

## Intro to the Bakken Formation

name: \_\_\_\_\_

Use the Internet to find the meaning of each of the following terms as they would be used by a petroleum geologist. Write definitions in the spaces below IN YOUR OWN WORDS. Do not put "coal, oil, gas" for #1.

1. fossil fuel: \_\_\_\_\_

\_\_\_\_\_

2. basin: \_\_\_\_\_

\_\_\_\_\_

3. permeability: \_\_\_\_\_

\_\_\_\_\_

4. anoxic water: \_\_\_\_\_

\_\_\_\_\_

5. source rock: \_\_\_\_\_

\_\_\_\_\_

6. reservoir rock: \_\_\_\_\_

\_\_\_\_\_

Go to [www.formontana.net/bakken.html](http://www.formontana.net/bakken.html). Look at the image, read the entire page, and then answer the questions below. Use sentences to answer those questions marked with an asterisk.

7. \*Why are there so many lights in the Williston area? \_\_\_\_\_

\_\_\_\_\_

8. \*Natural gas is a fuel burned to heat homes and water. Click on the word **photo** in the first paragraph. Explain why the gas is burned off as waste?

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\_\_\_\_\_

9. Go back to [www.formontana.net/bakken.html](http://www.formontana.net/bakken.html) and select **Geology.com**. According to the graph, what was the oil production rate of the North Dakota Bakken in the following months? Do not include "Other North Dakota". Use correct units.

Sept. 2007: \_\_\_\_\_

May 2012: \_\_\_\_\_

10. \*Go back to [www.formontana.net/bakken.html](http://www.formontana.net/bakken.html). Explain the relationship between the Williston Basin and the Bakken formation.

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11. \*Select the **graphic** link. What is the purpose of this graphic (what, when, where)? Also, tell what the symbols mean.

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12. \*Select the **map** link to see North America during the Late Devonian Period (360 million years ago). Why is the area where the Bakken is darker blue than the surrounding area? (Hint: depth)

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13. \*Go back to [www.formontana.net/bakken.html](http://www.formontana.net/bakken.html). Explain why deep water must be anoxic in order for dead plankton to become oil.

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14. \*What causes dead plankton to be transformed into oil?

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15. \*What is it about the Bakken Formation that has made it so difficult (until recently) to get oil out of it?

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16. \*Select the **Interactive** link, and then **View Interactive**. View all of the pages and read the captions. What is the purpose of the “hydraulic fracturing” in this situation in Pennsylvania?

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17. \*Go back to **[www.formontana.net/bakken.html](http://www.formontana.net/bakken.html)**. Explain what hydraulic fracturing (fracking) is and tell why it allows oil to be removed from the Bakken Shale.

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\*Watch the 4.5-minute video near the bottom of the page. List three concerns associated with fracking.

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