



**MAY 25 2017**

Wayne Gilbert  
Broadview Cooperative Gin  
PO Box 186  
Firebaugh, CA 93622

**Re: Notice of Preliminary Decision – Emission Reduction Credits**  
**Facility Number: C-149**  
**Project Number: C-1162473**

Dear Mr. Gilbert:

Enclosed for your review and comment is the District's analysis of Broadview Cooperative Gin's application for Emission Reduction Credits (ERCs) resulting from the shutdown of a cotton gin, at 40109 W Bullard Ave, Firebaugh, CA. The quantity of ERCs proposed for banking is 484 lb-NOx/yr, 52 lb-SOx/yr, 16,009 lb-PM10/yr, 67 lb-CO/yr, 18 lb-VOC/yr and 222 metric tons CO<sub>2</sub>e/yr.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice comment period, the District intends to issue the ERCs. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Thom Maslowski of Permit Services at (559) 230-5906.

Sincerely,



Arnaud Marjollet  
Director of Permit Services

AM:TM

Enclosures

cc: Tung Le, CARB (w/enclosure) via email  
cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin  
Executive Director/Air Pollution Control Officer

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**Emission Reduction Credit Banking  
Application Review  
Shutdown of a Cotton Ginning Operation**

**Facility Name:** Broadview Cooperative Gin    **Processing Engineer:** T. Maslowski  
**Mailing Address:** PO Box 186    **Lead Engineer:** J. Refuerzo  
Firebaugh, CA 93622    **Date:** May 15, 2017

**Primary Contact:** Wayne Gilbert  
**Phone:** (559) 659-1493

**Facility Location:** 40109 W Bullard  
Firebaugh, CA 93622

**Deemed Complete Date:** 10/21/16  
**Facility:** C-149  
**Project Number:** C-1162473

**I. Summary:**

Broadview Cooperative Gin operated a cotton ginning facility in Firebaugh, CA. The last emission inventory was processed on 2/11/2016 and the facility processed 7,951 bales of cotton at the time. On September 23, 2016, the District received an application from the operator who surrendered the Permit to Operate, C-149-2-4, for the cotton gin and requested Emission Reduction Credits for VOC, NO<sub>x</sub>, CO, PM<sub>10</sub>, SO<sub>x</sub>, and CO<sub>2e</sub>. A copy of the surrendered Permit to Operate (PTO) is attached (Attachment A) and the permit has been cancelled.

Based on the historical operating data prior to the shutdown, the amounts of bankable Actual Emission Reductions (AER) for the emissions are as shown in the table below. These values were calculated, according to the provisions of District Rules 2201 and 2301, as detailed in Section V of this document:

| <b>Bankable Emissions Reductions Credits (ERC)</b> |                                      |                                      |                                      |                                      |
|--|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Pollutant  | 1 <sup>st</sup> Qtr. ERC<br>(lb/qtr) | 2 <sup>nd</sup> Qtr. ERC<br>(lb/qtr) | 3 <sup>rd</sup> Qtr. ERC<br>(lb/qtr) | 4 <sup>th</sup> Qtr. ERC<br>(lb/qtr) |
| NO <sub>x</sub>                                    | 0                                    | 0                                    | 0                                    | 484                                  |
| SO <sub>x</sub>                                    | 0                                    | 0                                    | 0                                    | 52                                   |
| PM <sub>10</sub>                                   | 0                                    | 0                                    | 0                                    | 16,009                               |
| CO   | 0                                    | 0                                    | 0                                    | 67                                   |
| VOC  | 0                                    | 0                                    | 0                                    | 18                                   |

The District has also proposed to issue the Greenhouse Gas (GHG) ERC for Carbon Dioxide equivalent (CO<sub>2e</sub>). The amount of bankable CO<sub>2e</sub> emissions, shown in the table below, was calculated, according to the provisions of District Rules 2201 and 2301, as detailed in Section V of this document:

| <b>Bankable GHG Emissions</b> |                      |
|-------------------------------|----------------------|
| Pollutant                     | ERC metric tons/year |
| CO <sub>2e</sub>              | 222                  |

**II. Applicable Rules:**

Rule 2301 - Emission Reduction Credit Banking (Last amended 1/19/12)

**III. Location of Reductions:**

Physical Location of Equipment: 40109 W Bullard Ave in Firebaugh, CA.

