</u>	most likely: <u>350</u>	maximum: <u>550</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.03</u>	most likely: <u>0.06</u>	maximum: <u>0.10</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>100</u>	most likely: <u>180</u>	maximum: <u>11,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.001</u>	most likely: <u>10.00</u>	maximum: <u>100</u>
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Storage Assessment Unit (SAU):

Lower Paleozoic Composite Deep

Number:

C50580102

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>83</u>	% of mean SAU area
(2)	<u>Texas</u>	contains	<u>17</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>4.8</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>95</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>3/8/2012</u>
Assessment region:	<u>Western Mid-Continent</u>		
Province:	<u>Anadarko and Southern Oklahoma Basins</u>	Number:	<u>C5058</u>
Basin:	<u>Anadarko and Southern Oklahoma Basins</u>	Number:	<u>C505801</u>
Storage Assessment Unit (SAU):	<u>Hunton Group and Misener Sandstone</u>	Number:	<u>C50580103</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 7,011,000 most likely: 7,790,000 maximum: 8,569,000

(3) Mean total SAU thickness (ft): minimum: 150 most likely: 250 maximum: 350

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 60 most likely: 110 maximum: 180

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.08 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 420 most likely: 560 maximum: 14,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 10.00 maximum: 120

Storage Assessment Unit (SAU):

Hunton Group and Misener Sandstone

Number:

C50580103

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>73</u> % of mean SAU area
(2)	<u>Texas</u>	contains	<u>27</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>99</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	S. Brennan	Date:	3/8/2012
Assessment region:	Western Mid-Continent		
Province:	Anadarko and Southern Oklahoma Basins	Number:	C5058
Basin:	Anadarko and Southern Oklahoma Basins	Number:	C505801
Storage Assessment Unit (SAU):	Hunton Group and Misener Sandstone Deep	Number:	C50580104

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>18,000</u>	maximum: <u>29,000</u>	<u>x</u>
(2) Area of the SAU (acres):	minimum: <u>3,717,000</u>	most likely: <u>4,130,000</u>	maximum: <u>4,543,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>350</u>	most likely: <u>500</u>	maximum: <u>650</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 140 most likely: 230 maximum: 320

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.08 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 940 most likely: 990 maximum: 32,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.005 most likely: 1.00 maximum: 30

Storage Assessment Unit (SAU):

Hunton Group and Misener Sandstone Deep

Number:

C50580104

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>90</u>	% of mean SAU area
(2)	<u>Texas</u>	contains	<u>10</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>5.6</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>94</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	C. Doolan, W. Craddock	Date:	3/8/2012
Assessment region:	Western Mid-Continent		
Province:	Anadarko and Southern Oklahoma Basins	Number:	C5058
Basin:	Anadarko and Southern Oklahoma Basins	Number:	C505801
Storage Assessment Unit (SAU):	Mississippian Composite	Number:	C50580105

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	<input checked="" type="checkbox"/>
> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 6,900    maximum: 13,000

(2) Area of the SAU (acres):            minimum: 21,543,000    most likely: 23,937,000    maximum: 26,331,000

(3) Mean total SAU thickness (ft):    minimum: 900    most likely: 1,700    maximum: 2,500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/>
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.90</u>	most likely: <u>1.00</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):      minimum: 90    most likely: 255    maximum: 500

(7) Mean porosity net porous interval (fraction):    minimum: 0.08    most likely: 0.13    maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>34,000</u>	most likely: <u>35,000</u>	maximum: <u>1,400,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.010    most likely: 25.00    maximum: 800

Storage Assessment Unit (SAU):

Mississippian Composite

Number:

C50580105

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>31</u>	% of mean SAU area
(2)	<u>Kansas</u>	contains	<u>24</u>	% of mean SAU area
(3)	<u>Oklahoma</u>	contains	<u>30</u>	% of mean SAU area
(4)	<u>Texas</u>	contains	<u>14</u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.8</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>96</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	C. Doolan, W. Craddock	Date:	3/8/2012
Assessment region:	Western Mid-Continent		
Province:	Anadarko and Southern Oklahoma Basins	Number:	C5058
Basin:	Anadarko and Southern Oklahoma Basins	Number:	C505801
Storage Assessment Unit (SAU):	Mississippian Composite Deep	Number:	C50580106

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	
	> 13,000 ft	<u>          x          </u>

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,400</u>	maximum: <u>22,700</u>
(2) Area of the SAU (acres):	minimum: <u>3,674,000</u>	most likely: <u>4,082,000</u>	maximum: <u>4,490,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>2,900</u>	most likely: <u>3,500</u>	maximum: <u>4,300</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<u>          x          </u>
Water in this SAU is both saline and fresh.	<u>                                </u>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<u>                                </u>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.95</u>	most likely: <u>1.00</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>175</u>	most likely: <u>250</u>	maximum: <u>325</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.04</u>	most likely: <u>0.06</u>	maximum: <u>0.09</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>4,000</u>	most likely: <u>5,000</u>	maximum: <u>65,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.001</u>	most likely: <u>1.00</u>	maximum: <u>100</u>
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Storage Assessment Unit (SAU):

Mississippian Composite Deep

Number:

C50580106

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>84</u>	% of mean SAU area
(2)	<u>Texas</u>	contains	<u>16</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>6.5</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>93</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>T. Roberts-Ashby</u>	Date:	<u>8/11/2011</u>
Assessment region:	<u>Western Mid-Continent</u>		
Province:	<u>Anadarko and Southern Oklahoma Basins</u>	Number:	<u>C5058</u>
Basin:	<u>Anadarko and Southern Oklahoma Basins</u>	Number:	<u>C505801</u>
Storage Assessment Unit (SAU):	<u>Lower Virgilian</u>	Number:	<u>C50580107</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 5,900 maximum: 8,800

(2) Area of the SAU (acres): minimum: 2,473,000 most likely: 2,748,000 maximum: 3,023,000

(3) Mean total SAU thickness (ft): minimum: 400 most likely: 700 maximum: 1,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 220 most likely: 380 maximum: 540

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.15 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 18 maximum: 31,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 1.000 most likely: 11.00 maximum: 500

Storage Assessment Unit (SAU):

Lower Virgilian

Number:

C50580107

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>100</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>8/11/2011</u>
Assessment region:	<u>Western Mid-Continent</u>		
Province:	<u>Anadarko and Southern Oklahoma Basins</u>	Number:	<u>C5058</u>
Basin:	<u>Anadarko and Southern Oklahoma Basins</u>	Number:	<u>C505801</u>
Storage Assessment Unit (SAU):	<u>Chase and Council Grove Groups</u>	Number:	<u>C50580108</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 3,750    maximum: 5,500

(2) Area of the SAU (acres):      minimum: 8,569,000    most likely: 9,521,000    maximum: 10,473,000

(3) Mean total SAU thickness (ft):      minimum: 950    most likely: 1,050    maximum: 1,150

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).      x

Water in this SAU is both saline and fresh.     

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).     

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00    most likely: 1.00    maximum: 1.00

(6) Mean thickness net porous interval (ft):      minimum: 380    most likely: 420    maximum: 460

(7) Mean porosity net porous interval (fraction):      minimum: 0.08    most likely: 0.12    maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 670    most likely: 710    maximum: 215,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.001    most likely: 1.00    maximum: 250

Storage Assessment Unit (SAU):

Chase and Council Grove Groups

Number:

C50580108

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>66</u> % of mean SAU area
(2)	<u>Texas</u>	contains	<u>34</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>3.1</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>E. Slucher</u>	Date:	<u>2/1/2012</u>
Assessment region:	<u>Eastern Mid-Continent</u>		
Province:	<u>Appalachian Basin</u>	Number:	<u>C5067</u>
Basin:	<u>Appalachian Basin</u>	Number:	<u>C506701</u>
Storage Assessment Unit (SAU):	<u>Ordovician and Cambrian Composite</u>	Number:	<u>C50670101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,500 maximum: 13,000

(2) Area of the SAU (acres): minimum: 36,430,000 most likely: 40,478,000 maximum: 44,526,000

(3) Mean total SAU thickness (ft): minimum: 1,500 most likely: 2,000 maximum: 3,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 75 most likely: 100 maximum: 150

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.08 maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 500 most likely: 750 maximum: 39,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 3.00 maximum: 2,000

Storage Assessment Unit (SAU):

Ordovician and Cambrian Composite

Number:

C50670101

### Allocations of the SAU to States

(1)	<u>New York</u>	contains	<u>27</u> % of mean SAU area
(2)	<u>Ohio</u>	contains	<u>34</u> % of mean SAU area
(3)	<u>Pennsylvania</u>	contains	<u>26</u> % of mean SAU area
(4)	<u>West Virginia</u>	contains	<u>13</u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>3.9</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.3</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>87</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>5.9</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>C. Doolan</u>	Date:	<u>2/1/2012</u>
Assessment region:	<u>Eastern Mid-Continent</u>		
Province:	<u>Appalachian Basin</u>	Number:	<u>C5067</u>
Basin:	<u>Appalachian Basin</u>	Number:	<u>C506701</u>
Storage Assessment Unit (SAU):	<u>Clinton, Medina, and Tuscarora Formations</u>	Number:	<u>C50670102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,500 maximum: 13,000

(2) Area of the SAU (acres): minimum: 44,000,000 most likely: 48,890,000 maximum: 53,780,000

(3) Mean total SAU thickness (ft): minimum: 100 most likely: 200 maximum: 250

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 65 most likely: 100 maximum: 150

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.09 maximum: 0.13

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 28 most likely: 400 maximum: 20,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 13.00 maximum: 200



## Allocations of the SAU to States

(1)	<u>Kentucky</u>	contains	<u>4.2</u> % of mean SAU area
(2)	<u>Maryland</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>New Jersey</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>New York</u>	contains	<u>17</u> % of mean SAU area
(5)	<u>Ohio</u>	contains	<u>15</u> % of mean SAU area
(6)	<u>Pennsylvania</u>	contains	<u>35</u> % of mean SAU area
(7)	<u>Virginia</u>	contains	<u>1.2</u> % of mean SAU area
(8)	<u>West Virginia</u>	contains	<u>27</u> % of mean SAU area

## Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>5.7</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.9</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>88</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>C. Doolan</u>	Date:	<u>2/1/2012</u>
Assessment region:	<u>Eastern Mid-Continent</u>		
Province:	<u>Appalachian Basin</u>	Number:	<u>C5067</u>
Basin:	<u>Appalachian Basin</u>	Number:	<u>C506701</u>
Storage Assessment Unit (SAU):	<u>McKenzie, Lockport, and Newburg Formations</u>	Number:	<u>C50670103</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 11,500

(2) Area of the SAU (acres): minimum: 17,560,000 most likely: 19,510,000 maximum: 21,460,000

(3) Mean total SAU thickness (ft): minimum: 200 most likely: 250 maximum: 300

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 20 most likely: 30 maximum: 40

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.10 maximum: 0.14

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 6 most likely: 59 maximum: 3,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 16.00 maximum: 50

Storage Assessment Unit (SAU):

McKenzie, Lockport, and Newburg Formations

Number:

C50670103

### Allocations of the SAU to States

(1)	<u>Maryland</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>New York</u>	contains	<u>16</u>	% of mean SAU area
(3)	<u>Ohio</u>	contains	<u>22</u>	% of mean SAU area
(4)	<u>Pennsylvania</u>	contains	<u>49</u>	% of mean SAU area
(5)	<u>West Virginia</u>	contains	<u>13</u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>4.5</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>8.1</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>87</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink</u>	Date:	<u>2/1/2012</u>
Assessment region:	<u>Eastern Mid-Continent</u>		
Province:	<u>Appalachian Basin</u>	Number:	<u>C5067</u>
Basin:	<u>Appalachian Basin</u>	Number:	<u>C506701</u>
Storage Assessment Unit (SAU):	<u>Oriskany Sandstone</u>	Number:	<u>C50670104</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 9,500

(2) Area of the SAU (acres): minimum: 34,008,000 most likely: 37,787,000 maximum: 41,566,000

(3) Mean total SAU thickness (ft): minimum: 50 most likely: 200 maximum: 300

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 5 most likely: 20 maximum: 40

(7) Mean porosity net porous interval (fraction): minimum: 0.02 most likely: 0.07 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 300 most likely: 500 maximum: 40,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 1.00 maximum: 185

Storage Assessment Unit (SAU):

Oriskany Sandstone

Number:

C50670104

### Allocations of the SAU to States

(1)	<u>Kentucky</u>	contains	<u>3.0</u> % of mean SAU area
(2)	<u>Maryland</u>	contains	<u>1.2</u> % of mean SAU area
(3)	<u>New York</u>	contains	<u>7.6</u> % of mean SAU area
(4)	<u>Ohio</u>	contains	<u>13</u> % of mean SAU area
(5)	<u>Pennsylvania</u>	contains	<u>42</u> % of mean SAU area
(6)	<u>Virginia</u>	contains	<u>1.3</u> % of mean SAU area
(7)	<u>West Virginia</u>	contains	<u>32</u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>4.4</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>88</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	7/5/2011
Assessment region:	Western Mid-Continent		
Province:	Arkoma Basin	Number:	C5062
Basin:	Arkoma Basin	Number:	C506201
Storage Assessment Unit (SAU):	Ordovician Composite	Number:	C50620101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	8,000	maximum:	13,000
(2) Area of the SAU (acres):	minimum:	2,067,000	most likely:	2,297,000	maximum:	2,527,000
(3) Mean total SAU thickness (ft):	minimum:	3,500	most likely:	4,700	maximum:	6,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 800 most likely: 1,100 maximum: 1,400

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.10 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 180 most likely: 200 maximum: 16,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 10.00 maximum: 1,000

Storage Assessment Unit (SAU):

Ordovician Composite

Number:

C50620101

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>5.8</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>94</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	7/5/2011
Assessment region:	Western Mid-Continent		
Province:	Arkoma Basin	Number:	C5062
Basin:	Arkoma Basin	Number:	C506201
Storage Assessment Unit (SAU):	Hunton Group	Number:	C50620102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>8,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>6,934,000</u>	most likely: <u>7,704,000</u>	maximum: <u>8,474,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>220</u>	most likely: <u>270</u>	maximum: <u>320</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 20 most likely: 30 maximum: 40

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.07 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 330 maximum: 2,900

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 5.00 maximum: 200



Storage Assessment Unit (SAU):

Hunton Group

Number:

C50620102

### Allocations of the SAU to States

(1)	<u>Arkansas</u>	contains	<u>52</u> % of mean SAU area
(2)	<u>Oklahoma</u>	contains	<u>48</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>5.8</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>93</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	7/5/2011
Assessment region:	Western Mid-Continent		
Province:	Arkoma Basin	Number:	C5062
Basin:	Arkoma Basin	Number:	C506201
Storage Assessment Unit (SAU):	Batesville Sandstone and Wedington Sandstone Member	Number:	C50620103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 9,000    maximum: 13,000

(2) Area of the SAU (acres):          minimum: 1,603,000    most likely: 1,781,000    maximum: 1,959,000

(3) Mean total SAU thickness (ft):    minimum: 200    most likely: 250    maximum: 300

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).      x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00    most likely: 1.00    maximum: 1.00

(6) Mean thickness net porous interval (ft):    minimum: 5    most likely: 10    maximum: 20

(7) Mean porosity net porous interval (fraction):    minimum: 0.08    most likely: 0.11    maximum: 0.14

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0    most likely: 260    maximum: 770

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.010    most likely: 10.00    maximum: 100

Storage Assessment Unit (SAU):

Batesville Sandstone and Wedington Sandstone  
Member

Number: C50620103

**Allocations of the SAU to States**

(1)	<u>Arkansas</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

**Allocations of the SAU to General Land-Ownership Categories**

(1)	<u>Federal lands</u>	contain	<u>8.3</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>90</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	4/10/2012
Assessment region:	Coastal Plains		
Province:	Atlantic Coastal Plain	Number:	C5070
Basin:	Atlantic Coastal Plain	Number:	C507001
Storage Assessment Unit (SAU):	Lower Cretaceous Composite	Number:	C50700101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>3,750</u>	maximum: <u>5,200</u>
(2) Area of the SAU (acres):	minimum: <u>12,758,000</u>	most likely: <u>14,176,000</u>	maximum: <u>15,594,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>530</u>	most likely: <u>700</u>	maximum: <u>830</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.50 most likely: 0.65 maximum: 0.80

(6) Mean thickness net porous interval (ft): minimum: 150 most likely: 245 maximum: 335

(7) Mean porosity net porous interval (fraction): minimum: 0.17 most likely: 0.27 maximum: 0.31

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 3,100 maximum: 18,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 500.00 maximum: 5,000

Storage Assessment Unit (SAU):

Lower Cretaceous Composite

Number:

C50700101

### Allocations of the SAU to States

(1)	<u>Florida</u>	contains	<u>16</u> % of mean SAU area
(2)	<u>Georgia</u>	contains	<u>72</u> % of mean SAU area
(3)	<u>North Carolina</u>	contains	<u>9.2</u> % of mean SAU area
(4)	<u>South Carolina</u>	contains	<u>3.4</u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>6.9</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.9</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>76</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>15</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	4/10/2012
Assessment region:	Coastal Plains		
Province:	Atlantic Coastal Plain	Number:	C5070
Basin:	Atlantic Coastal Plain	Number:	C507001
Storage Assessment Unit (SAU):	Upper Cretaceous Composite	Number:	C50700102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>3,500</u>	maximum: <u>4,000</u>
(2) Area of the SAU (acres):	minimum: <u>270,000</u>	most likely: <u>300,000</u>	maximum: <u>330,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>575</u>	most likely: <u>600</u>	maximum: <u>625</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 180 most likely: 230 maximum: 300

(7) Mean porosity net porous interval (fraction): minimum: 0.28 most likely: 0.32 maximum: 0.34

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 1 maximum: 350

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 1,100.00 maximum: 4,500

Storage Assessment Unit (SAU):

Upper Cretaceous Composite

Number:

C50700102

### Allocations of the SAU to States

(1)	<u>North Carolina</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>5.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>2.3</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>93</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>7/5/2011</u>
Assessment region:	<u>Western Mid-Continent</u>		
Province:	<u>Bend Arch and Fort Worth Basin</u>	Number:	<u>C5045</u>
Basin:	<u>Bend Arch and Fort Worth Basin</u>	Number:	<u>C504501</u>
Storage Assessment Unit (SAU):	<u>Chappel Limestone and Ellenburger Group</u>	Number:	<u>C50450101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 4,500    maximum: 10,000

(2) Area of the SAU (acres):      minimum: 9,763,000    most likely: 10,848,000    maximum: 11,933,000

(3) Mean total SAU thickness (ft):      minimum: 1,000    most likely: 2,000    maximum: 3,000

(4) SAU water quality (check one):

    Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).      x

    Water in this SAU is both saline and fresh.      \_\_\_\_\_

    Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).      \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

                                 minimum: 1.00    most likely: 1.00    maximum: 1.00

(6) Mean thickness net porous interval (ft):      minimum: 200    most likely: 300    maximum: 800

(7) Mean porosity net porous interval (fraction):      minimum: 0.05    most likely: 0.10    maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

                                 minimum: 153    most likely: 294    maximum: 10,400

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.010    most likely: 0.10    maximum: 1,000



Storage Assessment Unit (SAU):

Chappel Limestone and Ellenburger Group

Number:

C50450101

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>Texas</u>	contains	<u>100</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.7</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>98</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>T. Roberts-Ashby</u>	Date:	<u>7/5/2011</u>
Assessment region:	<u>Western Mid-Continent</u>		
Province:	<u>Bend Arch and Fort Worth Basin</u>	Number:	<u>C5045</u>
Basin:	<u>Bend Arch and Fort Worth Basin</u>	Number:	<u>C504501</u>
Storage Assessment Unit (SAU):	<u>Bend Group and Comyn Formation</u>	Number:	<u>C50450102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 5,750 maximum: 8,500

(2) Area of the SAU (acres): minimum: 15,593,000 most likely: 17,326,000 maximum: 19,059,000

(3) Mean total SAU thickness (ft): minimum: 200 most likely: 400 maximum: 600

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 200 maximum: 300

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.12 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 10,000 most likely: 10,100 maximum: 238,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 25.00 maximum: 3,000

Storage Assessment Unit (SAU):

Bend Group and Comyn Formation

Number:

C50450102

### Allocations of the SAU to States

(1)	<u>Oklahoma</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>Texas</u>	contains	<u>100</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>99</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>10/21/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Bighorn Basin</u>	Number:	<u>C5034</u>
Basin:	<u>Bighorn Basin</u>	Number:	<u>C503401</u>
Storage Assessment Unit (SAU):	<u>Tensleep Sandstone</u>	Number:	<u>C50340101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,200 maximum: 13,000

(2) Area of the SAU (acres): minimum: 2,735,000 most likely: 3,039,000 maximum: 3,343,000

(3) Mean total SAU thickness (ft): minimum: 100 most likely: 175 maximum: 250

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.00 maximum: 0.18

(6) Mean thickness net porous interval (ft): minimum: 30 most likely: 50 maximum: 90

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.15 maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 1,230 most likely: 1,330 maximum: 2,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 60.00 maximum: 1,000

Storage Assessment Unit (SAU):

Tensleep Sandstone

Number:

C50340101

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>11</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>89</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>55</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.4</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>37.3</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>10/21/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Bighorn Basin</u>	Number:	<u>C5034</u>
Basin:	<u>Bighorn Basin</u>	Number:	<u>C503401</u>
Storage Assessment Unit (SAU):	<u>Tensleep Sandstone Deep</u>	Number:	<u>C50340102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,000</u>	maximum: <u>22,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,130,000</u>	most likely: <u>1,256,000</u>	maximum: <u>1,382,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>75</u>	most likely: <u>100</u>	maximum: <u>150</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.00 maximum: 0.62

(6) Mean thickness net porous interval (ft): minimum: 25 most likely: 35 maximum: 50

(7) Mean porosity net porous interval (fraction): minimum: 0.02 most likely: 0.04 maximum: 0.07

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 16 maximum: 108

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 3

Storage Assessment Unit (SAU):

Tensleep Sandstone Deep

Number:

C50340102

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>4.1</u>	% of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>96</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>71</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.7</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>24</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink</u>	Date:	<u>11/1/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Bighorn Basin</u>	Number:	<u>C5034</u>
Basin:	<u>Bighorn Basin</u>	Number:	<u>C503401</u>
Storage Assessment Unit (SAU):	<u>Ervay Member</u>	Number:	<u>C50340103</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 2,408,000 most likely: 2,676,000 maximum: 2,944,000

(3) Mean total SAU thickness (ft): minimum: 30 most likely: 60 maximum: 120

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.35</u>	most likely:	<u>0.40</u>	maximum:	<u>0.55</u>
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(6) Mean thickness net porous interval (ft): minimum: 20 most likely: 40 maximum: 60

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.10 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>700</u>	most likely:	<u>750</u>	maximum:	<u>10,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 10.00 maximum: 100



Storage Assessment Unit (SAU):

Ervay Member

Number:

C50340103

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>13</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>87</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>56</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>36</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	11/1/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Bighorn Basin	Number:	C5034
Basin:	Bighorn Basin	Number:	C503401
Storage Assessment Unit (SAU):	Ervey Member Deep	Number:	C50340104

