

## ENERGY MANAGEMENT ENHANCEMENT

July 2005

### LOWER BIG BLUE AND LOWER LITTLE BLUE WATERSHEDS IN NEBRASKA

Name: \_\_\_\_\_

For 2005, the Conservation Security Program (CSP) offers a limited number of enhancement payments as incentives to reward or encourage on-farm energy conservation and management. These enhancements are available once the applicant qualifies for CSP by meeting the program's entry requirements for soil and water quality.

This information will help landowners and managers determine if they are eligible for the offered payment(s) for energy enhancement activities.

#### Renewable Fuel

Payment = \$25.00 per 100 gallon increments of **the bio-based portion of renewable fuels.**

#### Renewable Energy Fuel Uses

Renewable fuel is defined as "fuel grade ethanol and biodiesel." USDA supports the conversion and use of biomass (plant-derived material) as an important energy resource for



on-farm use to reduce dependence on petroleum-based fuels. At this time, biomass and its fuel derivatives represent the only renewable alternative for liquid transportation fuel. Using renewable energy fuels can eliminate the use of toxic fuel additives, such as MTBE (Methyl Tertiary Butyl Ether); reduce air and water pollution; and reduce greenhouse gas emissions.

Under CSP, payments will be made to qualifying producers for the *bio-based portion* of eligible blended fuels in 500-gallon increments. A companion Job Sheet, "Renewable Fuel Records," is also available from NRCS field offices to assist with record keeping and converting fuel blends into components that may be eligible for payment as CSP enhancements.

- Ethanol – Ethanol is also known as ethyl alcohol or grain alcohol. Ethanol is used as an alternative fuel and as an octane-boosting additive to gasoline. The U.S. ethanol industry produced more than 2.81 billion gallons in 2003, up 32 percent from 2002's annual production of 2.13 billion gallons<sup>1</sup>. Although this number is small compared to fossil fuel use for transportation, ethanol consumption continues to increase dramatically.
- Bio-ethanol technology turns low-value plant material, such as corn stalks, sawdust, or waste paper into fuel ethanol.

## Renewable Fuel Records

- Bio-diesel – Bio-diesel is a clean burning alternative fuel produced from oils and fats derived from a variety of renewable resources, including oils derived from canola seeds, corn seeds, sunflower seeds, flax seeds, and most commonly, soybeans. Raw bio-diesel contains no petroleum, but it is usually blended with petroleum diesel to create a bio-diesel blend. Bio-diesel fuel is made from oils or fats; both hydrocarbons. The hydrocarbons are filtered, then mixed with an alcohol (typically methanol) and a catalyst (sodium or potassium hydroxide). The major products from this reaction are bio-diesel fuel, which is an ester, and glycerol, which has commercial uses, such as in cosmetics, soap, and other products.

Bio-diesel is simple to use, biodegradable, nontoxic, and essentially free of sulfur and aromatics. It can be used in compression-ignition (diesel) engines with little or no modification. Farm machinery is largely diesel powered.

Documentation Required: Receipts for purchases of renewable fuels used for farming operation (non-road use), such as ethanol and bio-diesel, and must be maintained and provided as documentation for payment. Under the Conservation Security Program (CSP), payments will be made to qualifying producers for the **bio-based portion** of eligible blended fuels in 100-gallon increments. Attached Tables are to be used to assist with record keeping and converting fuel blends into components that may be eligible for payment as CSP enhancements. An example is provided to assist you (refer to attached).

### Certification

I certify that I have purchased and utilized \_\_\_\_\_ gallons of the *bio-based portion* of eligible blended fuels for my agriculture operation.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

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<sup>1</sup> Renewable Fuels Association Ethanol Industry Outlook, 2004



## Conversion Charts (Renewable Fuel Portion of Blended Fuels)

E85 (Ethanol 85) <sup>1</sup>	
Gallons of Blended Fuel	Equivalent Gallons of BioFuel
100	85
200	170
300	255
400	340
500	425
589	500
1,000	850
1,100	935
1,176	1,000
1,200	1,020
1,300	1,105
1,400	1,190
1,500	1,275
10,000	8,500
20,000	17,000
30,000	25,500
40,000	34,000
50,000	42,500
58,824	50,000
60,000	51,000
70,000	59,500
80,000	68,000
90,000	76,500
100,000	85,000

E10 (Ethanol 10) <sup>2</sup>	
Gallons of Blended Fuel	Equivalent Gallons of BioFuel
100	10
500	50
1,000	100
1,500	150
3,000	300
5,000	500
10,000	1,000
15,000	1,500
20,000	2,000
25,000	2,500
30,000	3,000
40,000	4,000
50,000	5,000
60,000	6,000
75,000	7,500
100,000	10,000

B20 (Biodiesel) <sup>3</sup>	
Gallons of Blended Fuel	Equivalent Gallons of BioFuel
100	20
500	100
1,000	200
2,500	500
3,000	600
5,000	1,000
10,000	2,000
15,000	3,000
20,000	4,000
25,000	5,000
30,000	6,000
40,000	8,000
50,000	10,000
60,000	12,000
75,000	15,000
100,000	20,000

B10 (Biodiesel) <sup>4</sup>	
Gallons of Blended Fuel	Equivalent Gallons of BioFuel
100	10
500	50
1,000	100
1,500	150
3,000	300
5,000	500
10,000	1,000
15,000	1,500
20,000	2,000
25,000	2,500
30,000	3,000
40,000	4,000
50,000	5,000
60,000	6,000
75,000	7,500
100,000	10,000

- Notes:
1. 85% of fuel is ethanol
  2. 10% of fuel is ethanol
  3. 20% of fuel is soybean oil
  4. 10% of fuel is soybean oil