**IV. Method of Generating Reductions:**

The AER's were generated by shutting down a cotton gin. The equipment description for the unit is as follows:

**C-149-2-4:** 2,605 HP COTTON GIN WITH FOUR LUMMUS HOT AIR CLEANERS AND FOUR 4 MMBTU/HR DRYERS, FOUR LUMMUS 158 SAW GIN STANDS, EIGHT LUMMUS LINT CLEANERS WITH SUPER JET (1ST, 2ND STAGE), MOTES SYSTEM, BATTERY CONDENSER, AND TRASH SYSTEM

The gin was limited by permit condition to a ginning rate of 962 bales per day and 147,273 bales per year. The applicant surrendered their PTO on September 23, 2016 as part of the banking application submittal.

**V. Calculations:**

**A. Assumptions**

**Particulate Emissions from Ginning Operation:**

- Annual emissions will be rounded to the nearest pound in accordance with the District Policy APR-1105. GHG emissions will be rounded to the nearest metric ton/year.
- Daily ginning rate was limited to 962 bales per day, assuming 500 pound bales (permit limit).
- Annual ginning rate was limited to 147,273 bales per year (permit limit).
- Based on applicant information for the operations from 2011 to 2015, see below, the typical operating schedule is 24 hours per day and 37 days average per year in the fourth quarter.
- PM<sub>2.5</sub> Fraction (% of the PM<sub>10</sub> that is also PM<sub>2.5</sub>) = 1.9% (Attachment F).

| Cotton Gin Operation Dates   |        |        |        |        |        |
|------------------------------|--------|--------|--------|--------|--------|
| Season                       | 2011   | 2012   | 2013   | 2014   | 2015   |
| Start date                   | Oct 20 | Nov 1  | Nov 1  | Nov 1  | Nov 2  |
| End date                     | Dec 15 | Dec 15 | Dec 7  | Nov 24 | Nov 27 |
| 4 <sup>th</sup> Quarter days | 56     | 44     | 36     | 23     | 25     |
| No of Bales <sup>1</sup>     | 29,263 | 23,943 | 16,485 | 9,518  | 7,951  |

<sup>1</sup>Based on 500 lb/bale.

**LPG Combustion from Cotton Dryers:**

- The cotton gin included four, 4.0 MMBtu/hr burners. All burners were fired on LPG.
- The CO<sub>2e</sub> emission factor from the combustion of propane includes GHG emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, where the total emission factor includes the summation of each of the compounds multiplied by their Global Warming Potential (GWP).
- Conversion: 1,000 kg = 1 metric ton.
- Conversion: 0.094 MMBtu/gal (AP-42, Appendix A, pg. 5, dated 9/85).
- The applicant provided the production and fuel use data for the last five years which is shown in the following table. The information matches the available Emission Inventory data for that period.

| Production and Fuel Use Data |              |               |
|------------------------------|--------------|---------------|
| Year                         | Bales Ginned | LPG (Gallons) |
| 2011                         | 29,263       | 41,560        |
| 2012                         | 23,943       | 47,349        |
| 2013                         | 16,485       | 28,979        |
| 2014                         | 9,518        | 16,561        |
| 2015                         | 7,951        | 16,400        |
| Average                      | 17,432       | 30,170        |

**B. Emission Factors (EF)**

**Cotton Ginning Emissions:**

The current PTO includes a condition limiting PM<sub>10</sub> emissions to 0.88 lb-PM<sub>10</sub>/bale, (see Attachment A; permit condition 25).

District Policy APR 1110 *Use of Revised Generally Accepted Emission Factors* establishes “criteria for the use of emission factors and to address New Source Review (NSR) and Emission Reduction Credits (ERC) issues when using revised Generally Accepted Emission Factors” Basically the policy directs the use of emission factors (EF) that reflect “best data”, when estimating emissions. For example, where facility-specific Continuous Emissions Monitoring or source test data is available, it will be used (unless it is in violation of permit conditions or other requirements). There are no facility-specific source test data for this facility, so the most accurate EF information that exists is the data from the California Cotton Ginners Association Handbook (CCGAH) which is based on a compilation of EFs from source tests on Valley cotton gins.

