

# Oil Spill: Tragedy in the Gulf

Name \_\_\_\_\_

As of May 28th, it is believed that the early estimate of 210,000 gallons of oil (around 5000 barrels) per day of oil leaking into the Gulf of Mexico was much too low. The flow rate was revised on May 27<sup>th</sup> to be between 12,000 to 19,000 barrels of oil per day. So, assuming the low end of this approximation of 12,000 barrels (around 500,000 gallons) per day, in the month since the Deepwater Horizon exploded on April 20<sup>th</sup>, 440,000 barrels of oil have spilled into the Gulf. 440,00 barrels is equivalent to 19 million gallons of oil. The Exxon Valdez spill in 1989 totaled 11 million gallons of oil spilled

The oil began gushing out of the sea floor after the rig Deepwater Horizon exploded on April 20<sup>th</sup>. The rig sank two days later and eleven lives were lost. The situation is tragic on many levels and will have a profound effect on the way of life for people in the Gulf Coast.

The biggest oil spill in history occurred in the Middle East in 1991. An estimated 380 million to 520 million gallons of oil was spilled into the Persian Gulf. The Exxon Valdez disaster in 1989 was previously the biggest in the United States, with eleven million gallons (around 260,000 barrels) spilling into Alaska's Prince William Sound. There is much more to this story than the math involved in this activity, but today we investigate the oil loss in this situation.

1. Some people have a difficult time understanding how much a gallon is. There are 16 cups in one gallon. Using the 210,000 gallon loss estimate, about how many cups of oil is being lost a day?

2. Maybe the cups are not giving you a clear idea. We could change it to two-liter bottles of soda. One gallon is about 3.8 liters, so a rough estimate might be two, two-liter bottles of soda is close to 1 gallon. How many two-liter bottles of oil are being lost each day?

3. Lets use the updated figure of 500,000 gallons of oil per day loss rate. Complete the table comparing total oil lost based on number of days spilling. You can use a proportion to help you compute any day number or spill total. For 37 days you can use:

$$\frac{1 \text{ day}}{500,000 \text{ gallons}} = \frac{37 \text{ days}}{n \text{ gallons}}$$

Total Days	1	2	3	4	7	30	60
Gallons of Oil Lost	500,000	1,000,000					

4. Use a proportion to find the number of days it took to reach the 11 million gallons lost in the Exxon Valdez disaster.

5. Use a proportion to find the number of days it would take to reach the 500 million gallons lost in Kuwait in 1991.

6. Each barrel of oil contains 42 gallons which yields about 20 gallons of gasoline. The rest of the oil in the barrel can be used for other fuel products. What percent of the barrel is used to create gasoline?

7. We can use the proportion below to find out about how many gallons of potential gasoline are being lost per day. How many gallons of gas are being lost each day?

$$\frac{20 \text{ gallons of gasoline}}{42 \text{ gallons of oil}} = \frac{n \text{ gallons of gasoline}}{500,000 \text{ gallons of oil}}$$

8. If gas is about \$2.75 per gallon, how many dollars in gasoline is being lost per day as a result of the spill?

9. Gus uses about 600 gallons of gas a year to get around in his car. For how many years could he drive his car on all the gasoline that is being lost in one day as a result of this spill?

10. The cost of a barrel of crude oil is now around \$74, the gasoline in it sells for nearly \$55. What percent of the barrels value does the retail price of gas account for?

11. Current estimates have the spill losing 12,000 barrels a day. Considering a barrel of oil is about \$74, about how many dollars in oil are being lost each day as a result of this spill?

12. The U.S. uses about 7.14 billion barrels of oil in a year. If this leak continued at this rate (12,000 barrels a day) for one year, how many barrels would be lost? What percent of our total annual oil usage does this represent?