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,000</u>	maximum: <u>21,500</u>	<u>x</u>
(2) Area of the SAU (acres):	minimum: <u>1,046,000</u>	most likely: <u>1,162,000</u>	maximum: <u>1,278,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>30</u>	most likely: <u>60</u>	maximum: <u>120</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.55 most likely: 0.85 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 20 most likely: 40 maximum: 60

(7) Mean porosity net porous interval (fraction): minimum: 0.02 most likely: 0.03 maximum: 0.07

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 20 maximum: 2,100

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 1.00 maximum: 10

Storage Assessment Unit (SAU):

Ervey Member Deep

Number:

C50340104

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>3.9</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>96</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>71</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.7</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>24</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	11/1/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Bighorn Basin	Number:	C5034
Basin:	Bighorn Basin	Number:	C503401
Storage Assessment Unit (SAU):	Crow Mountain Sandstone	Number:	C50340105

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	<input type="checkbox"/>
> 13,000 ft	<input checked="" type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 7,000    maximum: 13,000

(2) Area of the SAU (acres):            minimum: 2,325,000    most likely: 2,583,000    maximum: 2,841,000

(3) Mean total SAU thickness (ft):    minimum: 40    most likely: 60    maximum: 80

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). ☐

Water in this SAU is both saline and fresh. ☒

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). ☐

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.60    most likely: 0.80    maximum: 0.90

(6) Mean thickness net porous interval (ft):    minimum: 15    most likely: 20    maximum: 30

(7) Mean porosity net porous interval (fraction):    minimum: 0.12    most likely: 0.15    maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0    most likely: 60    maximum: 1,800

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.100    most likely: 10.00    maximum: 120

Storage Assessment Unit (SAU):

Crow Mountain Sandstone

Number:

C50340105

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>14</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>86</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>57</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.9</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>36</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	11/1/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Bighorn Basin	Number:	C5034
Basin:	Bighorn Basin	Number:	C503401
Storage Assessment Unit (SAU):	Crow Mountain Sandstone Deep	Number:	C50340106

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,000</u>	maximum: <u>21,000</u>	<u>x</u>
(2) Area of the SAU (acres):	minimum: <u>958,000</u>	most likely: <u>1,064,000</u>	maximum: <u>1,170,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>40</u>	most likely: <u>60</u>	maximum: <u>80</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.60 most likely: 0.90 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 15 most likely: 20 maximum: 30

(7) Mean porosity net porous interval (fraction): minimum: 0.03 most likely: 0.06 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 20 maximum: 500

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 1.00 maximum: 10

Storage Assessment Unit (SAU):

Crow Mountain Sandstone Deep

Number:

C50340106

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>3.6</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>96</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>71</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.6</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>24</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>J. Covault</u>	Date:	<u>10/22/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Bighorn Basin</u>	Number:	<u>C5034</u>
Basin:	<u>Bighorn Basin</u>	Number:	<u>C503401</u>
Storage Assessment Unit (SAU):	<u>Cloverly Formation</u>	Number:	<u>C50340107</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 2,073,000 most likely: 2,303,000 maximum: 2,533,000

(3) Mean total SAU thickness (ft): minimum: 200 most likely: 240 maximum: 280

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.01</u>	most likely:	<u>0.03</u>	maximum:	<u>0.96</u>
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(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 120 maximum: 140

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.15 maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>18</u>	most likely:	<u>34</u>	maximum:	<u>92,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 50.00 maximum: 1,000



Storage Assessment Unit (SAU):

Cloverly Formation

Number:

C50340107

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>14</u>	% of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>86</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>60</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.2</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>34</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>J. Covault</u>	Date:	<u>10/22/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Bighorn Basin</u>	Number:	<u>C5034</u>
Basin:	<u>Bighorn Basin</u>	Number:	<u>C503401</u>
Storage Assessment Unit (SAU):	<u>Cloverly Formation Deep</u>	Number:	<u>C50340108</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,000</u>	maximum: <u>20,500</u>
(2) Area of the SAU (acres):	minimum: <u>851,000</u>	most likely: <u>945,000</u>	maximum: <u>1,040,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>200</u>	most likely: <u>220</u>	maximum: <u>240</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 110 maximum: 120

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.08 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 3 maximum: 6,600

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 0.50 maximum: 1

Storage Assessment Unit (SAU):

Cloverly Formation Deep

Number:

C50340108

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>3.1</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>97</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>72</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>23</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	10/22/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Bighorn Basin	Number:	C5034
Basin:	Bighorn Basin	Number:	C503401
Storage Assessment Unit (SAU):	Muddy Sandstone	Number:	C50340109

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	
(1) SAU depth from surface (ft):	minimum: 3,000	most likely: 7,000	maximum: 13,000
(2) Area of the SAU (acres):	minimum: 2,094,000	most likely: 2,327,000	maximum: 2,560,000
(3) Mean total SAU thickness (ft):	minimum: 20	most likely: 30	maximum: 40
(4) SAU water quality (check one):			
	Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).		
	Water in this SAU is both saline and fresh.		x
	Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).		
(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):	minimum: 0.01	most likely: 0.09	maximum: 0.78
(6) Mean thickness net porous interval (ft):	minimum: 12	most likely: 18	maximum: 24
(7) Mean porosity net porous interval (fraction):	minimum: 0.12	most likely: 0.15	maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	270	most likely:	280	maximum:	11,000
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum:	0.010	most likely:	20.00	maximum:	300
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Storage Assessment Unit (SAU):

Muddy Sandstone

Number:

C50340109

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>13</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>87</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>61</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.7</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>33</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	10/22/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Bighorn Basin	Number:	C5034
Basin:	Bighorn Basin	Number:	C503401
Storage Assessment Unit (SAU):	Muddy Sandstone Deep	Number:	C50340110

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: 13,000	most likely: 15,000	maximum: 19,000
(2) Area of the SAU (acres):	minimum: 663,000	most likely: 737,000	maximum: 811,000
(3) Mean total SAU thickness (ft):	minimum: 20	most likely: 30	maximum: 40

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 12 most likely: 18 maximum: 24

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 3 most likely: 4 maximum: 680

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 10

Storage Assessment Unit (SAU):

Muddy Sandstone Deep

Number:

C50340110

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>1.5</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>99</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>75</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.3</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>19</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>W. Craddock</u>	Date:	<u>10/22/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Bighorn Basin</u>	Number:	<u>C5034</u>
Basin:	<u>Bighorn Basin</u>	Number:	<u>C503401</u>
Storage Assessment Unit (SAU):	<u>Frontier Sandstone</u>	Number:	<u>C50340111</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 8,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 1,941,000 most likely: 2,157,000 maximum: 2,373,000

(3) Mean total SAU thickness (ft): minimum: 700 most likely: 750 maximum: 800

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.19</u>	most likely:	<u>0.31</u>	maximum:	<u>0.65</u>
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(6) Mean thickness net porous interval (ft): minimum: 75 most likely: 100 maximum: 125

(7) Mean porosity net porous interval (fraction): minimum: 0.09 most likely: 0.13 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>550</u>	most likely:	<u>620</u>	maximum:	<u>23,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 30.00 maximum: 500



Storage Assessment Unit (SAU):

Frontier Sandstone

Number:

C50340111

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>13</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>87</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>62</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.4</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>32</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>W. Craddock</u>	Date:	<u>10/22/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Bighorn Basin</u>	Number:	<u>C5034</u>
Basin:	<u>Bighorn Basin</u>	Number:	<u>C503401</u>
Storage Assessment Unit (SAU):	<u>Frontier Sandstone Deep</u>	Number:	<u>C50340112</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,500</u>	maximum: <u>18,000</u>
(2) Area of the SAU (acres):	minimum: <u>588,000</u>	most likely: <u>653,000</u>	maximum: <u>718,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>650</u>	most likely: <u>680</u>	maximum: <u>710</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.66 most likely: 0.83 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 90 most likely: 115 maximum: 140

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.07 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 41 maximum: 2,400

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.50 maximum: 10

Storage Assessment Unit (SAU):

Frontier Sandstone Deep

Number:

C50340112

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>1.2</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>99</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>77</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.5</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>17</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>W. Craddock</u>	Date:	<u>2/1/2012</u>
Assessment region:	<u>Eastern Mid-Continent</u>		
Province:	<u>Black Warrior Basin</u>	Number:	<u>C5065</u>
Basin:	<u>Black Warrior Basin</u>	Number:	<u>C506501</u>
Storage Assessment Unit (SAU):	<u>Lewis Sandstone</u>	Number:	<u>C50650101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 11,000

(2) Area of the SAU (acres): minimum: 643,000 most likely: 804,000 maximum: 884,000

(3) Mean total SAU thickness (ft): minimum: 100 most likely: 200 maximum: 400

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<u>x</u>
Water in this SAU is both saline and fresh.	
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.90</u>	most likely:	<u>1.00</u>	maximum:	<u>1.00</u>
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(6) Mean thickness net porous interval (ft): minimum: 10 most likely: 20 maximum: 40

(7) Mean porosity net porous interval (fraction): minimum: 0.07 most likely: 0.10 maximum: 0.13

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>2</u>	most likely:	<u>9</u>	maximum:	<u>200</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 20.00 maximum: 200

Storage Assessment Unit (SAU):

Lewis Sandstone

Number:

C50650101

### Allocations of the SAU to States

(1)	<u>Mississippi</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>4.1</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>96</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	2/1/2012
Assessment region:	Eastern Mid-Continent		
Province:	Black Warrior Basin	Number:	C5065
Basin:	Black Warrior Basin	Number:	C506501
Storage Assessment Unit (SAU):	Parkwood Formation	Number:	C50650102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 5,000    maximum: 10,500

(2) Area of the SAU (acres):            minimum: 1,447,000    most likely: 1,608,000    maximum: 1,769,000

(3) Mean total SAU thickness (ft):    minimum: 350    most likely: 450    maximum: 550

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).      x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90    most likely: 1.00    maximum: 1.00

(6) Mean thickness net porous interval (ft):    minimum: 20    most likely: 35    maximum: 70

(7) Mean porosity net porous interval (fraction):    minimum: 0.07    most likely: 0.10    maximum: 0.13

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 470    most likely: 490    maximum: 5,800

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.010    most likely: 20.00    maximum: 200

Storage Assessment Unit (SAU):

Parkwood Formation

Number:

C50650102

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>31</u>	% of mean SAU area
(2)	<u>Mississippi</u>	contains	<u>69</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>99</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	7/5/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Denver Basin	Number:	C5039
Basin:	Denver Basin	Number:	C503901
Storage Assessment Unit (SAU):	Plainview and Lytle Formations	Number:	C50390101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 11,000

(2) Area of the SAU (acres): minimum: 21,960,000 most likely: 24,400,000 maximum: 26,840,000

(3) Mean total SAU thickness (ft): minimum: 110 most likely: 140 maximum: 170

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	0.05	most likely:	0.30	maximum:	0.70
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(6) Mean thickness net porous interval (ft): minimum: 80 most likely: 100 maximum: 120

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.10 maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	9	most likely:	1,000	maximum:	200,000
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 0.10 maximum: 150



Storage Assessment Unit (SAU):

Plainview and Lytle Formations

Number:

C50390101

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>59</u>	% of mean SAU area
(2)	<u>Nebraska</u>	contains	<u>29</u>	% of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>12</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.9</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.7</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>92</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>J. Covault</u>	Date:	<u>7/5/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Denver Basin</u>	Number:	<u>C5039</u>
Basin:	<u>Denver Basin</u>	Number:	<u>C503901</u>
Storage Assessment Unit (SAU):	<u>Muddy Sandstone</u>	Number:	<u>C50390102</u>
SAU relationship to NOGA AU:	<u></u>		
Notes from assessor:	<u></u>		

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	<u></u>

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 5,500 maximum: 10,000

(2) Area of the SAU (acres): minimum: 21,150,000 most likely: 23,500,000 maximum: 25,850,000

(3) Mean total SAU thickness (ft): minimum: 160 most likely: 200 maximum: 240

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.05 most likely: 0.30 maximum: 0.80

(6) Mean thickness net porous interval (ft): minimum: 80 most likely: 100 maximum: 120

(7) Mean porosity net porous interval (fraction): minimum: 0.13 most likely: 0.18 maximum: 0.23

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 3,640 most likely: 3,707 maximum: 270,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 100.00 maximum: 2,000

Storage Assessment Unit (SAU):

Muddy Sandstone

Number:

C50390102

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>60</u>	% of mean SAU area
(2)	<u>Nebraska</u>	contains	<u>28</u>	% of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>12</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.7</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.7</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>93</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>7/5/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Denver Basin</u>	Number:	<u>C5039</u>
Basin:	<u>Denver Basin</u>	Number:	<u>C503901</u>
Storage Assessment Unit (SAU):	<u>Greenhorn Limestone</u>	Number:	<u>C50390103</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,730</u>	maximum: <u>10,000</u>
(2) Area of the SAU (acres):	minimum: <u>18,022,000</u>	most likely: <u>20,024,000</u>	maximum: <u>22,026,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>50</u>	most likely: <u>125</u>	maximum: <u>200</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.10 most likely: 0.30 maximum: 0.50

(6) Mean thickness net porous interval (ft): minimum: 5 most likely: 13 maximum: 20

(7) Mean porosity net porous interval (fraction): minimum: 0.07 most likely: 0.09 maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 10 maximum: 3,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 2

Storage Assessment Unit (SAU):

Greenhorn Limestone

Number:

C50390103

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>59</u>	% of mean SAU area
(2)	<u>Nebraska</u>	contains	<u>27</u>	% of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>14</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.6</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.7</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>93</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>7/5/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Denver Basin</u>	Number:	<u>C5039</u>
Basin:	<u>Denver Basin</u>	Number:	<u>C503901</u>
Storage Assessment Unit (SAU):	<u>Niobrara Formation and Codell Sandstone</u>	Number:	<u>C50390104</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,000</u>	maximum: <u>9,300</u>
(2) Area of the SAU (acres):	minimum: <u>15,335,000</u>	most likely: <u>17,039,000</u>	maximum: <u>18,743,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>300</u>	most likely: <u>350</u>	maximum: <u>400</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.10 most likely: 0.30 maximum: 0.50

(6) Mean thickness net porous interval (ft): minimum: 10 most likely: 20 maximum: 40

(7) Mean porosity net porous interval (fraction): minimum: 0.08 most likely: 0.10 maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 660 most likely: 1,000 maximum: 19,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 2

Storage Assessment Unit (SAU):

Niobrara Formation and Codell Sandstone

Number:

C50390104

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>63</u>	% of mean SAU area
(2)	<u>Nebraska</u>	contains	<u>22</u>	% of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>15</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.7</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.9</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>92</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>7/5/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Denver Basin</u>	Number:	<u>C5039</u>
Basin:	<u>Denver Basin</u>	Number:	<u>C503901</u>
Storage Assessment Unit (SAU):	<u>Terry and Hygiene Sandstone Members</u>	Number:	<u>C50390105</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>4,500</u>	maximum: <u>7,300</u>
(2) Area of the SAU (acres):	minimum: <u>5,760,000</u>	most likely: <u>6,400,000</u>	maximum: <u>7,040,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>300</u>	most likely: <u>500</u>	maximum: <u>700</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.10 most likely: 0.30 maximum: 0.50

(6) Mean thickness net porous interval (ft): minimum: 20 most likely: 35 maximum: 50

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.08 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 350 most likely: 380 maximum: 6,300

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 1.00 maximum: 10



Storage Assessment Unit (SAU):

Terry and Hygiene Sandstone Members

Number:

C50390105

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>60</u>	% of mean SAU area
(2)	<u>Nebraska</u>	contains	<u>2.9</u>	% of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>37</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>3.2</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.5</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>90</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>8/11/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Eastern Great Basin</u>	Number:	<u>C5019</u>
Basin:	<u>Eastern Great Basin</u>	Number:	<u>C501901</u>
Storage Assessment Unit (SAU):	<u>Navajo Sandstone</u>	Number:	<u>C50190102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 4,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 765,000 most likely: 850,000 maximum: 935,000

(3) Mean total SAU thickness (ft): minimum: 1,200 most likely: 1,400 maximum: 1,600

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.25</u>	most likely:	<u>0.70</u>	maximum:	<u>1.00</u>
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(6) Mean thickness net porous interval (ft): minimum: 300 most likely: 400 maximum: 500

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.08 maximum: 0.13

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>46</u>	most likely:	<u>83</u>	maximum:	<u>13,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 1.00 maximum: 300

Storage Assessment Unit (SAU):

Navajo Sandstone

Number:

C50190102

### Allocations of the SAU to States

(1)	<u>Utah</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>52</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.4</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>42</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>4/11/2012</u>
Assessment region:	<u>Eastern Mesozoic Rift Basins</u>		
Province:	<u>Eastern Mesozoic Rift Basins</u>	Number:	<u>C5068</u>
Basin:	<u>Newark Basin</u>	Number:	<u>C506801</u>
Storage Assessment Unit (SAU):	<u>Stockton Formation</u>	Number:	<u>C50680101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,500 maximum: 13,000

(2) Area of the SAU (acres): minimum: 798,000 most likely: 997,000 maximum: 1,097,000

(3) Mean total SAU thickness (ft): minimum: 2,000 most likely: 3,000 maximum: 4,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.10 most likely: 0.70 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 350 most likely: 550 maximum: 750

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 48 most likely: 65 maximum: 13,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 0.10 maximum: 100

Storage Assessment Unit (SAU):

Stockton Formation

Number:

C50680101

### Allocations of the SAU to States

(1)	<u>New Jersey</u>	contains	<u>59</u> % of mean SAU area
(2)	<u>New York</u>	contains	<u>3.0</u> % of mean SAU area
(3)	<u>Pennsylvania</u>	contains	<u>38</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.4</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>98</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>E. Slucher, M. Buursink</u>	Date:	<u>12/16/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Paleozoic Composite</u>	Number:	<u>C50370101</u>

SAU relationship to NOGA AU:

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Notes from assessor:

\_\_\_\_\_

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	_____

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 5,900    maximum: 13,000

(2) Area of the SAU (acres):      minimum: 4,195,000    most likely: 4,661,000    maximum: 5,127,000

(3) Mean total SAU thickness (ft):      minimum: 500    most likely: 800    maximum: 1,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).      \_\_\_\_\_

Water in this SAU is both saline and fresh.      x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).      \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.20    most likely: 0.40    maximum: 0.60

(6) Mean thickness net porous interval (ft):      minimum: 300    most likely: 500    maximum: 700

(7) Mean porosity net porous interval (fraction):      minimum: 0.05    most likely: 0.09    maximum: 0.13

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 490    most likely: 630    maximum: 7,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.100    most likely: 1.00    maximum: 300

Storage Assessment Unit (SAU):

Paleozoic Composite

Number:

C50370101

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>26</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>74</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>54</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.8</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>41</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>E. Slucher, M. Buursink</u>	Date:	<u>12/16/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Paleozoic Composite Deep</u>	Number:	<u>C50370102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,000</u>	maximum: <u>24,500</u>
(2) Area of the SAU (acres):	minimum: <u>8,538,000</u>	most likely: <u>9,487,000</u>	maximum: <u>10,436,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>900</u>	most likely: <u>1,400</u>	maximum: <u>2,100</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.30 most likely: 0.50 maximum: 0.90

(6) Mean thickness net porous interval (ft): minimum: 700 most likely: 900 maximum: 1200

(7) Mean porosity net porous interval (fraction): minimum: 0.02 most likely: 0.06 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 310 most likely: 650 maximum: 270,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.30 maximum: 10



Storage Assessment Unit (SAU):

Paleozoic Composite Deep

Number:

C50370102

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>13</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>3.0</u> % of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>84</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>68</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.9</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>28</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	12/16/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Greater Green River Basin	Number:	C5037
Basin:	Greater Green River Basin	Number:	C503701
Storage Assessment Unit (SAU):	Nugget Sandstone	Number:	C50370103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,200</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>611,000</u>	most likely: <u>679,000</u>	maximum: <u>747,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>800</u>	most likely: <u>850</u>	maximum: <u>900</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	
Water in this SAU is both saline and fresh.	
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.10</u>	most likely: <u>0.60</u>	maximum: <u>0.90</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>270</u>	most likely: <u>280</u>	maximum: <u>300</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.10</u>	most likely: <u>0.13</u>	maximum: <u>0.15</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>20</u>	most likely: <u>100</u>	maximum: <u>1,700</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.100</u>	most likely: <u>10.00</u>	maximum: <u>200</u>
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Storage Assessment Unit (SAU):

Nugget Sandstone

Number:

C50370103

### Allocations of the SAU to States

(1)	<u>Utah</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>99</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>54</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.2</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>42</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink</u>	Date:	<u>12/16/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Nugget Sandstone Deep</u>	Number:	<u>C50370104</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,200</u>	maximum: <u>22,500</u>
(2) Area of the SAU (acres):	minimum: <u>5,378,000</u>	most likely: <u>5,975,000</u>	maximum: <u>6,573,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>800</u>	most likely: <u>900</u>	maximum: <u>1,200</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.50 most likely: 0.80 maximum: 0.95

(6) Mean thickness net porous interval (ft): minimum: 270 most likely: 300 maximum: 400

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.10 maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 50 most likely: 220 maximum: 80,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 1.00 maximum: 10

Storage Assessment Unit (SAU):

Nugget Sandstone Deep

Number:

C50370104

### Allocations of the SAU to States

(1)	<u>Utah</u>	contains	<u>4.5</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>96</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>69</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.3</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>28</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>12/16/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Muddy Sandstone and Cloverly Formation</u>	Number:	<u>C50370105</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 8,400 maximum: 13,000

(2) Area of the SAU (acres): minimum: 8,326,000 most likely: 9,251,000 maximum: 10,176,000

(3) Mean total SAU thickness (ft): minimum: 150 most likely: 240 maximum: 320

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.00</u>	most likely:	<u>0.10</u>	maximum:	<u>0.40</u>
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(6) Mean thickness net porous interval (ft): minimum: 60 most likely: 96 maximum: 128

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.15 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>3,335</u>	most likely:	<u>3,400</u>	maximum:	<u>19,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 11.00 maximum: 500

Storage Assessment Unit (SAU):

Muddy Sandstone and Cloverly Formation

Number:

C50370105

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>24</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>75</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>60</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.8</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>35</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	R. Drake	Date:	12/16/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Greater Green River Basin	Number:	C5037
Basin:	Greater Green River Basin	Number:	C503701
Storage Assessment Unit (SAU):	Muddy Sandstone and Cloverly Formation Deep	Number:	C50370106

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,100</u>	maximum: <u>21,166</u>	<u>x</u>
(2) Area of the SAU (acres):	minimum: <u>4,282,000</u>	most likely: <u>4,758,000</u>	maximum: <u>5,234,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>200</u>	most likely: <u>270</u>	maximum: <u>350</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.05 most likely: 0.10 maximum: 0.40

(6) Mean thickness net porous interval (ft): minimum: 80 most likely: 110 maximum: 140

(7) Mean porosity net porous interval (fraction): minimum: 0.07 most likely: 0.12 maximum: 0.14