The EFs from the CCGAH and the PTO are shown in the following table:

| Comparison of 2010 CCGAH Emission Factors for Saw Gins and the Permitted Emissions Factors |                |                                       |                                     |  |
|--|----------------|---------------------------------------|-------------------------------------|--|
| System   | Cyclone Design | CCGAH EFs (lb-PM <sub>10</sub> /bale) | PTO EFs (lb-PM <sub>10</sub> /bale) | EF Used for Calculations (lb-PM <sub>10</sub> /bale) |
| Unloading  | 1D-3D          | 0.11                                  | 0.12                                | 0.11   |
| #1 Pre-cleaner   | 1D-3D          | 0.11                                  | 0.08                                | 0.11   |
| #2 Pre-cleaner   | 1D-3D          | 0.09                                  | 0.06                                | 0.09   |
| Trash collector  | 1D-3D          | 0.08                                  | 0.07                                | 0.08   |
| Over flow separator  | 1D-3D          | 0.04                                  | 0.03                                | 0.04   |
| Lint Cleaning  | 1D-3D          | 0.10                                  | 0.12                                | 0.10   |
| Motes  | 1D-3D          | 0.07                                  | 0.14                                | 0.14 <sup>1</sup>                                    |
| Battery Condenser  | 1D-3D          | 0.03                                  | 0.04                                | 0.03   |
| Master Trash   | 1D-3D          | 0.03                                  | 0.06                                | 0.03   |
| Robber   | 1D-3D          | 0.06                                  | 0.09                                | 0.06   |
| Stockpiler   | 1D-3D          | 0.09                                  | 0.07                                | 0.09   |
| <b>Total</b>   |                | <b>0.81</b>                           | <b>0.88</b>                         | <b>0.88</b>  |

<sup>1</sup>The motes system factor is taken from the PTO since the motes system for this gin consists of two systems (motes handling off lint cleaners and off mote cleaners) with two emission points.

As shown above, the total emissions factor for this cotton gin is 0.88 lb-PM<sub>10</sub>/bale based on the use of the best data in the CCGAH and the PTO EF for the motes transfer emission point.

**LPG Combustion:**

The cotton gin included burners that provided heated air to control the moisture content of the cotton. These burners were fired on LPG and ERCs are requested from their shutdown. The PTO does not indicate LPG combustion emission factors, so the EF for uncontrolled LPG combustions shall be used.

| Burner Emission Factors      |                                  |   |
|------------------------------|----------------------------------|---|
| Operation                    | Emission Rate                    | Source  |
| LPG combustion in the heater | 0.15 lb-NO <sub>x</sub> /MMBtu   | AP-42, Table 1.5-1 (10/96)                        |
|                              | 0.0164 lb-SO <sub>x</sub> /MMBtu | AP-42, Table 1.5-1 (10/96), see calculation below |
|                              | O <sub>2</sub>                   | AP-42, Table 1.5-1 (10/96)                        |
|                              | 0.021 lb-CO/MMBtu                | AP-42, Table 1.5-1 (10/96)                        |
|                              | 0.0055 lb-VOC/MMBtu              | AP-42, Table 1.5-1 (10/96)                        |

<sup>2</sup>Since the dryers' combustion is discharged through the cyclones, the dryer PM<sub>10</sub> emissions will be included with the source tested ginning cyclone emission factors.

The following LPG EF were taken from EPA 40 CFR Part 98, Subpart C, Tables C-1 and C-2:

$$\begin{aligned}EF_{CO_2} &= 61.71 \text{ kg-CO}_2/\text{MMBtu} \\EF_{CH_4} &= 0.003 \text{ kg-CH}_4/\text{MMBtu} \\EF_{N_2O} &= 0.0006 \text{ kg-N}_2\text{O}/\text{MMBtu}\end{aligned}$$

Carbon dioxide equivalents (CO<sub>2</sub>e) are found by multiplying the mass emissions of a GHG by its Global Warming Potentials (GWP). For combustion sources, GHG's include the following three "well-mixed" compounds: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). The District has adopted the following GWP per District Rule 2301 (*Emission Reduction Credit Banking*):

$$\begin{aligned}CO_2 &= 1 \\CH_4 &= 21 \\N_2O &= 310\end{aligned}$$

The GWP of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O will be combined with the combustion emission factors into a single CO<sub>2</sub>e emission factor using the following equation:

$$CO_2e \text{ EF} = [(61.71 \text{ kg-CO}_2/\text{MMBtu} \times 1 \text{ lb-CO}_2e/\text{lb-CO}_2) + (0.003 \text{ kg-CH}_4/\text{MMBtu} \times 21 \text{ lb-CO}_2e/\text{lb-CH}_4) + (0.0006 \text{ kg-N}_2\text{O}/\text{MMBtu} \times 310 \text{ lb-CO}_2e/\text{lb-N}_2\text{O})]$$

$$CO_2e \text{ EF} = 61.96 \text{ kg/MMBtu (equivalent to 0.06196 metric ton/MMBtu)}$$

### **C. Baseline Period Determination and Data**

#### **Baseline Period Determination:**

In accordance with District Rule 2201, Section 3.8, the baseline period is the two consecutive years of operation immediately prior to the submission of the complete application; or another period of at least two consecutive years within the five years immediately prior to the submission of the complete application, if it is more representative of normal source operations.

The application to bank the Emission Reduction Credits (ERCs) from the shutdown of the operation was received on September 23, 2016. Although the gin was in place and operable, it is a seasonal operation which the operator reports was last used on November 27, 2015, as shown in the table "Cotton Gin Operation Dates", in Section V. The time period immediately before the application was a period of non-operation, therefore, we cannot consider this period representative of normal source operation. A representative period from January 2011 through January 2015 will be used to represent the normal operation within the five-year period immediately prior to submission of the complete application.

#### **Baseline Period Determination Data:**

The ginning operation was seasonal, with the actual annual throughput depending on the size of the cotton harvest. Because the harvest can vary significantly from year to year, a

five-year average will be used to determine the normal source operation (NSO). Cotton throughput and LPG usage was provided by the operator and is shown below. This data matches the information provided in the annual emissions inventory surveys for this period.

The difference between the two-year average and NSO was calculated using the following equation:

$$\text{Difference} = ((\text{Year 1 Rate} + \text{Year 2 Rate}) / 2) - 5\text{-year Average Rate}$$

For the 2012 and 2013 period, the difference (absolute value) was calculated as follows:

$$\begin{aligned} \text{Difference} &= ((23,943 + 16,485) / 2) - 17,432 \\ &= 20,214 - 17,432 \\ &= 2,782 \text{ bales/year} \end{aligned}$$

The calculation was repeated for each of the two-year periods in the last five years and the results are shown on the following table:

| <b>Production Data</b> |                                |                      |   |  |
|------------------------|--------------------------------|----------------------|---|--|
| <b>Year</b>            | <b>Throughput (Bales/Year)</b> | <b>LPG (Gallons)</b> | <b>Difference between two-year average and NSO (bales/year)</b> | <b>Difference between two-year average and NSO (gallon/year)</b> |
| <b>2011</b>            | 29,263                         | 41,560               |   |  |
| <b>2012</b>            | 23,943                         | 47,349               | 9,171   | 14,285   |
| <b>2013</b>            | 16,485                         | 28,979               | 2,782   | 7,994  |
| <b>2014</b>            | 9,518                          | 16,561               | 4,431   | 7,400  |
| <b>2015</b>            | 7,951                          | 16,400               | 8,698   | 13,690   |
| <b>5-year Averages</b> | <b>17,432</b>                  | <b>30,170</b>        |   |  |

For the five-years immediately preceding the shutdown, the period most closely matching the normal source operation five-year average is 2012 – 2013 for the bales and 2013 – 2014 for the LPG. The 2012 – 2013 period will be used in the calculations since PM10 is the predominant pollutant and the bales have the greater bearing on PM10 emissions.

- Based on the data shown in the table above, the average annual throughput during the baseline period was 20,214 bales and the average annual LPG consumption was 38,164 gallon per year.
- The PTO limited the production to 147,273 bales per year which the calculated average throughput does not exceed the permitted amount.
- LPG consumption was not limited by a permit condition, so the calculated average does not exceed the permitted amount.

- During this period, the gin was operated only in the fourth quarter.