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 160 most likely: 180 maximum: 6,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 12.00 maximum: 100



Storage Assessment Unit (SAU):

Muddy Sandstone and Cloverly Formation Deep

Number:

C50370106

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>8.1</u>	% of mean SAU area
(2)	<u>Utah</u>	contains	<u>4.6</u>	% of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>87</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>69</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.4</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>27</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>12/16/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Frontier Sandstone</u>	Number:	<u>C50370107</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 8,800 maximum: 13,000

(2) Area of the SAU (acres): minimum: 5,410,000 most likely: 6,011,000 maximum: 6,612,000

(3) Mean total SAU thickness (ft): minimum: 200 most likely: 400 maximum: 700

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.05 most likely: 0.10 maximum: 0.40

(6) Mean thickness net porous interval (ft): minimum: 50 most likely: 100 maximum: 200

(7) Mean porosity net porous interval (fraction): minimum: 0.12 most likely: 0.15 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 8,400 most likely: 8,466 maximum: 125,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 1.00 maximum: 250

Storage Assessment Unit (SAU):

Frontier Sandstone

Number:

C50370107

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>20</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>79</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>57</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.8</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>38</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>12/16/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Frontier Sandstone Deep</u>	Number:	<u>C50370108</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>14,900</u>	maximum: <u>20,700</u>
(2) Area of the SAU (acres):	minimum: <u>6,421,000</u>	most likely: <u>7,134,000</u>	maximum: <u>7,847,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>200</u>	most likely: <u>400</u>	maximum: <u>600</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.05 most likely: 0.10 maximum: 0.60

(6) Mean thickness net porous interval (ft): minimum: 50 most likely: 100 maximum: 200

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 10 most likely: 60 maximum: 7,200

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 1

Storage Assessment Unit (SAU):

Frontier Sandstone Deep

Number:

C50370108

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>13</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>2.6</u> % of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>84</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>70</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.6</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>27</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>12/17/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Hilliard, Baxter, and Mancos Shales</u>	Number:	<u>C50370109</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>8,500</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>7,623,000</u>	most likely: <u>8,470,000</u>	maximum: <u>9,317,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>3,500</u>	most likely: <u>5,000</u>	maximum: <u>6,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.30 most likely: 0.60 maximum: 0.80

(6) Mean thickness net porous interval (ft): minimum: 200 most likely: 300 maximum: 400

(7) Mean porosity net porous interval (fraction): minimum: 0.13 most likely: 0.15 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 102 most likely: 116 maximum: 30,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 1.00 maximum: 70

Storage Assessment Unit (SAU):

Hilliard, Baxter, and Mancos Shales

Number:

C50370109

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>16</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>84</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>63</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.8</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>33</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>12/17/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Hilliard, Baxter, and Mancos Shales Deep</u>	Number:	<u>C50370110</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,000</u>	maximum: <u>20,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,120,000</u>	most likely: <u>1,244,000</u>	maximum: <u>1,368,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>3,500</u>	most likely: <u>5,000</u>	maximum: <u>6,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.80 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 200 most likely: 300 maximum: 400

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.08 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 1 maximum: 2,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 0.10 maximum: 5



Storage Assessment Unit (SAU):

Hilliard, Baxter, and Mancos Shales Deep

Number:

C50370110

### Allocations of the SAU to States

(1)	<u>Utah</u>	contains	<u>12</u>	% of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>88</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>71</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.1</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>24</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	P. Warwick	Date:	12/17/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Greater Green River Basin	Number:	C5037
Basin:	Greater Green River Basin	Number:	C503701
Storage Assessment Unit (SAU):	Mesaverde Group	Number:	C50370111

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>9,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>3,978,000</u>	most likely: <u>4,420,000</u>	maximum: <u>4,862,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>2,100</u>	most likely: <u>2,600</u>	maximum: <u>3,100</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	
Water in this SAU is both saline and fresh.	x
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.25</u>	most likely: <u>0.45</u>	maximum: <u>0.70</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>590</u>	most likely: <u>730</u>	maximum: <u>870</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.10</u>	most likely: <u>0.12</u>	maximum: <u>0.16</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>870</u>	most likely: <u>890</u>	maximum: <u>100,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.100</u>	most likely: <u>3.00</u>	maximum: <u>100</u>
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Storage Assessment Unit (SAU):

Mesaverde Group

Number:

C50370111

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>30</u>	% of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>70</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>66</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.5</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>30</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>P. Warwick</u>	Date:	<u>12/17/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Mesaverde Group Deep</u>	Number:	<u>C50370112</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,000</u>	maximum: <u>18,000</u>
(2) Area of the SAU (acres):	minimum: <u>601,000</u>	most likely: <u>668,000</u>	maximum: <u>735,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>2,000</u>	most likely: <u>2,500</u>	maximum: <u>2,900</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.25 most likely: 0.50 maximum: 0.70

(6) Mean thickness net porous interval (ft): minimum: 560 most likely: 700 maximum: 810

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.08 maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 18 maximum: 20,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.08 maximum: 10

Storage Assessment Unit (SAU):

Mesaverde Group Deep

Number:

C50370112

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>83</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>15</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>12/17/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Dad Member</u>	Number:	<u>C50370113</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 8,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 3,769,000 most likely: 4,188,000 maximum: 4,607,000

(3) Mean total SAU thickness (ft): minimum: 1,600 most likely: 2,000 maximum: 2,400

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.10</u>	most likely:	<u>0.20</u>	maximum:	<u>0.45</u>
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(6) Mean thickness net porous interval (ft): minimum: 150 most likely: 200 maximum: 250

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.15 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>1,349</u>	most likely:	<u>1,444</u>	maximum:	<u>8,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 3.00 maximum: 60

Storage Assessment Unit (SAU):

Dad Member

Number:

C50370113

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>25</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>75</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>68</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.2</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>28</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>12/17/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Greater Green River Basin</u>	Number:	<u>C5037</u>
Basin:	<u>Greater Green River Basin</u>	Number:	<u>C503701</u>
Storage Assessment Unit (SAU):	<u>Dad Member Deep</u>	Number:	<u>C50370114</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,000</u>	maximum: <u>17,000</u>
(2) Area of the SAU (acres):	minimum: <u>306,000</u>	most likely: <u>340,000</u>	maximum: <u>374,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,800</u>	most likely: <u>2,000</u>	maximum: <u>2,500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.35 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 300 most likely: 450 maximum: 550

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.06 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 3 most likely: 5 maximum: 1,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 0.10 maximum: 10



Storage Assessment Unit (SAU):

Dad Member Deep

Number:

C50370114

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>87</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.4</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>11</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>E. Slucher, P. Warwick</u>	Date:	<u>12/15/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Hanna, Laramie, and Shirley Basins</u>	Number:	<u>C5030</u>
Basin:	<u>Hanna, Laramie, and Shirley Basins</u>	Number:	<u>C503001</u>
Storage Assessment Unit (SAU):	<u>Paleozoic Composite</u>	Number:	<u>C50300101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	
(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>6,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,997,000</u>	most likely: <u>2,219,000</u>	maximum: <u>2,441,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>400</u>	most likely: <u>600</u>	maximum: <u>800</u>
(4) SAU water quality (check one):			
Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).			
Water in this SAU is both saline and fresh.			
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).			
(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):			
	minimum: <u>0.05</u>	most likely: <u>0.20</u>	maximum: <u>0.30</u>
(6) Mean thickness net porous interval (ft):	minimum: <u>120</u>	most likely: <u>180</u>	maximum: <u>240</u>
(7) Mean porosity net porous interval (fraction):	minimum: <u>0.06</u>	most likely: <u>0.12</u>	maximum: <u>0.17</u>

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>18</u>	most likely:	<u>70</u>	maximum:	<u>7,024</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum:	<u>0.005</u>	most likely:	<u>100.00</u>	maximum:	<u>1,500</u>
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Storage Assessment Unit (SAU):

Paleozoic Composite

Number:

C50300101

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>31</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.8</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>61</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	E. Slucher, P. Warwick	Date:	12/15/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Hanna, Laramie, and Shirley Basins	Number:	C5030
Basin:	Hanna, Laramie, and Shirley Basins	Number:	C503001
Storage Assessment Unit (SAU):	Paleozoic Composite Deep	Number:	C50300102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

				x
(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>20,000</u>	maximum: <u>38,000</u>	
(2) Area of the SAU (acres):	minimum: <u>349,000</u>	most likely: <u>388,000</u>	maximum: <u>427,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>500</u>	most likely: <u>700</u>	maximum: <u>900</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.20 maximum: 1.00

(6) Mean thickness net porous interval (ft):

minimum: 150 most likely: 210 maximum: 270

(7) Mean porosity net porous interval (fraction):

minimum: 0.03 most likely: 0.07 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 7 maximum: 730

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: 0.001 most likely: 1.00 maximum: 100

Storage Assessment Unit (SAU):

Paleozoic Composite Deep

Number:

C50300102

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>42</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.8</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>56</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	12/20/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Hanna, Laramie, and Shirley Basins	Number:	C5030
Basin:	Hanna, Laramie, and Shirley Basins	Number:	C503001
Storage Assessment Unit (SAU):	Muddy Sandstone and Cloverly Formation	Number:	C50300103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/> x
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>6,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,051,000</u>	most likely: <u>1,168,000</u>	maximum: <u>1,285,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>200</u>	most likely: <u>230</u>	maximum: <u>260</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input type="checkbox"/>
Water in this SAU is both saline and fresh.	<input checked="" type="checkbox"/> x
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.00</u>	most likely: <u>0.00</u>	maximum: <u>0.94</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>70</u>	most likely: <u>80</u>	maximum: <u>90</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.10</u>	most likely: <u>0.15</u>	maximum: <u>0.20</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>15</u>	most likely: <u>19</u>	maximum: <u>35,200</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.100</u>	most likely: <u>40.00</u>	maximum: <u>1,000</u>
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Storage Assessment Unit (SAU):

Muddy Sandstone and Cloverly Formation

Number:

C50300103

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>26</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.9</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>67</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	12/20/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Hanna, Laramie, and Shirley Basins	Number:	C5030
Basin:	Hanna, Laramie, and Shirley Basins	Number:	C503001
Storage Assessment Unit (SAU):	Muddy Sandstone and Cloverly Formation Deep	Number:	C50300104

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>19,000</u>	maximum: <u>35,000</u>	<u>x</u>
(2) Area of the SAU (acres):	minimum: <u>290,000</u>	most likely: <u>322,000</u>	maximum: <u>354,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>200</u>	most likely: <u>230</u>	maximum: <u>260</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 70 most likely: 80 maximum: 90

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 1 maximum: 2,800

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 0.50 maximum: 10



Storage Assessment Unit (SAU):

Muddy Sandstone and Cloverly Formation Deep

Number:

C50300104

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>42</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.5</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>55</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill	Date:	12/15/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Hanna, Laramie, and Shirley Basins	Number:	C5030
Basin:	Hanna, Laramie, and Shirley Basins	Number:	C503001
Storage Assessment Unit (SAU):	Frontier Sandstone	Number:	C50300105

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>7,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>914,000</u>	most likely: <u>1,015,000</u>	maximum: <u>1,117,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>600</u>	most likely: <u>700</u>	maximum: <u>730</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

☒ x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.30 most likely: 0.60 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 20 most likely: 45 maximum: 60

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.12 maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 2 maximum: 200

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 10.00 maximum: 100

Storage Assessment Unit (SAU):

Frontier Sandstone

Number:

C50300105

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>27</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.8</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>66</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill	Date:	12/15/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Hanna, Laramie, and Shirley Basins	Number:	C5030
Basin:	Hanna, Laramie, and Shirley Basins	Number:	C503001
Storage Assessment Unit (SAU):	Frontier Sandstone Deep	Number:	C50300106

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

				x
(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>22,000</u>	maximum: <u>34,000</u>	
(2) Area of the SAU (acres):	minimum: <u>246,000</u>	most likely: <u>273,000</u>	maximum: <u>300,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>700</u>	most likely: <u>715</u>	maximum: <u>730</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.50 most likely: 0.75 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 40 most likely: 45 maximum: 60

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 2 maximum: 7

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 10

Storage Assessment Unit (SAU):

Frontier Sandstone Deep

Number:

C50300106

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>43</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.2</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>55</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill	Date:	12/15/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Hanna, Laramie, and Shirley Basins	Number:	C5030
Basin:	Hanna, Laramie, and Shirley Basins	Number:	C503001
Storage Assessment Unit (SAU):	Shannon Sandstone Member	Number:	C50300107

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>7,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>443,000</u>	most likely: <u>492,000</u>	maximum: <u>541,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>600</u>	most likely: <u>800</u>	maximum: <u>1,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	
Water in this SAU is both saline and fresh.	x
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.00</u>	most likely: <u>0.20</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>100</u>	most likely: <u>160</u>	maximum: <u>210</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.10</u>	most likely: <u>0.13</u>	maximum: <u>0.16</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>0</u>	most likely: <u>11</u>	maximum: <u>136</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.010</u>	most likely: <u>5.00</u>	maximum: <u>300</u>
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Storage Assessment Unit (SAU):

Shannon Sandstone Member

Number:

C50300107

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>33</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>62</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>12/15/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Hanna, Laramie, and Shirley Basins</u>	Number:	<u>C5030</u>
Basin:	<u>Hanna, Laramie, and Shirley Basins</u>	Number:	<u>C503001</u>
Storage Assessment Unit (SAU):	<u>Shannon Sandstone Member Deep</u>	Number:	<u>C50300108</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>22,000</u>	maximum: <u>31,000</u>
(2) Area of the SAU (acres):	minimum: <u>174,000</u>	most likely: <u>193,000</u>	maximum: <u>212,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>600</u>	most likely: <u>800</u>	maximum: <u>1,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.35 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 160 maximum: 210

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.05 maximum: 0.08

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 5 maximum: 23

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 10



Storage Assessment Unit (SAU):

Shannon Sandstone Member Deep

Number:

C50300108

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>43</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.1</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>55</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	12/15/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Hanna, Laramie, and Shirley Basins	Number:	C5030
Basin:	Hanna, Laramie, and Shirley Basins	Number:	C503001
Storage Assessment Unit (SAU):	Mesaverde Formation	Number:	C50300109

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,500</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>293,000</u>	most likely: <u>326,000</u>	maximum: <u>359,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>4,400</u>	most likely: <u>4,700</u>	maximum: <u>5,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.35 maximum: 0.90

(6) Mean thickness net porous interval (ft): minimum: 850 most likely: 1000 maximum: 1150

(7) Mean porosity net porous interval (fraction): minimum: 0.09 most likely: 0.13 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 1,100 maximum: 46,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.050 most likely: 40.00 maximum: 1,000

Storage Assessment Unit (SAU):

Mesaverde Formation

Number:

C50300109

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>35</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.1</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>61</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	12/15/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Hanna, Laramie, and Shirley Basins	Number:	C5030
Basin:	Hanna, Laramie, and Shirley Basins	Number:	C503001
Storage Assessment Unit (SAU):	Mesaverde Formation Deep	Number:	C50300110

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>19,000</u>	maximum: <u>28,000</u>
(2) Area of the SAU (acres):	minimum: <u>80,000</u>	most likely: <u>89,000</u>	maximum: <u>98,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>4,400</u>	most likely: <u>4,500</u>	maximum: <u>4,600</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 1070 most likely: 1120 maximum: 1170

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 91 maximum: 7,400

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 5.00 maximum: 100

Storage Assessment Unit (SAU):

Mesaverde Formation Deep

Number:

C50300110

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>47</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>52</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>W. Craddock</u>	Date:	<u>12/15/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Hanna, Laramie, and Shirley Basins</u>	Number:	<u>C5030</u>
Basin:	<u>Hanna, Laramie, and Shirley Basins</u>	Number:	<u>C503001</u>
Storage Assessment Unit (SAU):	<u>Dad Member</u>	Number:	<u>C50300111</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 5,500 maximum: 13,000

(2) Area of the SAU (acres): minimum: 168,000 most likely: 187,000 maximum: 206,000

(3) Mean total SAU thickness (ft): minimum: 480 most likely: 520 maximum: 560

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.00</u>	most likely:	<u>0.35</u>	maximum:	<u>0.90</u>
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(6) Mean thickness net porous interval (ft): minimum: 260 most likely: 275 maximum: 290

(7) Mean porosity net porous interval (fraction): minimum: 0.09 most likely: 0.13 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>0</u>	most likely:	<u>510</u>	maximum:	<u>11,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.050 most likely: 40.00 maximum: 1,000

Storage Assessment Unit (SAU):

Dad Member

Number:

C50300111

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>40</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.2</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>57</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	12/15/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Hanna, Laramie, and Shirley Basins	Number:	C5030
Basin:	Hanna, Laramie, and Shirley Basins	Number:	C503001
Storage Assessment Unit (SAU):	Dad Member Deep	Number:	C50300112

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

				x
(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>17,000</u>	maximum: <u>26,000</u>	
(2) Area of the SAU (acres):	minimum: <u>55,000</u>	most likely: <u>61,000</u>	maximum: <u>67,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>500</u>	most likely: <u>530</u>	maximum: <u>560</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 225 most likely: 250 maximum: 275

(7) Mean porosity net porous interval (fraction): minimum: 0.03 most likely: 0.06 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 46 maximum: 1,700

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 100



Storage Assessment Unit (SAU):

Dad Member Deep

Number:

C50300112

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>47</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.4</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>52</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>12/19/2011</u>
Assessment region:	<u>Eastern Mid-Continent</u>		
Province:	<u>Illinois Basin</u>	Number:	<u>C5064</u>
Basin:	<u>Illinois Basin</u>	Number:	<u>C506401</u>
Storage Assessment Unit (SAU):	<u>Mount Simon Sandstone</u>	Number:	<u>C50640101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 4,500 maximum: 13,000

(2) Area of the SAU (acres): minimum: 31,889,000 most likely: 35,432,000 maximum: 38,975,000

(3) Mean total SAU thickness (ft): minimum: 900 most likely: 1,200 maximum: 1,500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 540 most likely: 720 maximum: 900

(7) Mean porosity net porous interval (fraction): minimum: 0.07 most likely: 0.11 maximum: 0.14

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 250 most likely: 6,000 maximum: 120,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.005 most likely: 20.00 maximum: 1,300

Storage Assessment Unit (SAU):

Mount Simon Sandstone

Number:

C50640101

### Allocations of the SAU to States

(1)	<u>Illinois</u>	contains	<u>50</u>	% of mean SAU area
(2)	<u>Indiana</u>	contains	<u>42</u>	% of mean SAU area
(3)	<u>Kentucky</u>	contains	<u>7.3</u>	% of mean SAU area
(4)	<u>Missouri</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(5)	<u>Ohio</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>2.9</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	R. Drake, M. Merrill	Date:	12/19/2011
Assessment region:	Eastern Mid-Continent		
Province:	Illinois Basin	Number:	C5064
Basin:	Illinois Basin	Number:	C506401
Storage Assessment Unit (SAU):	Ordovician Composite	Number:	C50640102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 4,650    maximum: 7,200

(2) Area of the SAU (acres):      minimum: 11,606,000    most likely: 14,508,000    maximum: 15,959,000

(3) Mean total SAU thickness (ft):      minimum: 2,900    most likely: 4,200    maximum: 5,500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).      x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.95    most likely: 1.00    maximum: 1.00

(6) Mean thickness net porous interval (ft):      minimum: 1015    most likely: 1470    maximum: 1925

(7) Mean porosity net porous interval (fraction):      minimum: 0.06    most likely: 0.09    maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 828    most likely: 874    maximum: 67,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.100    most likely: 10.00    maximum: 400

Storage Assessment Unit (SAU):

Ordovician Composite

Number:

C50640102

### Allocations of the SAU to States

(1)	<u>Illinois</u>	contains	<u>62</u>	% of mean SAU area
(2)	<u>Indiana</u>	contains	<u>16</u>	% of mean SAU area
(3)	<u>Kentucky</u>	contains	<u>22</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>5.5</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>94</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. East	Date:	12/19/2011
Assessment region:	Eastern Mid-Continent		
Province:	Illinois Basin	Number:	C5064
Basin:	Illinois Basin	Number:	C506401
Storage Assessment Unit (SAU):	Devonian and Silurian Composite	Number:	C50640103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 4,100 maximum: 5,500

(2) Area of the SAU (acres): minimum: 7,595,000 most likely: 8,439,000 maximum: 9,283,000

(3) Mean total SAU thickness (ft): minimum: 750 most likely: 1,100 maximum: 1,500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.95 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 150 most likely: 240 maximum: 300

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.08 maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 150 most likely: 175 maximum: 1,750

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 10.00 maximum: 1,500

Storage Assessment Unit (SAU):

Devonian and Silurian Composite

Number:

C50640103

### Allocations of the SAU to States

(1)	<u>Illinois</u>	contains	<u>67</u>	% of mean SAU area
(2)	<u>Indiana</u>	contains	<u>13</u>	% of mean SAU area
(3)	<u>Kentucky</u>	contains	<u>20</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>5.5</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>95</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Central Alaska	Number:	C5002
Basin:	Kandik Basin	Number:	C500201
Storage Assessment Unit (SAU):	Nation River Formation	Number:	C50020101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/> x
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 6,000    maximum: 8,000

(2) Area of the SAU (acres):      minimum: 1,076,000    most likely: 1,195,000    maximum: 1,315,000

(3) Mean total SAU thickness (ft):      minimum: 3,000    most likely: 4,000    maximum: 5,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). ☐

Water in this SAU is both saline and fresh. ☒ x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). ☐

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00    most likely: 0.50    maximum: 1.00

(6) Mean thickness net porous interval (ft):      minimum: 1500    most likely: 2000    maximum: 2500

(7) Mean porosity net porous interval (fraction):      minimum: 0.04    most likely: 0.10    maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0    most likely: 150    maximum: 20,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.100    most likely: 1.00    maximum: 100



Storage Assessment Unit (SAU):

Nation River Formation

Number:

C50020101

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>79</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.9</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>19</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	3/17/2011
Assessment region:	Alaska		
Province:	Central Alaska	Number:	C5002
Basin:	Kandik Basin	Number:	C500201
Storage Assessment Unit (SAU):	Step Conglomerate and Tahkandit Limestone	Number:	C50020102
SAU relationship to NOGA AU:			
Notes from assessor:			

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 4,000    maximum: 6,000

(2) Area of the SAU (acres):            minimum: 1,040,000    most likely: 1,156,000    maximum: 1,272,000

(3) Mean total SAU thickness (ft):    minimum: 1,500    most likely: 2,000    maximum: 2,500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00    most likely: 0.50    maximum: 1.00

(6) Mean thickness net porous interval (ft):      minimum: 750    most likely: 1000    maximum: 1250

(7) Mean porosity net porous interval (fraction):    minimum: 0.04    most likely: 0.10    maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0    most likely: 170    maximum: 40,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.100    most likely: 1.00    maximum: 1,000

Storage Assessment Unit (SAU):

Step Conglomerate and Tahkandit Limestone

Number:

C50020102

### Allocations of the SAU to States

(1)	<u>Alaska</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>81</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>17</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>0</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	3/7/2012
Assessment region:	Western Mid-Continent		
Province:	Kansas Basins	Number:	C5056
Basin:	Kansas Basins	Number:	C505601
Storage Assessment Unit (SAU):	Lower Paleozoic Composite	Number:	C50560101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/> x
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 3,330    maximum: 4,000

(2) Area of the SAU (acres):          minimum: 2,174,000    most likely: 2,415,226    maximum: 2,657,000

(3) Mean total SAU thickness (ft):    minimum: 200    most likely: 400    maximum: 800

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). ☐

Water in this SAU is both saline and fresh. ☒ x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). ☐

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.50    most likely: 0.80    maximum: 0.90

(6) Mean thickness net porous interval (ft):    minimum: 70    most likely: 150    maximum: 250

(7) Mean porosity net porous interval (fraction):    minimum: 0.05    most likely: 0.10    maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 220    most likely: 230    maximum: 1,700

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.010    most likely: 10.00    maximum: 1,000

Storage Assessment Unit (SAU):

Lower Paleozoic Composite

Number:

C50560101

### Allocations of the SAU to States

(1)	<u>Kansas</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.1</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>99</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	3/7/2012
Assessment region:	Western Mid-Continent		
Province:	Kansas Basins	Number:	C5056
Basin:	Kansas Basins	Number:	C505601
Storage Assessment Unit (SAU):	Hunton Group	Number:	C50560102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/> x
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>3,330</u>	maximum: <u>3,700</u>
(2) Area of the SAU (acres):	minimum: <u>924,000</u>	most likely: <u>1,026,922</u>	maximum: <u>1,130,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>55</u>	most likely: <u>120</u>	maximum: <u>210</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/> x
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>1.00</u>	most likely: <u>1.00</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>20</u>	most likely: <u>50</u>	maximum: <u>90</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.06</u>	most likely: <u>0.08</u>	maximum: <u>0.10</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>35</u>	most likely: <u>40</u>	maximum: <u>140</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.010</u>	most likely: <u>10.00</u>	maximum: <u>120</u>
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Storage Assessment Unit (SAU):

Hunton Group

Number:

C50560102

### Allocations of the SAU to States

(1)	<u>Kansas</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.3</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>99</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Rouse, W. Craddock	Date:	9/7/2011
Assessment region:	California		
Province:	Los Angeles Basin	Number:	C5014
Basin:	Los Angeles Basin	Number:	C501401
Storage Assessment Unit (SAU):	Repetto and Puente Formations	Number:	C50140101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>4,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>225,000</u>	most likely: <u>250,000</u>	maximum: <u>275,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>4,000</u>	most likely: <u>6,000</u>	maximum: <u>8,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.70 most likely: 0.90 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 2000 most likely: 3000 maximum: 4000

(7) Mean porosity net porous interval (fraction): minimum: 0.12 most likely: 0.17 maximum: 0.22

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 520 most likely: 3,100 maximum: 9,400

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 200.00 maximum: 1,500



Storage Assessment Unit (SAU):

Repetto and Puente Formations

Number:

C50140101

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.2</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>99</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Rouse, W. Craddock	Date:	9/7/2011
Assessment region:	California		
Province:	Los Angeles Basin	Number:	C5014
Basin:	Los Angeles Basin	Number:	C501401
Storage Assessment Unit (SAU):	Repetto and Puente Formations Deep	Number:	C50140102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>14,000</u>	maximum: <u>15,500</u>
(2) Area of the SAU (acres):	minimum: <u>18,000</u>	most likely: <u>20,000</u>	maximum: <u>22,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>7,800</u>	most likely: <u>8,600</u>	maximum: <u>9,200</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 4800 most likely: 5300 maximum: 5700

(7) Mean porosity net porous interval (fraction): minimum: 0.07 most likely: 0.10 maximum: 0.13

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 60 maximum: 530

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 50.00 maximum: 500

Storage Assessment Unit (SAU):

Repetto and Puente Formations Deep

Number:

C50140102

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>100</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	12/19/2011
Assessment region:	Eastern Mid-Continent		
Province:	Michigan Basin	Number:	C5063
Basin:	Michigan Basin	Number:	C506301
Storage Assessment Unit (SAU):	Ordovician and Cambrian Composite	Number:	C50630101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	6,500	maximum:	11,000
(2) Area of the SAU (acres):	minimum:	27,236,000	most likely:	30,262,000	maximum:	33,288,000
(3) Mean total SAU thickness (ft):	minimum:	2,500	most likely:	3,000	maximum:	4,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 400 most likely: 600 maximum: 800

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.09 maximum: 0.11

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 1,400 most likely: 2,400 maximum: 67,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.008 most likely: 10.00 maximum: 10,000

Storage Assessment Unit (SAU):

Ordovician and Cambrian Composite

Number:

C50630101

### Allocations of the SAU to States

(1)	<u>Michigan</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>6.3</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>8.6</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>63</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>22</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	12/19/2011
Assessment region:	Eastern Mid-Continent		
Province:	Michigan Basin	Number:	C5063
Basin:	Michigan Basin	Number:	C506301
Storage Assessment Unit (SAU):	Salina Group and Middle Silurian Composite	Number:	C50630102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	5,100	maximum:	9,700
(2) Area of the SAU (acres):	minimum:	19,889,000	most likely:	22,099,000	maximum:	24,309,000
(3) Mean total SAU thickness (ft):	minimum:	800	most likely:	1,100	maximum:	1,300

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 320 most likely: 460 maximum: 520

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.11

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 2,900 most likely: 3,900 maximum: 49,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 10.00 maximum: 321

Storage Assessment Unit (SAU):

Salina Group and Middle Silurian Composite

Number:

C50630102

### Allocations of the SAU to States

(1)	<u>Michigan</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>8.5</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>10</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>67</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>14</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	12/19/2011
Assessment region:	Eastern Mid-Continent		
Province:	Michigan Basin	Number:	C5063
Basin:	Michigan Basin	Number:	C506301
Storage Assessment Unit (SAU):	Dundee Formation	Number:	C50630104

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>3,500</u>	maximum: <u>4,300</u>
(2) Area of the SAU (acres):	minimum: <u>4,112,000</u>	most likely: <u>4,569,000</u>	maximum: <u>5,025,900</u>
(3) Mean total SAU thickness (ft):	minimum: <u>250</u>	most likely: <u>275</u>	maximum: <u>300</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 80 most likely: 100 maximum: 120

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.09 maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 320 most likely: 360 maximum: 4,600

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 10.00 maximum: 4,000



Storage Assessment Unit (SAU):

Dundee Formation

Number:

C50630104

### Allocations of the SAU to States

(1)	<u>Michigan</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>9.5</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>16</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>2.9</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>69</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>2.5</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>3/7/2012</u>
Assessment region:	<u>Western Mid-Continent</u>		
Province:	<u>Palo Duro Basin</u>	Number:	<u>C5043</u>
Basin:	<u>Palo Duro Basin</u>	Number:	<u>C504301</u>
Storage Assessment Unit (SAU):	<u>Basin Center Paleozoic Composite</u>	Number:	<u>C50430101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 6,500 maximum: 8,400

(2) Area of the SAU (acres): minimum: 4,182,000 most likely: 4,647,000 maximum: 5,112,000

(3) Mean total SAU thickness (ft): minimum: 1,750 most likely: 2,300 maximum: 2,900

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 50 most likely: 125 maximum: 230

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.13 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 50 most likely: 60 maximum: 6,200

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.040 most likely: 90.00 maximum: 1,600

Storage Assessment Unit (SAU):

Basin Center Paleozoic Composite

Number:

C50430101

### Allocations of the SAU to States

(1)	<u>Texas</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>99</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>3/7/2012</u>
Assessment region:	<u>Western Mid-Continent</u>		
Province:	<u>Palo Duro Basin</u>	Number:	<u>C5043</u>
Basin:	<u>Palo Duro Basin</u>	Number:	<u>C504301</u>
Storage Assessment Unit (SAU):	<u>Basin Flank Paleozoic Composite</u>	Number:	<u>C50430102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,300 most likely: 4,800 maximum: 5,600

(2) Area of the SAU (acres): minimum: 2,752,000 most likely: 3,058,000 maximum: 3,364,000

(3) Mean total SAU thickness (ft): minimum: 2,800 most likely: 3,300 maximum: 4,100

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 150 most likely: 250 maximum: 300

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.13 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 30 maximum: 2,500

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.030 most likely: 77.00 maximum: 1,600

Storage Assessment Unit (SAU):

Basin Flank Paleozoic Composite

Number:

C50430102

### Allocations of the SAU to States

(1)	<u>New Mexico</u>	contains	<u>30</u>	% of mean SAU area
(2)	<u>Texas</u>	contains	<u>70</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill	Date:	3/7/2012
Assessment region:	Western Mid-Continent		
Province:	Palo Duro Basin	Number:	C5043
Basin:	Palo Duro Basin	Number:	C504301
Storage Assessment Unit (SAU):	Basin Center Permian	Number:	C50430103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/>
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 3,700    maximum: 5,500

(2) Area of the SAU (acres):      minimum: 3,848,000    most likely: 4,275,000    maximum: 4,703,000

(3) Mean total SAU thickness (ft):      minimum: 1,800    most likely: 2,500    maximum: 3,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/>
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>1.00</u>	most likely: <u>1.00</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):      minimum: 200    most likely: 300    maximum: 500

(7) Mean porosity net porous interval (fraction):      minimum: 0.10    most likely: 0.15    maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>0</u>	most likely: <u>20</u>	maximum: <u>11,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.030    most likely: 20.00    maximum: 262

Storage Assessment Unit (SAU):

Basin Center Permian

Number:

C50430103

### Allocations of the SAU to States

(1)	<u>Texas</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>99</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink</u>	Date:	<u>10/19/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Paradox Basin</u>	Number:	<u>C5021</u>
Basin:	<u>Paradox Basin</u>	Number:	<u>C502101</u>
Storage Assessment Unit (SAU):	<u>Paleozoic Composite</u>	Number:	<u>C50210101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 8,000 maximum: 12,500

(2) Area of the SAU (acres): minimum: 5,506,000 most likely: 6,118,000 maximum: 6,730,000

(3) Mean total SAU thickness (ft): minimum: 1,000 most likely: 2,500 maximum: 4,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.60 most likely: 0.80 maximum: 0.95

(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 300 maximum: 600

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.10 maximum: 0.14

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 1,600 most likely: 1,900 maximum: 28,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 1.00 maximum: 100



Storage Assessment Unit (SAU):

Paleozoic Composite

Number:

C50210101

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>39</u> % of mean SAU area
(2)	<u>New Mexico</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Utah</u>	contains	<u>60</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>59</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.8</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>5.9</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>29</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby, P. Warwick	Date:	3/7/2012
Assessment region:	Western Mid-Continent		
Province:	Permian Basin	Number:	C5044
Basin:	Permian Basin	Number:	C504401
Storage Assessment Unit (SAU):	Lower Paleozoic Composite	Number:	C50440101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/> x
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>8,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>10,336,000</u>	most likely: <u>11,484,000</u>	maximum: <u>12,632,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,300</u>	most likely: <u>2,300</u>	maximum: <u>3,400</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/> x
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.70</u>	most likely: <u>0.90</u>	maximum: <u>0.95</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>540</u>	most likely: <u>930</u>	maximum: <u>2000</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.05</u>	most likely: <u>0.08</u>	maximum: <u>0.14</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>21,600</u>	most likely: <u>22,000</u>	maximum: <u>1,066,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.010</u>	most likely: <u>40.00</u>	maximum: <u>5,517</u>
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Storage Assessment Unit (SAU):

Lower Paleozoic Composite

Number:

C50440101

### Allocations of the SAU to States

(1)	<u>New Mexico</u>	contains	<u>10</u>	% of mean SAU area
(2)	<u>Texas</u>	contains	<u>90</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>4.6</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.7</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>93</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby, P. Warwick	Date:	3/7/2012
Assessment region:	Western Mid-Continent		
Province:	Permian Basin	Number:	C5044
Basin:	Permian Basin	Number:	C504401
Storage Assessment Unit (SAU):	Lower Paleozoic Composite Deep	Number:	C50440102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: 13,000	most likely: 17,400	maximum: 21,800
(2) Area of the SAU (acres):	minimum: 5,392,000	most likely: 5,991,000	maximum: 6,590,000
(3) Mean total SAU thickness (ft):	minimum: 1,200	most likely: 2,100	maximum: 3,100

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 480 most likely: 830 maximum: 1200

(7) Mean porosity net porous interval (fraction): minimum: 0.03 most likely: 0.05 maximum: 0.07

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 12,100 most likely: 12,300 maximum: 160,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 20.00 maximum: 2,664

Storage Assessment Unit (SAU):

Lower Paleozoic Composite Deep

Number:

C50440102

### Allocations of the SAU to States

(1)	<u>New Mexico</u>	contains	<u>33</u> % of mean SAU area
(2)	<u>Texas</u>	contains	<u>67</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>16</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>8.5</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>76</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	E. Slucher	Date:	3/8/2012
Assessment region:	Western Mid-Continent		
Province:	Permian Basin	Number:	C5044
Basin:	Permian Basin	Number:	C504401
Storage Assessment Unit (SAU):	Permian Composite	Number:	C50440103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,000</u>	maximum: <u>7,000</u>
(2) Area of the SAU (acres):	minimum: <u>5,551,000</u>	most likely: <u>6,168,000</u>	maximum: <u>6,785,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>6,500</u>	most likely: <u>7,500</u>	maximum: <u>8,500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	x
Water in this SAU is both saline and fresh.	
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.80</u>	most likely: <u>0.90</u>	maximum: <u>0.95</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>300</u>	most likely: <u>600</u>	maximum: <u>900</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.08</u>	most likely: <u>0.14</u>	maximum: <u>0.21</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>15,500</u>	most likely: <u>16,100</u>	maximum: <u>508,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.010</u>	most likely: <u>11.00</u>	maximum: <u>1,200</u>
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Storage Assessment Unit (SAU):

Permian Composite

Number:

C50440103

### Allocations of the SAU to States

(1)	<u>New Mexico</u>	contains	<u>25</u> % of mean SAU area
(2)	<u>Texas</u>	contains	<u>75</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>9.9</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.3</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>83</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	P. Warwick, E. Slucher	Date:	7/27/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Powder River Basin	Number:	C5033
Basin:	Powder River Basin	Number:	C503301
Storage Assessment Unit (SAU):	Minnelusa and Tensleep Sandstones	Number:	C50330101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	<input checked="" type="checkbox"/>
> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>9,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>12,502,000</u>	most likely: <u>13,891,000</u>	maximum: <u>15,280,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>300</u>	most likely: <u>400</u>	maximum: <u>600</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input type="checkbox"/>
Water in this SAU is both saline and fresh.	<input checked="" type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.30</u>	most likely: <u>0.50</u>	maximum: <u>0.75</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>75</u>	most likely: <u>100</u>	maximum: <u>150</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.14</u>	most likely: <u>0.16</u>	maximum: <u>0.20</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>1,400</u>	most likely: <u>1,500</u>	maximum: <u>58,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.100</u>	most likely: <u>100.00</u>	maximum: <u>1,000</u>
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Storage Assessment Unit (SAU):

Minnelusa and Tensleep Sandstones

Number:

C50330101

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>36</u> % of mean SAU area
(2)	<u>Nebraska</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>South Dakota</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Wyoming</u>	contains	<u>62</u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>16</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.7</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>7.4</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>70</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill, J. Mars	Date:	7/27/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Powder River Basin	Number:	C5033
Basin:	Powder River Basin	Number:	C503301
Storage Assessment Unit (SAU):	Crow Mountain Sandstone	Number:	C50330102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	x
> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,336,000</u>	most likely: <u>1,484,000</u>	maximum: <u>1,632,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>70</u>	most likely: <u>90</u>	maximum: <u>110</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	
Water in this SAU is both saline and fresh.	
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.05</u>	most likely: <u>0.20</u>	maximum: <u>0.70</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>21</u>	most likely: <u>27</u>	maximum: <u>33</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.08</u>	most likely: <u>0.13</u>	maximum: <u>0.20</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>0</u>	most likely: <u>10</u>	maximum: <u>1,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.100</u>	most likely: <u>10.00</u>	maximum: <u>150</u>
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Storage Assessment Unit (SAU):

Crow Mountain Sandstone

Number:

C50330102

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>26</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>11</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>63</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill, J. Mars	Date:	7/27/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Powder River Basin	Number:	C5033
Basin:	Powder River Basin	Number:	C503301
Storage Assessment Unit (SAU):	Lower Sundance Formation	Number:	C50330103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>6,677</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>10,380,000</u>	most likely: <u>11,533,000</u>	maximum: <u>12,686,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>40</u>	most likely: <u>50</u>	maximum: <u>80</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	
Water in this SAU is both saline and fresh.	x
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.10</u>	most likely: <u>0.35</u>	maximum: <u>0.80</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>30</u>	most likely: <u>40</u>	maximum: <u>60</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.16</u>	most likely: <u>0.20</u>	maximum: <u>0.24</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>54</u>	most likely: <u>56</u>	maximum: <u>4,470</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.100</u>	most likely: <u>100.00</u>	maximum: <u>500</u>
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Storage Assessment Unit (SAU):

Lower Sundance Formation

Number:

C50330103

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>24</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>76</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>15</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.9</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>4.5</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>73</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>6/6/2012</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Powder River Basin</u>	Number:	<u>C5033</u>
Basin:	<u>Powder River Basin</u>	Number:	<u>C503301</u>
Storage Assessment Unit (SAU):	<u>Fall River and Lakota Formations</u>	Number:	<u>C50330104</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 7,650    maximum: 13,000

(2) Area of the SAU (acres):      minimum: 12,816,000    most likely: 14,240,000    maximum: 15,664,000

(3) Mean total SAU thickness (ft):      minimum: 100    most likely: 160    maximum: 225

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).     

Water in this SAU is both saline and fresh.      x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).     

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

                         minimum: 0.20    most likely: 0.30    maximum: 0.50

(6) Mean thickness net porous interval (ft):      minimum: 60    most likely: 96    maximum: 135

(7) Mean porosity net porous interval (fraction):      minimum: 0.10    most likely: 0.15    maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

                         minimum: 350    most likely: 1,100    maximum: 31,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.100    most likely: 100.00    maximum: 450

Storage Assessment Unit (SAU):

Fall River and Lakota Formations

Number:

C50330104

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>33</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>67</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>14</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.9</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>6.6</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>72</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>6/6/2012</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Powder River Basin</u>	Number:	<u>C5033</u>
Basin:	<u>Powder River Basin</u>	Number:	<u>C503301</u>
Storage Assessment Unit (SAU):	<u>Muddy Sandstone</u>	Number:	<u>C50330105</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,700 maximum: 13,000

(2) Area of the SAU (acres): minimum: 12,549,000 most likely: 13,943,000 maximum: 15,337,000

(3) Mean total SAU thickness (ft): minimum: 20 most likely: 60 maximum: 110

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.15</u>	most likely:	<u>0.25</u>	maximum:	<u>0.45</u>
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(6) Mean thickness net porous interval (ft): minimum: 10 most likely: 30 maximum: 60

(7) Mean porosity net porous interval (fraction): minimum: 0.13 most likely: 0.18 maximum: 0.23

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>1,300</u>	most likely:	<u>1,600</u>	maximum:	<u>94,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 50.00 maximum: 1,040



Storage Assessment Unit (SAU):

Muddy Sandstone

Number:

C50330105

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>31</u>	% of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>69</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>14</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>5.7</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>73</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>6/16/2012</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Powder River Basin</u>	Number:	<u>C5033</u>
Basin:	<u>Powder River Basin</u>	Number:	<u>C503301</u>
Storage Assessment Unit (SAU):	<u>Frontier Sandstone and Turner Sandy Member</u>	Number:	<u>C50330106</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 9,366,000 most likely: 10,407,000 maximum: 11,448,000

(3) Mean total SAU thickness (ft): minimum: 700 most likely: 850 maximum: 950

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.20 most likely: 0.30 maximum: 0.85

(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 120 maximum: 150

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.12 maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 300 most likely: 327 maximum: 22,500

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 8.00 maximum: 100

Storage Assessment Unit (SAU):

Frontier Sandstone and Turner Sandy Member

Number:

C50330106

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>7.3</u>	% of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>93</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>13</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.4</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>80</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>6/16/2012</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Powder River Basin</u>	Number:	<u>C5033</u>
Basin:	<u>Powder River Basin</u>	Number:	<u>C503301</u>
Storage Assessment Unit (SAU):	<u>Sussex and Shannon Sandstone Members</u>	Number:	<u>C50330107</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 4,500 maximum: 11,400

(2) Area of the SAU (acres): minimum: 10,328,000 most likely: 11,476,000 maximum: 12,624,000

(3) Mean total SAU thickness (ft): minimum: 95 most likely: 135 maximum: 175

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.15 most likely: 0.30 maximum: 0.90

(6) Mean thickness net porous interval (ft): minimum: 70 most likely: 95 maximum: 120

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.13 maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 407 most likely: 425 maximum: 18,432

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 5.00 maximum: 300

Storage Assessment Unit (SAU):

Sussex and Shannon Sandstone Members

Number:

C50330107

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>23</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>77</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>14</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.6</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>4.6</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>75</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>W. Craddock, P. Warwick</u>	Date:	<u>6/17/2012</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Powder River Basin</u>	Number:	<u>C5033</u>
Basin:	<u>Powder River Basin</u>	Number:	<u>C503301</u>
Storage Assessment Unit (SAU):	<u>Parkman Sandstone Member</u>	Number:	<u>C50330108</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 6,000 maximum: 9,500

(2) Area of the SAU (acres): minimum: 7,502,000 most likely: 8,335,000 maximum: 9,169,000

(3) Mean total SAU thickness (ft): minimum: 250 most likely: 350 maximum: 450

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.05</u>	most likely:	<u>0.40</u>	maximum:	<u>0.90</u>
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(6) Mean thickness net porous interval (ft): minimum: 125 most likely: 175 maximum: 225

(7) Mean porosity net porous interval (fraction): minimum: 0.11 most likely: 0.15 maximum: 0.19

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>98</u>	most likely:	<u>101</u>	maximum:	<u>180,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.050 most likely: 40.00 maximum: 1,000

Storage Assessment Unit (SAU):

Parkman Sandstone Member

Number:

C50330108

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>11</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>89</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>14</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>78</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock, P. Warwick	Date:	6/17/2012
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Powder River Basin	Number:	C5033
Basin:	Powder River Basin	Number:	C503301
Storage Assessment Unit (SAU):	Teapot Sandstone Member	Number:	C50330109

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	<input type="checkbox"/>
> 13,000 ft	<input checked="" type="checkbox"/>

  

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>6,500</u>	maximum: <u>9,000</u>
(2) Area of the SAU (acres):	minimum: <u>5,347,000</u>	most likely: <u>5,941,000</u>	maximum: <u>6,535,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>130</u>	most likely: <u>150</u>	maximum: <u>170</u>

  

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input type="checkbox"/>
Water in this SAU is both saline and fresh.	<input checked="" type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

  

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.05</u>	most likely: <u>0.40</u>	maximum: <u>0.95</u>
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(6) Mean thickness net porous interval (ft):	minimum: <u>65</u>	most likely: <u>90</u>	maximum: <u>115</u>
(7) Mean porosity net porous interval (fraction):	minimum: <u>0.11</u>	most likely: <u>0.15</u>	maximum: <u>0.19</u>

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>54</u>	most likely: <u>56</u>	maximum: <u>93,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.050</u>	most likely: <u>40.00</u>	maximum: <u>1,000</u>
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Storage Assessment Unit (SAU):

Teapot Sandstone Member

Number:

C50330109

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>12</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.4</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>81</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock, P. Warwick	Date:	6/17/2012
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Powder River Basin	Number:	C5033
Basin:	Powder River Basin	Number:	C503301
Storage Assessment Unit (SAU):	Teckla Sandstone Member	Number:	C50330110

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 6,000 maximum: 8,500

(2) Area of the SAU (acres): minimum: 4,190,000 most likely: 4,655,000 maximum: 5,121,000

(3) Mean total SAU thickness (ft): minimum: 125 most likely: 225 maximum: 325

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.00</u>	most likely:	<u>0.00</u>	maximum:	<u>0.70</u>
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(6) Mean thickness net porous interval (ft): minimum: 70 most likely: 110 maximum: 150

(7) Mean porosity net porous interval (fraction): minimum: 0.11 most likely: 0.15 maximum: 0.19

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>49</u>	most likely:	<u>51</u>	maximum:	<u>120,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.050 most likely: 40.00 maximum: 1,000

Storage Assessment Unit (SAU):

Teckla Sandstone Member

Number:

C50330110

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>13</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.1</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>80</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	9/6/2011
Assessment region:	California		
Province:	Sacramento Basin	Number:	C5009
Basin:	Sacramento Basin	Number:	C500901
Storage Assessment Unit (SAU):	Kione Sands of Forbes Formation	Number:	C50090101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/> x
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 4,000    maximum: 7,000

(2) Area of the SAU (acres):          minimum: 504,000    most likely: 560,000    maximum: 616,000

(3) Mean total SAU thickness (ft):    minimum: 700    most likely: 1,000    maximum: 1,300

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/> x
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>1.00</u>	most likely: <u>1.00</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):    minimum: 200    most likely: 300    maximum: 400

(7) Mean porosity net porous interval (fraction):    minimum: 0.25    most likely: 0.27    maximum: 0.30

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>0</u>	most likely: <u>20</u>	maximum: <u>2,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.500    most likely: 100.00    maximum: 400

Storage Assessment Unit (SAU):

Kione Sands of Forbes Formation

Number:

C50090101

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>98</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	9/6/2011
Assessment region:	California		
Province:	Sacramento Basin	Number:	C5009
Basin:	Sacramento Basin	Number:	C500901
Storage Assessment Unit (SAU):	Winters Formation	Number:	C50090102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: 3,000	most likely: 7,000	maximum: 13,000
(2) Area of the SAU (acres):	minimum: 981,000	most likely: 1,090,000	maximum: 1,199,000
(3) Mean total SAU thickness (ft):	minimum: 800	most likely: 1,300	maximum: 1,800

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 400 most likely: 650 maximum: 900

(7) Mean porosity net porous interval (fraction): minimum: 0.22 most likely: 0.27 maximum: 0.32

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 760 most likely: 790 maximum: 37,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.500 most likely: 200.00 maximum: 1,700

Storage Assessment Unit (SAU):

Winters Formation

Number:

C50090102

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.9</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	9/6/2011
Assessment region:	California		
Province:	Sacramento Basin	Number:	C5009
Basin:	Sacramento Basin	Number:	C500901
Storage Assessment Unit (SAU):	Starkey Sands of the Moreno Formation	Number:	C50090103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 6,000 maximum: 11,500

(2) Area of the SAU (acres): minimum: 891,000 most likely: 990,000 maximum: 1,089,000

(3) Mean total SAU thickness (ft): minimum: 1,300 most likely: 1,700 maximum: 2,100

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 650 most likely: 850 maximum: 1050

(7) Mean porosity net porous interval (fraction): minimum: 0.25 most likely: 0.30 maximum: 0.35

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 110 most likely: 140 maximum: 35,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.500 most likely: 100.00 maximum: 1,000



Storage Assessment Unit (SAU):

Starkey Sands of the Moreno Formation

Number:

C50090103

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	9/6/2011
Assessment region:	California		
Province:	Sacramento Basin	Number:	C5009
Basin:	Sacramento Basin	Number:	C500901
Storage Assessment Unit (SAU):	Mokelumne River Formation	Number:	C50090104

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 5,000 maximum: 10,500

(2) Area of the SAU (acres): minimum: 675,000 most likely: 750,000 maximum: 825,000

(3) Mean total SAU thickness (ft): minimum: 500 most likely: 800 maximum: 1,100

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.90</u>	most likely:	<u>0.95</u>	maximum:	<u>1.00</u>
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(6) Mean thickness net porous interval (ft): minimum: 300 most likely: 450 maximum: 600

(7) Mean porosity net porous interval (fraction): minimum: 0.20 most likely: 0.25 maximum: 0.30

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>480</u>	most likely:	<u>510</u>	maximum:	<u>17,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.500 most likely: 250.00 maximum: 1,500

Storage Assessment Unit (SAU):

Mokelumne River Formation

Number:

C50090104

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>94</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	9/6/2011
Assessment region:	California		
Province:	Sacramento Basin	Number:	C5009
Basin:	Sacramento Basin	Number:	C500901
Storage Assessment Unit (SAU):	Domengine Formation	Number:	C50090105

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 4,000 maximum: 8,500

(2) Area of the SAU (acres): minimum: 810,000 most likely: 900,000 maximum: 990,000

(3) Mean total SAU thickness (ft): minimum: 300 most likely: 500 maximum: 700

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 200 most likely: 300 maximum: 400

(7) Mean porosity net porous interval (fraction): minimum: 0.20 most likely: 0.25 maximum: 0.30

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 100 most likely: 120 maximum: 2,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.200 most likely: 200.00 maximum: 1,000

Storage Assessment Unit (SAU):

Domengine Formation

Number:

C50090105

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.6</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.1</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>93</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	S. Brennan, J. Covault	Date:	9/6/2011
Assessment region:	California		
Province:	San Joaquin Basin	Number:	C5010
Basin:	San Joaquin Basin	Number:	C501001
Storage Assessment Unit (SAU):	Lathrop Sand of the Panoche Formation	Number:	C50100101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>9,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,904,000</u>	most likely: <u>2,115,000</u>	maximum: <u>2,327,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,000</u>	most likely: <u>2,000</u>	maximum: <u>2,500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 500 most likely: 650 maximum: 800

(7) Mean porosity net porous interval (fraction): minimum: 0.20 most likely: 0.27 maximum: 0.32

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 31 most likely: 41 maximum: 8,600

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 1.000 most likely: 100.00 maximum: 1,700

Storage Assessment Unit (SAU):

Lathrop Sand of the Panoche Formation

Number:

C50100101

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>1.1</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan, J. Covault</u>	Date:	<u>9/6/2011</u>
Assessment region:	<u>California</u>		
Province:	<u>San Joaquin Basin</u>	Number:	<u>C5010</u>
Basin:	<u>San Joaquin Basin</u>	Number:	<u>C501001</u>
Storage Assessment Unit (SAU):	<u>Moreno Formation Sands</u>	Number:	<u>C50100102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 9,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 2,222,000 most likely: 2,469,000 maximum: 2,716,000

(3) Mean total SAU thickness (ft): minimum: 900 most likely: 1,200 maximum: 1,500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 300 most likely: 400 maximum: 500

(7) Mean porosity net porous interval (fraction): minimum: 0.20 most likely: 0.27 maximum: 0.32

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 75 most likely: 85 maximum: 7,400

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 1.000 most likely: 100.00 maximum: 1,700



Storage Assessment Unit (SAU):

Moreno Formation Sands

Number:

C50100102

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>2.0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>96</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	R. Drake	Date:	9/6/2011
Assessment region:	California		
Province:	San Joaquin Basin	Number:	C5010
Basin:	San Joaquin Basin	Number:	C501001
Storage Assessment Unit (SAU):	Domengine Formation	Number:	C50100103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	<input checked="" type="checkbox"/>
> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 5,730    maximum: 13,000

(2) Area of the SAU (acres):            minimum: 2,135,000    most likely: 2,372,000    maximum: 2,609,000

(3) Mean total SAU thickness (ft):    minimum: 60    most likely: 100    maximum: 150

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/>
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.80</u>	most likely: <u>0.90</u>	maximum: <u>1.00</u>
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(6) Mean thickness net porous interval (ft):      minimum: 10    most likely: 30    maximum: 45

(7) Mean porosity net porous interval (fraction):    minimum: 0.20    most likely: 0.26    maximum: 0.32

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>5</u>	most likely: <u>219</u>	maximum: <u>8,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.100    most likely: 10.00    maximum: 550

Storage Assessment Unit (SAU):

Domengine Formation

Number:

C50100103

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>2.4</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>96</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	R. Drake	Date:	9/6/2011
Assessment region:	California		
Province:	San Joaquin Basin	Number:	C5010
Basin:	San Joaquin Basin	Number:	C501001
Storage Assessment Unit (SAU):	Temblor Formation	Number:	C50100104
SAU relationship to NOGA AU:			
Notes from assessor:			

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/>
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>7,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>2,379,000</u>	most likely: <u>2,643,000</u>	maximum: <u>2,907,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,500</u>	most likely: <u>2,000</u>	maximum: <u>2,500</u>
(4) SAU water quality (check one):			
Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).			<input checked="" type="checkbox"/>
Water in this SAU is both saline and fresh.			<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).			<input type="checkbox"/>
(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):			
	minimum: <u>0.70</u>	most likely: <u>0.90</u>	maximum: <u>1.00</u>
(6) Mean thickness net porous interval (ft):	minimum: <u>450</u>	most likely: <u>600</u>	maximum: <u>900</u>
(7) Mean porosity net porous interval (fraction):	minimum: <u>0.20</u>	most likely: <u>0.24</u>	maximum: <u>0.29</u>

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):	minimum: <u>676</u>	most likely: <u>1,448</u>	maximum: <u>288,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):	minimum: <u>1.000</u>	most likely: <u>200.00</u>	maximum: <u>1,600</u>
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Storage Assessment Unit (SAU):

Temblor Formation

Number:

C50100104

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>4.7</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>95</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	R. Drake	Date:	9/6/2011
Assessment region:	California		
Province:	San Joaquin Basin	Number:	C5010
Basin:	San Joaquin Basin	Number:	C501001
Storage Assessment Unit (SAU):	Temblor Formation Deep	Number:	C50100105

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,500</u>	maximum: <u>18,000</u>	x
(2) Area of the SAU (acres):	minimum: <u>104,000</u>	most likely: <u>116,000</u>	maximum: <u>128,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>3,000</u>	most likely: <u>3,500</u>	maximum: <u>4,000</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 900 most likely: 1050 maximum: 1200

(7) Mean porosity net porous interval (fraction): minimum: 0.08 most likely: 0.11 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 45 maximum: 6,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.050 most likely: 10.00 maximum: 500

Storage Assessment Unit (SAU):

Temblor Formation Deep

Number:

C50100105

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>2.9</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>9/6/2011</u>
Assessment region:	<u>California</u>		
Province:	<u>San Joaquin Basin</u>	Number:	<u>C5010</u>
Basin:	<u>San Joaquin Basin</u>	Number:	<u>C501001</u>
Storage Assessment Unit (SAU):	<u>Stevens Sand of the Monterey Formation</u>	Number:	<u>C50100106</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>8,500</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>772,000</u>	most likely: <u>858,000</u>	maximum: <u>944,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,800</u>	most likely: <u>2,200</u>	maximum: <u>2,600</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 540 most likely: 660 maximum: 780

(7) Mean porosity net porous interval (fraction): minimum: 0.17 most likely: 0.23 maximum: 0.30

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 19 most likely: 429 maximum: 298,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.500 most likely: 200.00 maximum: 2,610



Storage Assessment Unit (SAU):

Stevens Sand of the Monterey Formation

Number:

C50100106

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>7.5</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>92</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>9/6/2011</u>
Assessment region:	<u>California</u>		
Province:	<u>San Joaquin Basin</u>	Number:	<u>C5010</u>
Basin:	<u>San Joaquin Basin</u>	Number:	<u>C501001</u>
Storage Assessment Unit (SAU):	<u>Stevens Sand of the Monterey Formation Deep</u>	Number:	<u>C50100107</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>14,350</u>	maximum: <u>17,000</u>
(2) Area of the SAU (acres):	minimum: <u>78,000</u>	most likely: <u>87,000</u>	maximum: <u>96,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,800</u>	most likely: <u>2,200</u>	maximum: <u>2,600</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 540 most likely: 660 maximum: 780

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.10 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 19 most likely: 33 maximum: 5,800

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 1.00 maximum: 30

Storage Assessment Unit (SAU):

Stevens Sand of the Monterey Formation Deep

Number:

C50100107

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>100</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>P. Warwick, S. Brennan</u>	Date:	<u>10/19/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>San Juan Basin</u>	Number:	<u>C5022</u>
Basin:	<u>San Juan Basin</u>	Number:	<u>C502201</u>
Storage Assessment Unit (SAU):	<u>Entrada Sandstone</u>	Number:	<u>C50220101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 6,000 maximum: 10,100

(2) Area of the SAU (acres): minimum: 3,696,000 most likely: 4,107,000 maximum: 4,518,000

(3) Mean total SAU thickness (ft): minimum: 200 most likely: 250 maximum: 325

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.05</u>	most likely:	<u>0.10</u>	maximum:	<u>0.25</u>
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(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 125 maximum: 150

(7) Mean porosity net porous interval (fraction): minimum: 0.20 most likely: 0.23 maximum: 0.26

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>10</u>	most likely:	<u>13</u>	maximum:	<u>500</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 10.000 most likely: 370.00 maximum: 1,200

Storage Assessment Unit (SAU):

Entrada Sandstone

Number:

C50220101

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>1.8</u> % of mean SAU area
(2)	<u>New Mexico</u>	contains	<u>98</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>42</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.8</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>36</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>17</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>10/20/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>San Juan Basin</u>	Number:	<u>C5022</u>
Basin:	<u>San Juan Basin</u>	Number:	<u>C502201</u>
Storage Assessment Unit (SAU):	<u>Dakota Sandstone</u>	Number:	<u>C50220102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 5,830 maximum: 9,000

(2) Area of the SAU (acres): minimum: 5,246,000 most likely: 5,829,000 maximum: 6,412,000

(3) Mean total SAU thickness (ft): minimum: 175 most likely: 225 maximum: 275

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.20</u>	most likely:	<u>0.35</u>	maximum:	<u>0.50</u>
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(6) Mean thickness net porous interval (ft): minimum: 30 most likely: 45 maximum: 60

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.10 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>24</u>	most likely:	<u>31</u>	maximum:	<u>2,400</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 0.25 maximum: 100

Storage Assessment Unit (SAU):

Dakota Sandstone

Number:

C50220102

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>15</u> % of mean SAU area
(2)	<u>New Mexico</u>	contains	<u>85</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>33</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>41</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>21</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>10/20/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>San Juan Basin</u>	Number:	<u>C5022</u>
Basin:	<u>San Juan Basin</u>	Number:	<u>C502201</u>
Storage Assessment Unit (SAU):	<u>Gallup Sandstone</u>	Number:	<u>C50220103</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 5,450 maximum: 7,900

(2) Area of the SAU (acres): minimum: 4,203,000 most likely: 4,670,000 maximum: 5,137,000

(3) Mean total SAU thickness (ft): minimum: 275 most likely: 350 maximum: 425

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.25</u>	most likely:	<u>0.40</u>	maximum:	<u>0.65</u>
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(6) Mean thickness net porous interval (ft): minimum: 15 most likely: 45 maximum: 105

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.12 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>433</u>	most likely:	<u>442</u>	maximum:	<u>21,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.400 most likely: 50.00 maximum: 400



Storage Assessment Unit (SAU):

Gallup Sandstone

Number:

C50220103

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>14</u> % of mean SAU area
(2)	<u>New Mexico</u>	contains	<u>86</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>38</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.2</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>36</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>22</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	E. Slucher	Date:	10/20/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	San Juan Basin	Number:	C5022
Basin:	San Juan Basin	Number:	C502201
Storage Assessment Unit (SAU):	Lewis Shale and Mesaverde Group	Number:	C50220104

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	<input checked="" type="checkbox"/>
> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 4,000    maximum: 5,400

(2) Area of the SAU (acres):            minimum: 1,584,000    most likely: 1,760,000    maximum: 2,112,000

(3) Mean total SAU thickness (ft):    minimum: 1,800    most likely: 2,000    maximum: 2,200

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). ☐

Water in this SAU is both saline and fresh. ☒

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). ☐

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.30    most likely: 0.50    maximum: 0.70

(6) Mean thickness net porous interval (ft):    minimum: 120    most likely: 160    maximum: 200

(7) Mean porosity net porous interval (fraction):    minimum: 0.04    most likely: 0.09    maximum: 0.14

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 42    most likely: 43    maximum: 6,900

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.000    most likely: 2.00    maximum: 1,200

Storage Assessment Unit (SAU):

Lewis Shale and Mesaverde Group

Number:

C50220104

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>23</u> % of mean SAU area
(2)	<u>New Mexico</u>	contains	<u>77</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>43</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.8</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>19</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>34</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	S. Brennan	Date:	2/2/2012
Assessment region:	Coastal Plains		
Province:	South Florida Basin	Number:	C5050
Basin:	South Florida Basin	Number:	C505001
Storage Assessment Unit (SAU):	Pre-Punta Gorda	Number:	C50500101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>8,200</u>	most likely: <u>12,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>18,638,000</u>	most likely: <u>20,709,000</u>	maximum: <u>22,780,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,500</u>	most likely: <u>3,250</u>	maximum: <u>4,500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 500 most likely: 1100 maximum: 1500

(7) Mean porosity net porous interval (fraction): minimum: 0.09 most likely: 0.12 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 1,420 maximum: 200,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 15.00 maximum: 1,000

Storage Assessment Unit (SAU):

Pre-Punta Gorda

Number:

C50500101

### Allocations of the SAU to States

(1)	<u>Florida</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>15</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>10</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>55</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>20</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	2/2/2012
Assessment region:	Coastal Plains		
Province:	South Florida Basin	Number:	C5050
Basin:	South Florida Basin	Number:	C505001
Storage Assessment Unit (SAU):	Sunniland Formation	Number:	C50500102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>9,800</u>	most likely: <u>11,400</u>	maximum: <u>11,900</u>
(2) Area of the SAU (acres):	minimum: <u>2,722,000</u>	most likely: <u>3,024,000</u>	maximum: <u>3,326,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>230</u>	most likely: <u>250</u>	maximum: <u>270</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 60 most likely: 65 maximum: 70

(7) Mean porosity net porous interval (fraction): minimum: 0.13 most likely: 0.14 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 200 most likely: 560 maximum: 13,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 80.00 maximum: 400

Storage Assessment Unit (SAU):

Sunniland Formation

Number:

C50500102

### Allocations of the SAU to States

(1)	<u>Florida</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>31</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>18</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>50</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>1</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>2/2/2012</u>
Assessment region:	<u>Coastal Plains</u>		
Province:	<u>South Florida Basin</u>	Number:	<u>C5050</u>
Basin:	<u>South Florida Basin</u>	Number:	<u>C505001</u>
Storage Assessment Unit (SAU):	<u>Gordon Pass and Marco Junction Formations</u>	Number:	<u>C50500103</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 7,000 most likely: 9,500 maximum: 10,500

(2) Area of the SAU (acres): minimum: 15,387,000 most likely: 17,097,000 maximum: 18,807,000

(3) Mean total SAU thickness (ft): minimum: 600 most likely: 750 maximum: 1,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 420 most likely: 525 maximum: 700

(7) Mean porosity net porous interval (fraction): minimum: 0.08 most likely: 0.14 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 73 maximum: 37,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.200 most likely: 2.50 maximum: 200



Storage Assessment Unit (SAU):

Gordon Pass and Marco Junction Formations

Number:

C50500103

### Allocations of the SAU to States

(1)	<u>Florida</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>18</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>11</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>52</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>19</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>2/2/2012</u>
Assessment region:	<u>Coastal Plains</u>		
Province:	<u>South Florida Basin</u>	Number:	<u>C5050</u>
Basin:	<u>South Florida Basin</u>	Number:	<u>C505001</u>
Storage Assessment Unit (SAU):	<u>Dollar Bay Formation</u>	Number:	<u>C50500104</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 7,000 most likely: 9,000 maximum: 10,000

(2) Area of the SAU (acres): minimum: 14,477,000 most likely: 16,085,000 maximum: 17,694,000

(3) Mean total SAU thickness (ft): minimum: 200 most likely: 350 maximum: 500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<u>x</u>
Water in this SAU is both saline and fresh.	
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>1.00</u>	most likely:	<u>1.00</u>	maximum:	<u>1.00</u>
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(6) Mean thickness net porous interval (ft): minimum: 80 most likely: 140 maximum: 200

(7) Mean porosity net porous interval (fraction): minimum: 0.08 most likely: 0.14 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>0</u>	most likely:	<u>73</u>	maximum:	<u>12,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.200 most likely: 2.50 maximum: 200

Storage Assessment Unit (SAU):

Dollar Bay Formation

Number:

C50500104

### Allocations of the SAU to States

(1)	<u>Florida</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>20</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>11</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>50</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>20</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	2/2/2012
Assessment region:	Coastal Plains		
Province:	South Florida Basin	Number:	C5050
Basin:	South Florida Basin	Number:	C505001
Storage Assessment Unit (SAU):	Cedar Keys and Lawson Formations	Number:	C50500105

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	4,700	maximum:	5,400
(2) Area of the SAU (acres):	minimum:	20,209,000	most likely:	22,454,000	maximum:	24,699,000
(3) Mean total SAU thickness (ft):	minimum:	500	most likely:	700	maximum:	800

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 160 most likely: 220 maximum: 240

(7) Mean porosity net porous interval (fraction): minimum: 0.21 most likely: 0.23 maximum: 0.25

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 1 maximum: 104,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 100.00 maximum: 430

Storage Assessment Unit (SAU):

Cedar Keys and Lawson Formations

Number:

C50500105

### Allocations of the SAU to States

(1)	<u>Florida</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>15</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>10</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>56</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>19</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	10/19/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Uinta and Piceance Basins	Number:	C5020
Basin:	Uinta and Piceance Basins	Number:	C502001
Storage Assessment Unit (SAU):	Paleozoic Composite	Number:	C50200101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	x
> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>7,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,358,000</u>	most likely: <u>1,697,000</u>	maximum: <u>2,036,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>2,500</u>	most likely: <u>3,000</u>	maximum: <u>4,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	
Water in this SAU is both saline and fresh.	x
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.30</u>	most likely: <u>0.50</u>	maximum: <u>0.70</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>500</u>	most likely: <u>900</u>	maximum: <u>1200</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.06</u>	most likely: <u>0.10</u>	maximum: <u>0.14</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>1,500</u>	most likely: <u>1,600</u>	maximum: <u>28,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.010</u>	most likely: <u>1.00</u>	maximum: <u>200</u>
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Storage Assessment Unit (SAU):

Paleozoic Composite

Number:

C50200101

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>73</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>27</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>68</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.4</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>25</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink</u>	Date:	<u>10/19/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Uinta and Piceance Basins</u>	Number:	<u>C5020</u>
Basin:	<u>Uinta and Piceance Basins</u>	Number:	<u>C502001</u>
Storage Assessment Unit (SAU):	<u>Paleozoic Composite Deep</u>	Number:	<u>C50200102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,000</u>	maximum: <u>20,000</u>
(2) Area of the SAU (acres):	minimum: <u>966,000</u>	most likely: <u>1,207,000</u>	maximum: <u>1,448,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>2,500</u>	most likely: <u>3,500</u>	maximum: <u>4,500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.60 most likely: 0.75 maximum: 0.90

(6) Mean thickness net porous interval (ft): minimum: 600 most likely: 900 maximum: 1100

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.06 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 10 maximum: 4,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.000 most likely: 0.10 maximum: 1



Storage Assessment Unit (SAU):

Paleozoic Composite Deep

Number:

C50200102

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>54</u>	% of mean SAU area
(2)	<u>Utah</u>	contains	<u>46</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>70</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>8.1</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>16</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>10/19/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Uinta and Piceance Basins</u>	Number:	<u>C5020</u>
Basin:	<u>Uinta and Piceance Basins</u>	Number:	<u>C502001</u>
Storage Assessment Unit (SAU):	<u>Lower Cretaceous Composite</u>	Number:	<u>C50200103</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,250 maximum: 13,000

(2) Area of the SAU (acres): minimum: 6,752,000 most likely: 7,502,000 maximum: 8,252,000

(3) Mean total SAU thickness (ft): minimum: 200 most likely: 350 maximum: 500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.22 most likely: 0.50 maximum: 0.78

(6) Mean thickness net porous interval (ft): minimum: 80 most likely: 110 maximum: 140

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.13 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 212 most likely: 249 maximum: 5,924

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 100

Storage Assessment Unit (SAU):

Lower Cretaceous Composite

Number:

C50200103

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>50</u>	% of mean SAU area
(2)	<u>Utah</u>	contains	<u>50</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>66</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.1</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>5.4</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>22</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>10/19/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Uinta and Piceance Basins</u>	Number:	<u>C5020</u>
Basin:	<u>Uinta and Piceance Basins</u>	Number:	<u>C502001</u>
Storage Assessment Unit (SAU):	<u>Lower Cretaceous Composite Deep</u>	Number:	<u>C50200104</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,000</u>	maximum: <u>28,000</u>
(2) Area of the SAU (acres):	minimum: <u>3,399,000</u>	most likely: <u>3,777,000</u>	maximum: <u>4,155,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>140</u>	most likely: <u>275</u>	maximum: <u>500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.25 most likely: 0.60 maximum: 0.75

(6) Mean thickness net porous interval (ft): minimum: 28 most likely: 55 maximum: 100

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 36 most likely: 53 maximum: 500

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 0.01 maximum: 10

Storage Assessment Unit (SAU):

Lower Cretaceous Composite Deep

Number:

C50200104

### Allocations of the SAU to States

(1)	<u>Colorado</u>	contains	<u>29</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>71</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>49</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.3</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>12</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>32</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. East	Date:	10/19/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Uinta and Piceance Basins	Number:	C5020
Basin:	Uinta and Piceance Basins	Number:	C502001
Storage Assessment Unit (SAU):	Green River Formation	Number:	C50200105

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	<input checked="" type="checkbox"/>
> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 5,500    maximum: 10,000

(2) Area of the SAU (acres):            minimum: 1,023,000    most likely: 1,137,000    maximum: 1,251,000

(3) Mean total SAU thickness (ft):    minimum: 5,000    most likely: 5,500    maximum: 6,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). ☐

Water in this SAU is both saline and fresh. ☒

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). ☐

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.20    most likely: 0.35    maximum: 0.80

(6) Mean thickness net porous interval (ft):    minimum: 1800    most likely: 1980    maximum: 2160

(7) Mean porosity net porous interval (fraction):    minimum: 0.05    most likely: 0.09    maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 32    most likely: 320    maximum: 80,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.001    most likely: 0.10    maximum: 28

Storage Assessment Unit (SAU):

Green River Formation

Number:

C50200105

### Allocations of the SAU to States

(1)	<u>Utah</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>30</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.6</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>19</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>46</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	5/25/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Norphlet Formation	Number:	C50490101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>12,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>27,618,000</u>	most likely: <u>30,687,000</u>	maximum: <u>33,756,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>150</u>	most likely: <u>300</u>	maximum: <u>1,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 0.95 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 200 maximum: 300

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.12 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 10 most likely: 1,400 maximum: 2,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 10.000 most likely: 100.00 maximum: 1,000



Storage Assessment Unit (SAU):

Norphlet Formation

Number:

C50490101

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>14</u> % of mean SAU area
(2)	<u>Arkansas</u>	contains	<u>23</u> % of mean SAU area
(3)	<u>Florida</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Louisiana</u>	contains	<u>14</u> % of mean SAU area
(5)	<u>Mississippi</u>	contains	<u>14</u> % of mean SAU area
(6)	<u>Oklahoma</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(7)	<u>Texas</u>	contains	<u>34</u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>2.5</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink</u>	Date:	<u>5/25/2011</u>
Assessment region:	<u>Coastal Plains</u>		
Province:	<u>U.S. Gulf Coast</u>	Number:	<u>C5049</u>
Basin:	<u>U.S. Gulf Coast</u>	Number:	<u>C504901</u>
Storage Assessment Unit (SAU):	<u>Norphlet Formation Deep</u>	Number:	<u>C50490102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,000</u>	maximum: <u>21,700</u>
(2) Area of the SAU (acres):	minimum: <u>39,778,000</u>	most likely: <u>44,198,000</u>	maximum: <u>48,618,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>80</u>	most likely: <u>200</u>	maximum: <u>500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 0.95 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 50 most likely: 100 maximum: 150

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.10 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 2,200 most likely: 3,400 maximum: 100,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 1.000 most likely: 10.00 maximum: 890

Storage Assessment Unit (SAU):

Norphlet Formation Deep

Number:

C50490102

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>9.0</u> % of mean SAU area
(2)	<u>Florida</u>	contains	<u>2.3</u> % of mean SAU area
(3)	<u>Louisiana</u>	contains	<u>9.4</u> % of mean SAU area
(4)	<u>Mississippi</u>	contains	<u>22</u> % of mean SAU area
(5)	<u>Texas</u>	contains	<u>58</u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>6.0</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>93</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>&lt; 1.0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	5/25/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Smackover Formation	Number:	C50490103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 9,000    maximum: 13,000

(2) Area of the SAU (acres):            minimum: 25,755,300    most likely: 28,617,000    maximum: 31,478,700

(3) Mean total SAU thickness (ft):    minimum: 100    most likely: 200    maximum: 500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).      x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90    most likely: 0.95    maximum: 1.00

(6) Mean thickness net porous interval (ft):      minimum: 50    most likely: 100    maximum: 200

(7) Mean porosity net porous interval (fraction):    minimum: 0.10    most likely: 0.15    maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 3,000    most likely: 3,600    maximum: 250,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.100    most likely: 15.00    maximum: 1,000

Storage Assessment Unit (SAU):

Smackover Formation

Number:

C50490103

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>14</u> % of mean SAU area
(2)	<u>Arkansas</u>	contains	<u>19</u> % of mean SAU area
(3)	<u>Florida</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Louisiana</u>	contains	<u>16</u> % of mean SAU area
(5)	<u>Mississippi</u>	contains	<u>18</u> % of mean SAU area
(6)	<u>Oklahoma</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(7)	<u>Texas</u>	contains	<u>33</u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>3.3</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>96</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink</u>	Date:	<u>5/25/2011</u>
Assessment region:	<u>Coastal Plains</u>		
Province:	<u>U.S. Gulf Coast</u>	Number:	<u>C5049</u>
Basin:	<u>U.S. Gulf Coast</u>	Number:	<u>C504901</u>
Storage Assessment Unit (SAU):	<u>Smackover Formation Deep</u>	Number:	<u>C50490104</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,000</u>	maximum: <u>24,000</u>
(2) Area of the SAU (acres):	minimum: <u>55,596,000</u>	most likely: <u>61,773,000</u>	maximum: <u>67,950,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>80</u>	most likely: <u>100</u>	maximum: <u>400</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 0.95 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 40 most likely: 50 maximum: 100

(7) Mean porosity net porous interval (fraction): minimum: 0.08 most likely: 0.12 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 4,800 most likely: 5,500 maximum: 150,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 10.00 maximum: 500

Storage Assessment Unit (SAU):

Smackover Formation Deep

Number:

C50490104

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>11</u> % of mean SAU area
(2)	<u>Florida</u>	contains	<u>3.2</u> % of mean SAU area
(3)	<u>Louisiana</u>	contains	<u>20</u> % of mean SAU area
(4)	<u>Mississippi</u>	contains	<u>21</u> % of mean SAU area
(5)	<u>Texas</u>	contains	<u>49</u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>6.9</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.2</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>92</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>&lt; 1.0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	5/25/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Haynesville Formation	Number:	C50490105

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	4,700	most likely:	8,850	maximum:	13,000
(2) Area of the SAU (acres):	minimum:	12,749,000	most likely:	14,166,000	maximum:	15,583,000
(3) Mean total SAU thickness (ft):	minimum:	300	most likely:	550	maximum:	750

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 190 maximum: 260

(7) Mean porosity net porous interval (fraction): minimum: 0.07 most likely: 0.09 maximum: 0.14

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 7,700 most likely: 7,900 maximum: 48,657

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.50 maximum: 500



Storage Assessment Unit (SAU):

Haynesville Formation

Number:

C50490105

### Allocations of the SAU to States

(1)	<u>Arkansas</u>	contains	<u>1.1</u> % of mean SAU area
(2)	<u>Louisiana</u>	contains	<u>38</u> % of mean SAU area
(3)	<u>Texas</u>	contains	<u>61</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>3.0</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	5/25/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Haynesville Formation Deep	Number:	C50490106

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	13,000	most likely:	15,800	maximum:	18,600	
(2) Area of the SAU (acres):	minimum:	7,894,000	most likely:	8,771,000	maximum:	9,648,000	
(3) Mean total SAU thickness (ft):	minimum:	300	most likely:	600	maximum:	800	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 90 most likely: 180 maximum: 240

(7) Mean porosity net porous interval (fraction): minimum: 0.03 most likely: 0.07 maximum: 0.11

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 1,500 most likely: 1,600 maximum: 1,702

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.005 most likely: 0.30 maximum: 200

Storage Assessment Unit (SAU):

Haynesville Formation Deep

Number:

C50490106

### Allocations of the SAU to States

(1)	<u>Louisiana</u>	contains	<u>24</u> % of mean SAU area
(2)	<u>Texas</u>	contains	<u>76</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>13</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>86</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	5/25/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Sligo and Hosston Formations and Cotton Valley Group	Number:	C50490107
SAU relationship to NOGA AU:			

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	<input checked="" type="checkbox"/>
	> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 8,000    maximum: 13,000

(2) Area of the SAU (acres):            minimum: 47,132,000    most likely: 52,369,000    maximum: 57,606,000

(3) Mean total SAU thickness (ft):    minimum: 3,150    most likely: 3,750    maximum: 4,200

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/>
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.75</u>	most likely: <u>0.90</u>	maximum: <u>0.95</u>
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(6) Mean thickness net porous interval (ft):      minimum: 2000    most likely: 2400    maximum: 2650

(7) Mean porosity net porous interval (fraction):    minimum: 0.10    most likely: 0.15    maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>57,000</u>	most likely: <u>59,000</u>	maximum: <u>7,099,074</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.100    most likely: 35.00    maximum: 3,300

Storage Assessment Unit (SAU):

Sligo and Hosston Formations and Cotton Valley  
Group

Number: C50490107

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>4.2</u> % of mean SAU area
(2)	<u>Arkansas</u>	contains	<u>3.9</u> % of mean SAU area
(3)	<u>Florida</u>	contains	<u>5.7</u> % of mean SAU area
(4)	<u>Louisiana</u>	contains	<u>19</u> % of mean SAU area
(5)	<u>Mississippi</u>	contains	<u>9.5</u> % of mean SAU area
(6)	<u>Oklahoma</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(7)	<u>Texas</u>	contains	<u>58</u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>6.1</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>91</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>1.4</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	5/25/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Sligo and Hosston Formations and Cotton Valley Group Deep	Number:	C50490108
SAU relationship to NOGA AU:			

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,750</u>	maximum: <u>20,500</u>	<u>x</u>
(2) Area of the SAU (acres):	minimum: <u>18,872,000</u>	most likely: <u>20,969,000</u>	maximum: <u>23,066,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>4,300</u>	most likely: <u>5,000</u>	maximum: <u>6,000</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.95 most likely: 0.95 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 850 most likely: 1000 maximum: 1200

(7) Mean porosity net porous interval (fraction): minimum: 0.09 most likely: 0.12 maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 1,600 most likely: 2,300 maximum: 152,371

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.050 most likely: 8.00 maximum: 200

Storage Assessment Unit (SAU):

Sligo and Hosston Formations and Cotton Valley  
Group Deep

Number: C50490108

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>6.4</u> % of mean SAU area
(2)	<u>Florida</u>	contains	<u>1.9</u> % of mean SAU area
(3)	<u>Louisiana</u>	contains	<u>22</u> % of mean SAU area
(4)	<u>Mississippi</u>	contains	<u>45</u> % of mean SAU area
(5)	<u>Texas</u>	contains	<u>25</u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>7.7</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.6</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>85</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>5.7</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	P. Warwick	Date:	5/25/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Rodessa Formation and James Limestone	Number:	C50490110

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	6,500	maximum:	13,000
(2) Area of the SAU (acres):	minimum:	31,297,000	most likely:	34,774,000	maximum:	38,251,000
(3) Mean total SAU thickness (ft):	minimum:	450	most likely:	600	maximum:	800

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

☒ x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.80 most likely: 0.80 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 30 most likely: 40 maximum: 115

(7) Mean porosity net porous interval (fraction): minimum: 0.12 most likely: 0.16 maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 7,350 most likely: 7,650 maximum: 68,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.200 most likely: 70.00 maximum: 2,000



Storage Assessment Unit (SAU):

Rodessa Formation and James Limestone

Number:

C50490110

### Allocations of the SAU to States

(1)	<u>Arkansas</u>	contains	<u>3.2</u> % of mean SAU area
(2)	<u>Louisiana</u>	contains	<u>32</u> % of mean SAU area
(3)	<u>Mississippi</u>	contains	<u>14</u> % of mean SAU area
(4)	<u>Texas</u>	contains	<u>51</u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>7.4</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>92</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	P. Warwick	Date:	5/25/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Rodessa Formation and James Limestone Deep	Number:	C50490111

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>14,000</u>	maximum: <u>15,000</u>	
(2) Area of the SAU (acres):	minimum: <u>7,763,000</u>	most likely: <u>8,626,000</u>	maximum: <u>9,489,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>500</u>	most likely: <u>700</u>	maximum: <u>900</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 30 most likely: 40 maximum: 115

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.10 maximum: 0.13

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 280 most likely: 330 maximum: 11,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.050 most likely: 10.00 maximum: 100

Storage Assessment Unit (SAU):

Rodessa Formation and James Limestone Deep

Number:

C50490111

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>Louisiana</u>	contains	<u>26</u>	% of mean SAU area
(3)	<u>Mississippi</u>	contains	<u>68</u>	% of mean SAU area
(4)	<u>Texas</u>	contains	<u>6.2</u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>10</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.7</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>81</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>7.2</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	S. Brennan	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Fredericksburg Group and Rusk Formation	Number:	C50490112

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>6,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>14,940,000</u>	most likely: <u>16,600,000</u>	maximum: <u>18,260,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,300</u>	most likely: <u>1,700</u>	maximum: <u>2,300</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 150 maximum: 250

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.14 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 2,000 most likely: 2,300 maximum: 45,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 100.00 maximum: 4,000

Storage Assessment Unit (SAU):

Fredericksburg Group and Rusk Formation

Number:

C50490112

### Allocations of the SAU to States

(1)	<u>Arkansas</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>Louisiana</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Texas</u>	contains	<u>100</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>3.9</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>96</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>5/26/2011</u>
Assessment region:	<u>Coastal Plains</u>		
Province:	<u>U.S. Gulf Coast</u>	Number:	<u>C5049</u>
Basin:	<u>U.S. Gulf Coast</u>	Number:	<u>C504901</u>
Storage Assessment Unit (SAU):	<u>Edwards, Glen Rose, and James Limestones</u>	Number:	<u>C50490113</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,500 maximum: 13,000

(2) Area of the SAU (acres): minimum: 3,150,000 most likely: 3,500,000 maximum: 3,850,000

(3) Mean total SAU thickness (ft): minimum: 2,400 most likely: 3,000 maximum: 3,900

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<u>x</u>
Water in this SAU is both saline and fresh.	
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>1.00</u>	most likely:	<u>1.00</u>	maximum:	<u>1.00</u>
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(6) Mean thickness net porous interval (ft): minimum: 50 most likely: 65 maximum: 80

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.10 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>490</u>	most likely:	<u>560</u>	maximum:	<u>3,300</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 4.00 maximum: 500

Storage Assessment Unit (SAU):

Edwards, Glen Rose, and James Limestones

Number:

C50490113

### Allocations of the SAU to States

(1)	<u>Texas</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>0</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>100</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>5/26/2011</u>
Assessment region:	<u>Coastal Plains</u>		
Province:	<u>U.S. Gulf Coast</u>	Number:	<u>C5049</u>
Basin:	<u>U.S. Gulf Coast</u>	Number:	<u>C504901</u>
Storage Assessment Unit (SAU):	<u>Washita and Fredericksburg Groups, Rusk Formation, and James Limestone</u>	Number:	<u>C50490114</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 21,690,000 most likely: 24,100,000 maximum: 26,510,000

(3) Mean total SAU thickness (ft): minimum: 400 most likely: 700 maximum: 1,100

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>1.00</u>	most likely:	<u>1.00</u>	maximum:	<u>1.00</u>
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(6) Mean thickness net porous interval (ft): minimum: 30 most likely: 60 maximum: 120

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.10 maximum: 0.15

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>2,650</u>	most likely:	<u>2,850</u>	maximum:	<u>340,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 5.00 maximum: 100



Storage Assessment Unit (SAU):

Washita and Fredericksburg Groups, Rusk Formation, Number: C50490114  
and James Limestone

### Allocations of the SAU to States

(1)	<u>Arkansas</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(2)	<u>Louisiana</u>	contains	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Texas</u>	contains	<u>100</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>2.4</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>97</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	S. Brennan	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Washita and Fredericksburg Groups, Rusk Formation, and James Limestone Deep	Number:	C50490115

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>14,500</u>	maximum: <u>17,100</u>	<u>x</u>
(2) Area of the SAU (acres):	minimum: <u>3,699,000</u>	most likely: <u>4,110,000</u>	maximum: <u>4,521,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>800</u>	most likely: <u>1,000</u>	maximum: <u>1,400</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 50 most likely: 100 maximum: 150

(7) Mean porosity net porous interval (fraction): minimum: 0.02 most likely: 0.04 maximum: 0.08

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 1,250 most likely: 1,310 maximum: 7,700

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 1.00 maximum: 10

Storage Assessment Unit (SAU):

Washita and Fredericksburg Groups, Rusk Formation, Number: C50490115  
and James Limestone Deep

**Allocations of the SAU to States**

(1)	<u>Texas</u>	contains	<u>100</u> % of mean SAU area
(2)	<u></u>	contains	<u></u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

**Allocations of the SAU to General Land-Ownership Categories**

(1)	<u>Federal lands</u>	contain	<u>8.2</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>91</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake</u>	Date:	<u>5/26/2011</u>
Assessment region:	<u>Coastal Plains</u>		
Province:	<u>U.S. Gulf Coast</u>	Number:	<u>C5049</u>
Basin:	<u>U.S. Gulf Coast</u>	Number:	<u>C504901</u>
Storage Assessment Unit (SAU):	<u>Tuscaloosa and Woodbine Formations</u>	Number:	<u>C50490116</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 5,165 maximum: 13,000

(2) Area of the SAU (acres): minimum: 74,541,000 most likely: 82,823,000 maximum: 91,105,000

(3) Mean total SAU thickness (ft): minimum: 450 most likely: 600 maximum: 800

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.80 most likely: 0.95 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 100 most likely: 150 maximum: 250

(7) Mean porosity net porous interval (fraction): minimum: 0.15 most likely: 0.25 maximum: 0.29

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 14,000 most likely: 17,560 maximum: 350,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 15,000.000 most likely: 20,000.00 maximum: 350,000

Storage Assessment Unit (SAU):

Tuscaloosa and Woodbine Formations

Number:

C50490116

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>10</u>	% of mean SAU area
(2)	<u>Arkansas</u>	contains	<u>4.4</u>	% of mean SAU area
(3)	<u>Florida</u>	contains	<u>10</u>	% of mean SAU area
(4)	<u>Georgia</u>	contains	<u>1.7</u>	% of mean SAU area
(5)	<u>Louisiana</u>	contains	<u>15</u>	% of mean SAU area
(6)	<u>Mississippi</u>	contains	<u>26</u>	% of mean SAU area
(7)	<u>Texas</u>	contains	<u>33</u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>7.1</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.7</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>88</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>3.2</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	E. Slucher	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Navarro, Taylor, and Austin Groups	Number:	C50490117

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,250</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>40,736,000</u>	most likely: <u>45,262,000</u>	maximum: <u>49,788,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,000</u>	most likely: <u>1,600</u>	maximum: <u>2,200</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 0.95 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 50 most likely: 100 maximum: 150

(7) Mean porosity net porous interval (fraction): minimum: 0.12 most likely: 0.21 maximum: 0.26

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 6,040 most likely: 6,700 maximum: 120,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 250.00 maximum: 600

Storage Assessment Unit (SAU):

Navarro, Taylor, and Austin Groups

Number:

C50490117

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>6.5</u> % of mean SAU area
(2)	<u>Arkansas</u>	contains	<u>6.9</u> % of mean SAU area
(3)	<u>Florida</u>	contains	<u>13</u> % of mean SAU area
(4)	<u>Louisiana</u>	contains	<u>8.3</u> % of mean SAU area
(5)	<u>Mississippi</u>	contains	<u>35</u> % of mean SAU area
(6)	<u>Texas</u>	contains	<u>30</u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>9.9</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>84</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>3.9</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5047
Basin:	U.S. Gulf Coast	Number:	C504701
Storage Assessment Unit (SAU):	Carrizo Sand and Wilcox Group	Number:	C50470118

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>6,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>33,026,000</u>	most likely: <u>36,695,000</u>	maximum: <u>40,365,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>3,000</u>	most likely: <u>4,000</u>	maximum: <u>5,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.80 most likely: 0.85 maximum: 0.90

(6) Mean thickness net porous interval (ft): minimum: 600 most likely: 900 maximum: 1400

(7) Mean porosity net porous interval (fraction): minimum: 0.16 most likely: 0.22 maximum: 0.28

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 42,607 most likely: 51,889 maximum: 2,550,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 70.00 maximum: 1,200



Storage Assessment Unit (SAU):

Carrizo Sand and Wilcox Group

Number:

C50470118

### Allocations of the SAU to States

(1)	<u>Alabama</u>	contains	<u>1.9</u> % of mean SAU area
(2)	<u>Florida</u>	contains	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Louisiana</u>	contains	<u>29</u> % of mean SAU area
(4)	<u>Mississippi</u>	contains	<u>19</u> % of mean SAU area
(5)	<u>Texas</u>	contains	<u>50</u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>5.2</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>90</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>3.8</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill</u>	Date:	<u>5/26/2011</u>
Assessment region:	<u>Coastal Plains</u>		
Province:	<u>U.S. Gulf Coast</u>	Number:	<u>C5049</u>
Basin:	<u>U.S. Gulf Coast</u>	Number:	<u>C504901</u>
Storage Assessment Unit (SAU):	<u>Queen City Sand</u>	Number:	<u>C50470119</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 6,000 maximum: 12,500

(2) Area of the SAU (acres): minimum: 12,390,000 most likely: 13,042,000 maximum: 14,346,000

(3) Mean total SAU thickness (ft): minimum: 600 most likely: 1,100 maximum: 1,400

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.40 most likely: 0.60 maximum: 0.80

(6) Mean thickness net porous interval (ft): minimum: 20 most likely: 50 maximum: 150

(7) Mean porosity net porous interval (fraction): minimum: 0.22 most likely: 0.26 maximum: 0.30

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 1,355 most likely: 1,933 maximum: 38,921

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 70.00 maximum: 1,200

Storage Assessment Unit (SAU):

Queen City Sand

Number:

C50470119

### Allocations of the SAU to States

(1)	<u>Texas</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>4.8</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>95</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Sparta Sand	Number:	C50470120

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	5,400	maximum:	12,000
(2) Area of the SAU (acres):	minimum:	13,500,000	most likely:	15,000,000	maximum:	16,500,000
(3) Mean total SAU thickness (ft):	minimum:	300	most likely:	500	maximum:	800

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.95 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 60 most likely: 100 maximum: 160

(7) Mean porosity net porous interval (fraction): minimum: 0.20 most likely: 0.25 maximum: 0.30

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 28 most likely: 339 maximum: 140,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 200.00 maximum: 1,400

Storage Assessment Unit (SAU):

Sparta Sand

Number:

C50470120

### Allocations of the SAU to States

(1)	<u>Louisiana</u>	contains	<u>52</u> % of mean SAU area
(2)	<u>Mississippi</u>	contains	<u>19</u> % of mean SAU area
(3)	<u>Texas</u>	contains	<u>29</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>6.6</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>1.6</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>91</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>1.3</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Yegua and Cockfield Formations	Number:	C50470121

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,200</u>	maximum: <u>11,000</u>
(2) Area of the SAU (acres):	minimum: <u>16,740,000</u>	most likely: <u>18,600,000</u>	maximum: <u>20,460,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>500</u>	most likely: <u>700</u>	maximum: <u>1,100</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.95 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 200 most likely: 400 maximum: 600

(7) Mean porosity net porous interval (fraction): minimum: 0.25 most likely: 0.30 maximum: 0.35

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 18,000 most likely: 19,100 maximum: 2,600,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 200.00 maximum: 3,000

Storage Assessment Unit (SAU):

Yegua and Cockfield Formations

Number:

C50470121

### Allocations of the SAU to States

(1)	<u>Louisiana</u>	contains	<u>23</u> % of mean SAU area
(2)	<u>Mississippi</u>	contains	<u>8.7</u> % of mean SAU area
(3)	<u>Texas</u>	contains	<u>68</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>5.3</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>94</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Frio and Vicksburg Formations	Number:	C50470122

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 21,288,000 most likely: 23,653,000 maximum: 26,018,000

(3) Mean total SAU thickness (ft): minimum: 1,600 most likely: 2,700 maximum: 3,800

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.95 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 300 most likely: 900 maximum: 1500

(7) Mean porosity net porous interval (fraction): minimum: 0.18 most likely: 0.22 maximum: 0.26

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 53,000 most likely: 67,000 maximum: 9,800,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 200.00 maximum: 3,000



Storage Assessment Unit (SAU):

Frio and Vicksburg Formations

Number:

C50470122

### Allocations of the SAU to States

(1)	<u>Louisiana</u>	contains	<u>36</u> % of mean SAU area
(2)	<u>Mississippi</u>	contains	<u>2.3</u> % of mean SAU area
(3)	<u>Texas</u>	contains	<u>62</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>2.9</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>85</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>12</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Lower Miocene I	Number:	C50470123

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>8,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>7,589,000</u>	most likely: <u>8,432,000</u>	maximum: <u>9,275,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>1,000</u>	most likely: <u>1,500</u>	maximum: <u>2,000</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 300 most likely: 600 maximum: 900

(7) Mean porosity net porous interval (fraction): minimum: 0.24 most likely: 0.28 maximum: 0.32

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 4,600 most likely: 7,800 maximum: 120,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 20.000 most likely: 500.00 maximum: 8,000

Storage Assessment Unit (SAU):

Lower Miocene I

Number:

C50470123

### Allocations of the SAU to States

(1)	<u>Louisiana</u>	contains	<u>56</u> % of mean SAU area
(2)	<u>Mississippi</u>	contains	<u>1.5</u> % of mean SAU area
(3)	<u>Texas</u>	contains	<u>43</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>4.5</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>2.4</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>53</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>40</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Lower Miocene II	Number:	C50470124

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,000	most likely:	8,000	maximum:	13,000
(2) Area of the SAU (acres):	minimum:	8,932,000	most likely:	9,924,000	maximum:	10,916,000
(3) Mean total SAU thickness (ft):	minimum:	1,300	most likely:	1,600	maximum:	1,900

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90 most likely: 0.95 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 350 most likely: 550 maximum: 750

(7) Mean porosity net porous interval (fraction): minimum: 0.24 most likely: 0.28 maximum: 0.32

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 7,900 most likely: 11,000 maximum: 170,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 20.000 most likely: 500.00 maximum: 8,000

Storage Assessment Unit (SAU):

Lower Miocene II

Number:

C50470124

### Allocations of the SAU to States

(1)	<u>Louisiana</u>	contains	<u>54</u> % of mean SAU area
(2)	<u>Mississippi</u>	contains	<u>3.2</u> % of mean SAU area
(3)	<u>Texas</u>	contains	<u>43</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>4.5</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>56</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>36</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	5/26/2011
Assessment region:	Coastal Plains		
Province:	U.S. Gulf Coast	Number:	C5049
Basin:	U.S. Gulf Coast	Number:	C504901
Storage Assessment Unit (SAU):	Middle Miocene	Number:	C50470125

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>8,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>3,257,000</u>	most likely: <u>3,619,000</u>	maximum: <u>3,981,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>2,300</u>	most likely: <u>3,200</u>	maximum: <u>4,100</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 340 most likely: 480 maximum: 620

(7) Mean porosity net porous interval (fraction): minimum: 0.24 most likely: 0.28 maximum: 0.32

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 5,700 most likely: 11,000 maximum: 66,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 20.000 most likely: 500.00 maximum: 8,000

Storage Assessment Unit (SAU):

Middle Miocene

Number:

C50470125

### Allocations of the SAU to States

(1)	<u>Louisiana</u>	contains	<u>85</u> % of mean SAU area
(2)	<u>Texas</u>	contains	<u>15</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.8</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>54</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>42</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>W. Craddock</u>	Date:	<u>5/26/2011</u>
Assessment region:	<u>Coastal Plains</u>		
Province:	<u>U.S. Gulf Coast</u>	Number:	<u>C5049</u>
Basin:	<u>U.S. Gulf Coast</u>	Number:	<u>C504901</u>
Storage Assessment Unit (SAU):	<u>Upper Miocene</u>	Number:	<u>C50470126</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 8,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 1,740,000 most likely: 1,933,000 maximum: 2,126,000

(3) Mean total SAU thickness (ft): minimum: 4,400 most likely: 5,400 maximum: 6,400

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 1100 most likely: 1500 maximum: 1900

(7) Mean porosity net porous interval (fraction): minimum: 0.24 most likely: 0.28 maximum: 0.32

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 9,800 most likely: 10,000 maximum: 110,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 20.000 most likely: 500.00 maximum: 8,000



Storage Assessment Unit (SAU):

Upper Miocene

Number:

C50470126

### Allocations of the SAU to States

(1)	<u>Louisiana</u>	contains	<u>84</u>	% of mean SAU area
(2)	<u>Texas</u>	contains	<u>16</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>2.9</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.5</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>25</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>69</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	9/7/2011
Assessment region:	California		
Province:	Ventura Basin	Number:	C5013
Basin:	Ventura Basin	Number:	C501301
Storage Assessment Unit (SAU):	Vaqueros Sandstone and Sespe Formation	Number:	C50130101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft	<input checked="" type="checkbox"/>
> 13,000 ft	<input type="checkbox"/>

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 6,500    maximum: 13,000

(2) Area of the SAU (acres):            minimum: 461,000    most likely: 576,000    maximum: 634,000

(3) Mean total SAU thickness (ft):    minimum: 1,000    most likely: 3,000    maximum: 5,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	<input checked="" type="checkbox"/>
Water in this SAU is both saline and fresh.	<input type="checkbox"/>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	<input type="checkbox"/>

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.90    most likely: 1.00    maximum: 1.00

(6) Mean thickness net porous interval (ft):      minimum: 500    most likely: 1000    maximum: 1500

(7) Mean porosity net porous interval (fraction):    minimum: 0.18    most likely: 0.22    maximum: 0.25

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 1,000    most likely: 1,700    maximum: 75,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):    minimum: 0.100    most likely: 100.00    maximum: 1,500

Storage Assessment Unit (SAU):

Vaqueros Sandstone and Sespe Formation

Number:

C50130101

### Allocations of the SAU to States

(1)	<u>California</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>3.1</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>64</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>33</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	2/10/2010
Assessment region:	Pacific Northwest		
Province:	Western Oregon and Washington Basins	Number:	C5004
Basin:	Western Oregon and Washington Basins	Number:	C500401
Storage Assessment Unit (SAU):	Eocene Composite	Number:	C50040101

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	
(1) SAU depth from surface (ft):	minimum: 3,000	most likely: 4,000	maximum: 11,000
(2) Area of the SAU (acres):	minimum: 1,917,000	most likely: 2,130,000	maximum: 2,343,000
(3) Mean total SAU thickness (ft):	minimum: 3,500	most likely: 5,000	maximum: 6,500
(4) SAU water quality (check one):			
	Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).		
	Water in this SAU is both saline and fresh.		x
	Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).		
(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):	minimum: 0.22	most likely: 0.61	maximum: 1.00
(6) Mean thickness net porous interval (ft):	minimum: 1000	most likely: 1500	maximum: 2000
(7) Mean porosity net porous interval (fraction):	minimum: 0.15	most likely: 0.20	maximum: 0.25

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	0	most likely:	47	maximum:	16,220
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum:	0.500	most likely:	200.00	maximum:	4,000
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Storage Assessment Unit (SAU):

Eocene Composite

Number:

C50040101

### Allocations of the SAU to States

(1)	<u>Oregon</u>	contains	<u>58</u> % of mean SAU area
(2)	<u>Washington</u>	contains	<u>42</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>2.2</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.1</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>83</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>11</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink</u>	Date:	<u>11/21/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Williston Basin</u>	Number:	<u>C5031</u>
Basin:	<u>Williston Basin</u>	Number:	<u>C503101</u>
Storage Assessment Unit (SAU):	<u>Deadwood and Black Island Formations</u>	Number:	<u>C50310101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 5,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 36,499,000 most likely: 40,554,000 maximum: 44,609,000

(3) Mean total SAU thickness (ft): minimum: 150 most likely: 400 maximum: 600

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.60</u>	most likely:	<u>0.70</u>	maximum:	<u>0.80</u>
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(6) Mean thickness net porous interval (ft): minimum: 90 most likely: 240 maximum: 360

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.12 maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>10</u>	most likely:	<u>140</u>	maximum:	<u>22,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 10.00 maximum: 5,000

Storage Assessment Unit (SAU):

Deadwood and Black Island Formations

Number:

C50310101

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>15</u>	% of mean SAU area
(2)	<u>North Dakota</u>	contains	<u>69</u>	% of mean SAU area
(3)	<u>South Dakota</u>	contains	<u>16</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>9.6</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.2</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>7.3</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>80</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	11/21/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Williston Basin	Number:	C5031
Basin:	Williston Basin	Number:	C503101
Storage Assessment Unit (SAU):	Deadwood and Black Island Formations Deep	Number:	C50310102

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	13,000	most likely:	13,500	maximum:	15,000	
(2) Area of the SAU (acres):	minimum:	5,337,000	most likely:	5,930,000	maximum:	6,523,000	
(3) Mean total SAU thickness (ft):	minimum:	800	most likely:	1,000	maximum:	1,100	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 440 most likely: 550 maximum: 600

(7) Mean porosity net porous interval (fraction): minimum: 0.03 most likely: 0.04 maximum: 0.06

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 100 most likely: 130 maximum: 6,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 5.00 maximum: 10



Storage Assessment Unit (SAU):

Deadwood and Black Island Formations Deep

Number:

C50310102

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>5.1</u>	% of mean SAU area
(2)	<u>North Dakota</u>	contains	<u>95</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>23</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>9.7</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>64</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	11/21/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Williston Basin	Number:	C5031
Basin:	Williston Basin	Number:	C503101
Storage Assessment Unit (SAU):	Winnipegosis Formation, Interlake Formation, and Bighorn Group	Number:	C50310103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 10,000    maximum: 13,000

(2) Area of the SAU (acres):            minimum: 10,310,000    most likely: 11,455,000    maximum: 12,601,000

(3) Mean total SAU thickness (ft):    minimum: 1,600    most likely: 1,800    maximum: 2,200

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).      x

Water in this SAU is both saline and fresh. \_\_\_\_\_

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 1.00    most likely: 1.00    maximum: 1.00

(6) Mean thickness net porous interval (ft):      minimum: 760    most likely: 900    maximum: 1100

(7) Mean porosity net porous interval (fraction):    minimum: 0.08    most likely: 0.12    maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 1,000    most likely: 1,100    maximum: 170,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.010    most likely: 10.00    maximum: 200

Storage Assessment Unit (SAU):

Winnipegosis Formation, Interlake Formation, and  
Bighorn Group

Number: C50310103

**Allocations of the SAU to States**

(1)	<u>Montana</u>	contains	<u>23</u> % of mean SAU area
(2)	<u>North Dakota</u>	contains	<u>77</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

**Allocations of the SAU to General Land-Ownership Categories**

(1)	<u>Federal lands</u>	contain	<u>12</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.3</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>9.4</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>75</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	T. Roberts-Ashby	Date:	11/21/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Williston Basin	Number:	C5031
Basin:	Williston Basin	Number:	C503101
Storage Assessment Unit (SAU):	Three Forks Formation and Jefferson Group	Number:	C50310104

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>7,700</u>	maximum: <u>12,400</u>
(2) Area of the SAU (acres):	minimum: <u>5,558,000</u>	most likely: <u>6,175,000</u>	maximum: <u>6,793,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>700</u>	most likely: <u>750</u>	maximum: <u>825</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

☒ x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.98 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 245 most likely: 260 maximum: 290

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.12 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 270 most likely: 325 maximum: 29,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.500 most likely: 30.00 maximum: 100

Storage Assessment Unit (SAU):

Three Forks Formation and Jefferson Group

Number:

C50310104

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>16</u>	% of mean SAU area
(2)	<u>North Dakota</u>	contains	<u>84</u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>9.3</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.4</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>10</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>76</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>T. Roberts-Ashby</u>	Date:	<u>11/21/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Williston Basin</u>	Number:	<u>C5031</u>
Basin:	<u>Williston Basin</u>	Number:	<u>C503101</u>
Storage Assessment Unit (SAU):	<u>Kibbey Formation and Madison Group</u>	Number:	<u>C50310105</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 6,400 maximum: 9,750

(2) Area of the SAU (acres): minimum: 29,739,000 most likely: 33,043,000 maximum: 36,347,000

(3) Mean total SAU thickness (ft): minimum: 1,500 most likely: 1,800 maximum: 2,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.60</u>	most likely:	<u>0.70</u>	maximum:	<u>0.75</u>
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(6) Mean thickness net porous interval (ft): minimum: 150 most likely: 300 maximum: 450

(7) Mean porosity net porous interval (fraction): minimum: 0.07 most likely: 0.10 maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>4,500</u>	most likely:	<u>4,600</u>	maximum:	<u>59,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 4.00 maximum: 1,800

Storage Assessment Unit (SAU):

Kibbey Formation and Madison Group

Number:

C50310105

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>44</u>	% of mean SAU area
(2)	<u>North Dakota</u>	contains	<u>53</u>	% of mean SAU area
(3)	<u>South Dakota</u>	contains	<u>2.3</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>16</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>5.0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>75</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	S. Brennan	Date:	11/21/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Williston Basin	Number:	C5031
Basin:	Williston Basin	Number:	C503101
Storage Assessment Unit (SAU):	Minnelusa Group	Number:	C50310106

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum:	3,950	most likely:	7,300	maximum:	8,400
(2) Area of the SAU (acres):	minimum:	15,763,000	most likely:	17,514,000	maximum:	19,265,000
(3) Mean total SAU thickness (ft):	minimum:	400	most likely:	475	maximum:	650

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.95 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 55 most likely: 85 maximum: 115

(7) Mean porosity net porous interval (fraction): minimum: 0.12 most likely: 0.16 maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 37 most likely: 53 maximum: 13,200

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 50.00 maximum: 300



Storage Assessment Unit (SAU):

Minnelusa Group

Number:

C50310106

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>23</u> % of mean SAU area
(2)	<u>North Dakota</u>	contains	<u>72</u> % of mean SAU area
(3)	<u>South Dakota</u>	contains	<u>4.8</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>17</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>4.1</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>75</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	11/21/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Williston Basin	Number:	C5031
Basin:	Williston Basin	Number:	C503101
Storage Assessment Unit (SAU):	Lower Swift Formation	Number:	C50310107

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>5,500</u>	maximum: <u>7,000</u>
(2) Area of the SAU (acres):	minimum: <u>37,355,000</u>	most likely: <u>46,694,000</u>	maximum: <u>51,363,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>300</u>	most likely: <u>350</u>	maximum: <u>400</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.20 most likely: 0.30 maximum: 0.50

(6) Mean thickness net porous interval (ft): minimum: 50 most likely: 70 maximum: 90

(7) Mean porosity net porous interval (fraction): minimum: 0.13 most likely: 0.17 maximum: 0.21

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 4,900 maximum: 55,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 100.00 maximum: 500

Storage Assessment Unit (SAU):

Lower Swift Formation

Number:

C50310107

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>34</u> % of mean SAU area
(2)	<u>North Dakota</u>	contains	<u>46</u> % of mean SAU area
(3)	<u>South Dakota</u>	contains	<u>20</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>16</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.6</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>7.2</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>72</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	11/21/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Williston Basin	Number:	C5031
Basin:	Williston Basin	Number:	C503101
Storage Assessment Unit (SAU):	Inyan Kara Group	Number:	C50310108

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):      minimum: 3,000    most likely: 5,000    maximum: 6,500

(2) Area of the SAU (acres):      minimum: 39,893,000    most likely: 44,326,000    maximum: 48,759,000

(3) Mean total SAU thickness (ft):      minimum: 200    most likely: 250    maximum: 300

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS). \_\_\_\_\_

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS). \_\_\_\_\_

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.10    most likely: 0.25    maximum: 0.40

(6) Mean thickness net porous interval (ft):      minimum: 110    most likely: 130    maximum: 150

(7) Mean porosity net porous interval (fraction):      minimum: 0.14    most likely: 0.18    maximum: 0.22

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0    most likely: 5,200    maximum: 96,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):      minimum: 0.010    most likely: 100.00    maximum: 2,000

Storage Assessment Unit (SAU):

Inyan Kara Group

Number:

C50310108

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>39</u> % of mean SAU area
(2)	<u>North Dakota</u>	contains	<u>45</u> % of mean SAU area
(3)	<u>South Dakota</u>	contains	<u>15</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>16</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.9</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>6.2</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>73</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	W. Craddock	Date:	11/21/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Williston Basin	Number:	C5031
Basin:	Williston Basin	Number:	C503101
Storage Assessment Unit (SAU):	Newcastle Formation	Number:	C50310109

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

☒ x

> 13,000 ft

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>4,500</u>	maximum: <u>6,000</u>
(2) Area of the SAU (acres):	minimum: <u>30,801,000</u>	most likely: <u>34,223,000</u>	maximum: <u>37,645,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>40</u>	most likely: <u>60</u>	maximum: <u>80</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

☒ x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.10 most likely: 0.25 maximum: 0.40

(6) Mean thickness net porous interval (ft): minimum: 20 most likely: 40 maximum: 60

(7) Mean porosity net porous interval (fraction): minimum: 0.13 most likely: 0.16 maximum: 0.19

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 4,700 maximum: 44,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 50.00 maximum: 100

Storage Assessment Unit (SAU):

Newcastle Formation

Number:

C50310109

### Allocations of the SAU to States

(1)	<u>Montana</u>	contains	<u>50</u>	% of mean SAU area
(2)	<u>North Dakota</u>	contains	<u>36</u>	% of mean SAU area
(3)	<u>South Dakota</u>	contains	<u>14</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>18</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.6</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>5.8</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>70</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>11/18/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wind River Basin</u>	Number:	<u>C5035</u>
Basin:	<u>Wind River Basin</u>	Number:	<u>C503501</u>
Storage Assessment Unit (SAU):	<u>Tensleep Sandstone</u>	Number:	<u>C50350101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 1,498,000 most likely: 1,664,000 maximum: 1,830,000

(3) Mean total SAU thickness (ft): minimum: 300 most likely: 350 maximum: 450

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.05</u>	most likely:	<u>0.10</u>	maximum:	<u>0.40</u>
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(6) Mean thickness net porous interval (ft): minimum: 60 most likely: 80 maximum: 100

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.14 maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>240</u>	most likely:	<u>364</u>	maximum:	<u>6,200</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 1.000 most likely: 100.00 maximum: 1,200



Storage Assessment Unit (SAU):

Tensleep Sandstone

Number:

C50350101

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>36</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.5</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>27</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>31</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>11/18/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wind River Basin</u>	Number:	<u>C5035</u>
Basin:	<u>Wind River Basin</u>	Number:	<u>C503501</u>
Storage Assessment Unit (SAU):	<u>Tensleep Sandstone Deep</u>	Number:	<u>C50350102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>20,000</u>	maximum: <u>28,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,792,000</u>	most likely: <u>1,991,000</u>	maximum: <u>2,190,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>300</u>	most likely: <u>350</u>	maximum: <u>450</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.05 most likely: 0.10 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 40 most likely: 50 maximum: 60

(7) Mean porosity net porous interval (fraction): minimum: 0.03 most likely: 0.04 maximum: 0.06

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 69 maximum: 4,200

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 10

Storage Assessment Unit (SAU):

Tensleep Sandstone Deep

Number:

C50350102

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>41</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.2</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>14</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>38</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	11/18/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Wind River Basin	Number:	C5035
Basin:	Wind River Basin	Number:	C503501
Storage Assessment Unit (SAU):	Nugget and Crow Mountain Sandstones	Number:	C50350103

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>4,300</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>815,000</u>	most likely: <u>906,000</u>	maximum: <u>997,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>300</u>	most likely: <u>450</u>	maximum: <u>600</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	
Water in this SAU is both saline and fresh.	x
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.15</u>	most likely: <u>0.30</u>	maximum: <u>0.40</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>120</u>	most likely: <u>150</u>	maximum: <u>200</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.12</u>	most likely: <u>0.15</u>	maximum: <u>0.18</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>22</u>	most likely: <u>58</u>	maximum: <u>1,800</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.100</u>	most likely: <u>100.00</u>	maximum: <u>300</u>
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Storage Assessment Unit (SAU):

Nugget and Crow Mountain Sandstones

Number:

C50350103

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>15</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>3</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>50</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>32</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Buursink	Date:	11/18/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Wind River Basin	Number:	C5035
Basin:	Wind River Basin	Number:	C503501
Storage Assessment Unit (SAU):	Nugget and Crow Mountain Sandstones Deep	Number:	C50350104

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,800</u>	maximum: <u>24,700</u>
(2) Area of the SAU (acres):	minimum: <u>392,000</u>	most likely: <u>436,000</u>	maximum: <u>480,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>300</u>	most likely: <u>450</u>	maximum: <u>600</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.50 most likely: 0.80 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 120 most likely: 150 maximum: 200

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.08 maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 9 maximum: 900

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 1.00 maximum: 10

Storage Assessment Unit (SAU):

Nugget and Crow Mountain Sandstones Deep

Number:

C50350104

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>16</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>&lt; 1.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>39</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>45</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>J. Covault</u>	Date:	<u>11/18/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wind River Basin</u>	Number:	<u>C5035</u>
Basin:	<u>Wind River Basin</u>	Number:	<u>C503501</u>
Storage Assessment Unit (SAU):	<u>Cloverly Formation</u>	Number:	<u>C50350105</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 1,391,000 most likely: 1,546,000 maximum: 1,701,000

(3) Mean total SAU thickness (ft): minimum: 120 most likely: 160 maximum: 200

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.02</u>	most likely:	<u>0.27</u>	maximum:	<u>0.94</u>
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(6) Mean thickness net porous interval (ft): minimum: 70 most likely: 100 maximum: 120

(7) Mean porosity net porous interval (fraction): minimum: 0.10 most likely: 0.15 maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>110</u>	most likely:	<u>117</u>	maximum:	<u>26,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 50.00 maximum: 1,000



Storage Assessment Unit (SAU):

Cloverly Formation

Number:

C50350105

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>38</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.9</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>30</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>27</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>J. Covault</u>	Date:	<u>11/18/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wind River Basin</u>	Number:	<u>C5035</u>
Basin:	<u>Wind River Basin</u>	Number:	<u>C503501</u>
Storage Assessment Unit (SAU):	<u>Cloverly Formation Deep</u>	Number:	<u>C50350106</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>17,000</u>	maximum: <u>24,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,434,000</u>	most likely: <u>1,593,000</u>	maximum: <u>1,752,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>120</u>	most likely: <u>160</u>	maximum: <u>200</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 1.00 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 70 most likely: 100 maximum: 120

(7) Mean porosity net porous interval (fraction): minimum: 0.06 most likely: 0.08 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 4 most likely: 7 maximum: 20,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 0.50 maximum: 10

Storage Assessment Unit (SAU):

Cloverly Formation Deep

Number:

C50350106

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>44</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.8</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>9.5</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>40</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	11/18/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Wind River Basin	Number:	C5035
Basin:	Wind River Basin	Number:	C503501
Storage Assessment Unit (SAU):	Muddy Sandstone	Number:	C50350107

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	x
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 1,373,000 most likely: 1,526,000 maximum: 1,679,000

(3) Mean total SAU thickness (ft): minimum: 40 most likely: 60 maximum: 70

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.01</u>	most likely:	<u>0.32</u>	maximum:	<u>0.88</u>
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(6) Mean thickness net porous interval (ft): minimum: 24 most likely: 36 maximum: 42

(7) Mean porosity net porous interval (fraction): minimum: 0.12 most likely: 0.15 maximum: 0.18

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>122</u>	most likely:	<u>126</u>	maximum:	<u>9,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 20.00 maximum: 300

Storage Assessment Unit (SAU):

Muddy Sandstone

Number:

C50350107

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>37</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.8</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>30</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>28</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	J. Covault	Date:	11/18/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Wind River Basin	Number:	C5035
Basin:	Wind River Basin	Number:	C503501
Storage Assessment Unit (SAU):	Muddy Sandstone Deep	Number:	C50350108

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>17,000</u>	maximum: <u>23,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,374,000</u>	most likely: <u>1,527,000</u>	maximum: <u>1,680,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>40</u>	most likely: <u>60</u>	maximum: <u>70</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

x

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.50 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 24 most likely: 36 maximum: 42

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 29 most likely: 30 maximum: 5,300

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 0.50 maximum: 10

Storage Assessment Unit (SAU):

Muddy Sandstone Deep

Number:

C50350108

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>45</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>6.9</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>9.2</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>39</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill	Date:	11/18/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Wind River Basin	Number:	C5035
Basin:	Wind River Basin	Number:	C503501
Storage Assessment Unit (SAU):	Frontier Sandstone	Number:	C50350109

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	x
	> 13,000 ft	

(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>6,500</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>1,265,000</u>	most likely: <u>1,405,000</u>	maximum: <u>1,546,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>600</u>	most likely: <u>750</u>	maximum: <u>850</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).	
Water in this SAU is both saline and fresh.	x
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).	

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: <u>0.05</u>	most likely: <u>0.10</u>	maximum: <u>0.40</u>
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(6) Mean thickness net porous interval (ft):

minimum: <u>100</u>	most likely: <u>135</u>	maximum: <u>175</u>
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(7) Mean porosity net porous interval (fraction):

minimum: <u>0.12</u>	most likely: <u>0.15</u>	maximum: <u>0.18</u>
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### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: <u>268</u>	most likely: <u>277</u>	maximum: <u>2,932</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum: <u>0.500</u>	most likely: <u>10.00</u>	maximum: <u>100</u>
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Storage Assessment Unit (SAU):

Frontier Sandstone

Number:

C50350109

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>38</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.6</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>29</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>28</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill	Date:	11/18/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Wind River Basin	Number:	C5035
Basin:	Wind River Basin	Number:	C503501
Storage Assessment Unit (SAU):	Frontier Sandstone Deep	Number:	C50350110

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

	3,000-13,000 ft	> 13,000 ft
(1) SAU depth from surface (ft):	minimum: <u>13,000</u> most likely: <u>20,500</u> maximum: <u>22,500</u>	<u>x</u>
(2) Area of the SAU (acres):	minimum: <u>1,270,000</u> most likely: <u>1,411,000</u> maximum: <u>1,552,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>550</u> most likely: <u>675</u> maximum: <u>800</u>	
(4) SAU water quality (check one):		
Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).		<u>                    </u>
Water in this SAU is both saline and fresh.		<u>                    x                    </u>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).		<u>                    </u>
(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):		
	minimum: <u>0.05</u> most likely: <u>0.10</u> maximum: <u>0.70</u>	
(6) Mean thickness net porous interval (ft):	minimum: <u>125</u> most likely: <u>160</u> maximum: <u>200</u>	
(7) Mean porosity net porous interval (fraction):	minimum: <u>0.05</u> most likely: <u>0.07</u> maximum: <u>0.09</u>	

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

	minimum: <u>50</u>	most likely: <u>52</u>	maximum: <u>201</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

	minimum: <u>0.010</u>	most likely: <u>0.10</u>	maximum: <u>10</u>
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Storage Assessment Unit (SAU):

Frontier Sandstone Deep

Number:

C50350110

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>45</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.1</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>8.4</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>39</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>11/18/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wind River Basin</u>	Number:	<u>C5035</u>
Basin:	<u>Wind River Basin</u>	Number:	<u>C503501</u>
Storage Assessment Unit (SAU):	<u>Sussex and Shannon Sandstone Members</u>	Number:	<u>C50350111</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 1,181,000 most likely: 1,312,000 maximum: 1,443,000

(3) Mean total SAU thickness (ft): minimum: 1,800 most likely: 2,700 maximum: 3,500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum:	<u>0.05</u>	most likely:	<u>0.50</u>	maximum:	<u>0.75</u>
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(6) Mean thickness net porous interval (ft): minimum: 150 most likely: 200 maximum: 250

(7) Mean porosity net porous interval (fraction): minimum: 0.13 most likely: 0.15 maximum: 0.20

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>14</u>	most likely:	<u>21</u>	maximum:	<u>9,000</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.800 most likely: 50.00 maximum: 500

Storage Assessment Unit (SAU):

Sussex and Shannon Sandstone Members

Number:

C50350111

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>33</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.7</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>24</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>38</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	S. Brennan	Date:	11/18/2010
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Wind River Basin	Number:	C5035
Basin:	Wind River Basin	Number:	C503501
Storage Assessment Unit (SAU):	Sussex and Shannon Sandstone Members Deep	Number:	C50350112

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

				x
(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>16,000</u>	maximum: <u>20,000</u>	
(2) Area of the SAU (acres):	minimum: <u>859,000</u>	most likely: <u>954,000</u>	maximum: <u>1,049,000</u>	
(3) Mean total SAU thickness (ft):	minimum: <u>1,800</u>	most likely: <u>2,700</u>	maximum: <u>3,500</u>	

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.00 most likely: 0.60 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 150 most likely: 200 maximum: 250

(7) Mean porosity net porous interval (fraction): minimum: 0.08 most likely: 0.10 maximum: 0.12

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 240 most likely: 250 maximum: 25,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.50 maximum: 2

Storage Assessment Unit (SAU):

Sussex and Shannon Sandstone Members Deep

Number:

C50350112

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>51</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>7.6</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>8.1</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>34</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>11/18/2010</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wind River Basin</u>	Number:	<u>C5035</u>
Basin:	<u>Wind River Basin</u>	Number:	<u>C503501</u>
Storage Assessment Unit (SAU):	<u>Fort Union and Lance Formations</u>	Number:	<u>C50350113</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 6,000 maximum: 11,000

(2) Area of the SAU (acres): minimum: 998,000 most likely: 1,109,000 maximum: 1,220,000

(3) Mean total SAU thickness (ft): minimum: 4,500 most likely: 5,500 maximum: 6,500

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.10 most likely: 0.35 maximum: 0.60

(6) Mean thickness net porous interval (ft): minimum: 1600 most likely: 1900 maximum: 2300

(7) Mean porosity net porous interval (fraction): minimum: 0.14 most likely: 0.17 maximum: 0.21

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 872 most likely: 885 maximum: 135,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 10.00 maximum: 500



Storage Assessment Unit (SAU):

Fort Union and Lance Formations

Number:

C50350113

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>56</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>8.1</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>4.6</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>31</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink, E. Slucher</u>	Date:	<u>2/9/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C5036</u>
Basin:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C503601</u>
Storage Assessment Unit (SAU):	<u>Paleozoic Composite</u>	Number:	<u>C50360101</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 8,300 maximum: 13,000

(2) Area of the SAU (acres): minimum: 2,961,000 most likely: 3,290,000 maximum: 3,619,000

(3) Mean total SAU thickness (ft): minimum: 3,000 most likely: 4,000 maximum: 5,000

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.25 most likely: 0.80 maximum: 0.99

(6) Mean thickness net porous interval (ft): minimum: 1000 most likely: 1400 maximum: 1700

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.08 maximum: 0.13

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 3,100 most likely: 3,200 maximum: 57,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 2.00 maximum: 300

Storage Assessment Unit (SAU):

Paleozoic Composite

Number:

C50360101

### Allocations of the SAU to States

(1)	<u>Idaho</u>	contains	<u>34</u>	% of mean SAU area
(2)	<u>Utah</u>	contains	<u>15</u>	% of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>51</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>54</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.5</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>2.8</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>38</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Buursink, E. Slucher</u>	Date:	<u>2/9/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C5036</u>
Basin:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C503601</u>
Storage Assessment Unit (SAU):	<u>Paleozoic Composite Deep</u>	Number:	<u>C50360102</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>20,000</u>	maximum: <u>29,000</u>
(2) Area of the SAU (acres):	minimum: <u>4,599,000</u>	most likely: <u>5,110,000</u>	maximum: <u>5,621,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>2,500</u>	most likely: <u>3,500</u>	maximum: <u>4,500</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.25 most likely: 0.80 maximum: 0.99

(6) Mean thickness net porous interval (ft): minimum: 900 most likely: 1200 maximum: 1600

(7) Mean porosity net porous interval (fraction): minimum: 0.02 most likely: 0.06 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 2,300 most likely: 2,400 maximum: 22,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.80 maximum: 10

Storage Assessment Unit (SAU):

Paleozoic Composite Deep

Number:

C50360102

### Allocations of the SAU to States

(1)	<u>Idaho</u>	contains	<u>18</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>21</u> % of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>62</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>56</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>&lt; 1.0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>40</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>M. Merrill, C. Doolan</u>	Date:	<u>2/9/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C5036</u>
Basin:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C503601</u>
Storage Assessment Unit (SAU):	<u>Nugget Sandstone</u>	Number:	<u>C50360103</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	
(1) SAU depth from surface (ft):	minimum: <u>3,000</u>	most likely: <u>9,000</u>	maximum: <u>13,000</u>
(2) Area of the SAU (acres):	minimum: <u>3,735,000</u>	most likely: <u>4,150,000</u>	maximum: <u>4,565,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>850</u>	most likely: <u>950</u>	maximum: <u>1,100</u>
(4) SAU water quality (check one):			
Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).			
Water in this SAU is both saline and fresh.			<u>x</u>
Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).			
(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):			
	minimum: <u>0.25</u>	most likely: <u>0.80</u>	maximum: <u>0.95</u>
(6) Mean thickness net porous interval (ft):	minimum: <u>300</u>	most likely: <u>500</u>	maximum: <u>650</u>
(7) Mean porosity net porous interval (fraction):	minimum: <u>0.09</u>	most likely: <u>0.13</u>	maximum: <u>0.16</u>

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum:	<u>3,376</u>	most likely:	<u>3,389</u>	maximum:	<u>13,070</u>
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### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):

minimum:	<u>0.050</u>	most likely:	<u>20.00</u>	maximum:	<u>600</u>
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Storage Assessment Unit (SAU):

Nugget Sandstone

Number:

C50360103

### Allocations of the SAU to States

(1)	<u>Idaho</u>	contains	<u>42</u>	% of mean SAU area
(2)	<u>Utah</u>	contains	<u>16</u>	% of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>42</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>50</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>8.0</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>1.9</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>40</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	M. Merrill, C. Doolan	Date:	2/9/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Wyoming-Idaho-Utah Thrust Belt	Number:	C5036
Basin:	Wyoming-Idaho-Utah Thrust Belt	Number:	C503601
Storage Assessment Unit (SAU):	Nugget Sandstone Deep	Number:	C50360104

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>18,000</u>	maximum: <u>26,000</u>
(2) Area of the SAU (acres):	minimum: <u>3,605,000</u>	most likely: <u>4,006,000</u>	maximum: <u>4,407,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>850</u>	most likely: <u>950</u>	maximum: <u>1,100</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.25 most likely: 0.80 maximum: 0.95

(6) Mean thickness net porous interval (ft): minimum: 300 most likely: 500 maximum: 650

(7) Mean porosity net porous interval (fraction): minimum: 0.04 most likely: 0.08 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 83 most likely: 102 maximum: 1,523

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.050 most likely: 10.00 maximum: 65



Storage Assessment Unit (SAU):

Nugget Sandstone Deep

Number:

C50360104

### Allocations of the SAU to States

(1)	<u>Idaho</u>	contains	<u>2.8</u> % of mean SAU area
(2)	<u>Utah</u>	contains	<u>32</u> % of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>65</u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>48</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>47</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>R. Drake, M. Merrill</u>	Date:	<u>2/9/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C5036</u>
Basin:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C503601</u>
Storage Assessment Unit (SAU):	<u>Bear River Formation</u>	Number:	<u>C50360105</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 6,700 maximum: 13,000

(2) Area of the SAU (acres): minimum: 1,661,000 most likely: 1,846,000 maximum: 2,031,000

(3) Mean total SAU thickness (ft): minimum: 750 most likely: 1,000 maximum: 1,200

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.05 most likely: 0.80 maximum: 1.00

(6) Mean thickness net porous interval (ft): minimum: 170 most likely: 220 maximum: 260

(7) Mean porosity net porous interval (fraction): minimum: 0.07 most likely: 0.11 maximum: 0.16

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 1,000 maximum: 5,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.20 maximum: 50

Storage Assessment Unit (SAU):

Bear River Formation

Number:

C50360105

### Allocations of the SAU to States

(1)	<u>Idaho</u>	contains	<u>5.1</u>	% of mean SAU area
(2)	<u>Utah</u>	contains	<u>23</u>	% of mean SAU area
(3)	<u>Wyoming</u>	contains	<u>72</u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>56</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.5</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>40</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

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Assessment geologist:	<u>R. Drake, M. Merrill</u>	Date:	<u>2/9/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C5036</u>
Basin:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C503601</u>
Storage Assessment Unit (SAU):	<u>Bear River Formation Deep</u>	Number:	<u>C50360106</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>14,810</u>	maximum: <u>18,430</u>
(2) Area of the SAU (acres):	minimum: <u>1,467,000</u>	most likely: <u>1,630,000</u>	maximum: <u>1,793,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>700</u>	most likely: <u>1,000</u>	maximum: <u>1,200</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.10 most likely: 0.80 maximum: 0.95

(6) Mean thickness net porous interval (ft): minimum: 150 most likely: 220 maximum: 260

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.08 maximum: 0.10

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 50 maximum: 2,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.001 most likely: 0.10 maximum: 30

Storage Assessment Unit (SAU):

Bear River Formation Deep

Number:

C50360106

### Allocations of the SAU to States

(1)	<u>Utah</u>	contains	<u>22</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>78</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>49</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>4.2</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>47</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	<u>S. Brennan</u>	Date:	<u>2/10/2011</u>
Assessment region:	<u>Rocky Mountains and Northern Great Plains</u>		
Province:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C5036</u>
Basin:	<u>Wyoming-Idaho-Utah Thrust Belt</u>	Number:	<u>C503601</u>
Storage Assessment Unit (SAU):	<u>Frontier Sandstone</u>	Number:	<u>C50360107</u>

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

		3,000-13,000 ft	<u>x</u>
		> 13,000 ft	

(1) SAU depth from surface (ft): minimum: 3,000 most likely: 7,000 maximum: 13,000

(2) Area of the SAU (acres): minimum: 680,000 most likely: 755,000 maximum: 831,000

(3) Mean total SAU thickness (ft): minimum: 600 most likely: 1,200 maximum: 1,400

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh. x

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.05 most likely: 0.10 maximum: 0.80

(6) Mean thickness net porous interval (ft): minimum: 250 most likely: 300 maximum: 400

(7) Mean porosity net porous interval (fraction): minimum: 0.12 most likely: 0.15 maximum: 0.17

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 70 most likely: 75 maximum: 30,000

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.100 most likely: 1.00 maximum: 100

Storage Assessment Unit (SAU):

Frontier Sandstone

Number:

C50360107

### Allocations of the SAU to States

(1)	<u>Wyoming</u>	contains	<u>100</u>	% of mean SAU area
(2)	<u></u>	contains	<u></u>	% of mean SAU area
(3)	<u></u>	contains	<u></u>	% of mean SAU area
(4)	<u></u>	contains	<u></u>	% of mean SAU area
(5)	<u></u>	contains	<u></u>	% of mean SAU area
(6)	<u></u>	contains	<u></u>	% of mean SAU area
(7)	<u></u>	contains	<u></u>	% of mean SAU area
(8)	<u></u>	contains	<u></u>	% of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>71</u>	% of mean SAU area
(2)	<u>State lands</u>	contain	<u>3.8</u>	% of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u>	% of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>26</u>	% of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u>	% of mean SAU area

## STORAGE ASSESSMENT UNIT INPUT DATA FORM

### Identification Information

Assessment geologist:	S. Brennan	Date:	2/10/2011
Assessment region:	Rocky Mountains and Northern Great Plains		
Province:	Wyoming-Idaho-Utah Thrust Belt	Number:	C5036
Basin:	Wyoming-Idaho-Utah Thrust Belt	Number:	C503601
Storage Assessment Unit (SAU):	Frontier Sandstone Deep	Number:	C50360108

SAU relationship to NOGA AU:

Notes from assessor:

### Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

3,000-13,000 ft

> 13,000 ft

x

(1) SAU depth from surface (ft):	minimum: <u>13,000</u>	most likely: <u>15,000</u>	maximum: <u>17,000</u>
(2) Area of the SAU (acres):	minimum: <u>761,000</u>	most likely: <u>846,000</u>	maximum: <u>931,000</u>
(3) Mean total SAU thickness (ft):	minimum: <u>800</u>	most likely: <u>1,200</u>	maximum: <u>1,600</u>

(4) SAU water quality (check one):

Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).

Water in this SAU is both saline and fresh.

Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

x

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):

minimum: 0.10 most likely: 0.40 maximum: 0.90

(6) Mean thickness net porous interval (ft): minimum: 300 most likely: 350 maximum: 400

(7) Mean porosity net porous interval (fraction): minimum: 0.05 most likely: 0.07 maximum: 0.09

### Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):

minimum: 0 most likely: 1 maximum: 5

### Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD): minimum: 0.010 most likely: 0.10 maximum: 10



Storage Assessment Unit (SAU):

Frontier Sandstone Deep

Number:

C50360108

### Allocations of the SAU to States

(1)	<u>Utah</u>	contains	<u>11</u> % of mean SAU area
(2)	<u>Wyoming</u>	contains	<u>89</u> % of mean SAU area
(3)	<u></u>	contains	<u></u> % of mean SAU area
(4)	<u></u>	contains	<u></u> % of mean SAU area
(5)	<u></u>	contains	<u></u> % of mean SAU area
(6)	<u></u>	contains	<u></u> % of mean SAU area
(7)	<u></u>	contains	<u></u> % of mean SAU area
(8)	<u></u>	contains	<u></u> % of mean SAU area

### Allocations of the SAU to General Land-Ownership Categories

(1)	<u>Federal lands</u>	contain	<u>41</u> % of mean SAU area
(2)	<u>State lands</u>	contain	<u>5.0</u> % of mean SAU area
(3)	<u>Tribal lands</u>	contain	<u>0</u> % of mean SAU area
(4)	<u>Private and other lands</u>	contain	<u>54</u> % of mean SAU area
(5)	<u>Offshore areas</u>	contain	<u>0</u> % of mean SAU area