**D. Historical Actual Emissions (HAEs) Calculations**

The Historical Actual Emissions (HAEs) are calculated using the following equation and the emission factors and throughputs which were discussed above. Results are shown in the following tables:

$$HAE_{LPG} = EF \times 0.094 \text{ MMBtu/gallon} \times 38,164 \text{ gallon}$$

$$HAE_{ginning} = EF \times 20,214 \text{ bales/year}$$

$$HAE_{GHG} = EF \times 0.094 \text{ MMBtu/gallon} \times 38,164 \text{ gallon}$$

| Historical Actual Emissions (HAE <sub>LPG</sub> ) |                |                      |                            |                |
|---|----------------|----------------------|----------------------------|----------------|
| Pollutant   | EF<br>lb/MMBtu | Throughput<br>Gallon | Conversion<br>MMBtu/gallon | HAE<br>lb/year |
| NO <sub>x</sub>                                   | 0.15           | 38,164               | 0.094                      | 538            |
| SO <sub>x</sub>                                   | 0.0164         | 38,164               | 0.094                      | 58             |
| PM <sub>10</sub>                                  | 0              | 38,164               | 0.094                      | 0              |
| CO  | 0.021          | 38,164               | 0.094                      | 75             |
| VOC   | 0.0055         | 38,164               | 0.094                      | 20             |

| Historical Actual Emissions (HAE <sub>ginning</sub> ) |                      |                            |                |
|---|----------------------|----------------------------|----------------|
| Pollutant   | EF<br>(lb PM10/bale) | Throughput<br>(bales/year) | HAE<br>lb/year |
| PM <sub>10</sub>                                      | 0.88                 | 20,214                     | 17,788         |

| Historical Actual Emissions (HAE <sub>GHG</sub> ) |                           |                           |                            |                         |
|---|---------------------------|---------------------------|----------------------------|-------------------------|
| Pollutant   | EF<br>Metric<br>ton/MMBtu | Throughput<br>Gallon/year | Conversion<br>MMBtu/gallon | HAE<br>metric tons/year |
| CO <sub>2e</sub>                                  | 0.06196                   | 38,164                    | 0.094                      | 222                     |

**E. Adjustment to Historical Actual Emissions (HAE)**

**Emissions Adjusted for Rule 4204 - Cotton Gins:**

Rule 4204 (Cotton Gins) requires cotton gins to use 1D-3D cyclones, with emissions equivalent to the emission factors from the latest revision of the CCGA handbook, by July 1, 2008. Pursuant to Section 3.22 of Rule 2201, Historical Actual Emissions must be discounted for any emissions reduction which is: required or encumbered by any laws, rules, regulations, agreements, orders, or, proposed in the District Air Quality Plan for attaining the annual reductions required by the California Clean Air Act. The cotton gin was



in compliance with this rule at the time of the ERC application submittal. The PTO indicated that all the cotton gin's systems were controlled by 1D-3D cyclones. Therefore, no adjustments are needed for these systems.

**Emissions Adjusted for Rule 4309 - Dryers, Dehydrators, and Ovens:**

District Rule 4309 (Dryers, Dehydrators, and Ovens), Section 4.1.6 specifically exempts units used to dry lint cotton or cotton at cotton gins. The dryers at this facility are used to dry cotton therefore no adjustment is necessary.

**Total Adjusted Historical Actual Emissions (HAE):**

The total adjustment is equal to the sum of the adjusted parts. There were no adjustments made to the Historical Actual Emissions for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, or VOC. Therefore the HAE will be equal to the values calculated in Section V.C of this evaluation.

**F. Post Project Potential to Emit (PE2)**

As discussed above, the subject equipment has been permanently shut down and the PTO was surrendered to the District. Therefore the PE2 = 0 for all emissions.

**G. Air Quality Improvement Deduction**

The air quality improvement deduction (AQID), per Rule 2201, Section 3.6, is 10% of the AER, before the AER is eligible for banking. The AQID were calculated according to the following formula and results are showing in the table below:

$AQID = AER \times 10\%$

| <b>AQID Calculations</b> |                                |                                 |
|--------------------------|--------------------------------|---------------------------------|
| <b>Pollutant</b>         | <b>AER<br/>lb/year</b>         | <b>AQID<br/>lb/year</b>         |
| NO <sub>x</sub>          | 538                            | 54                              |
| SO <sub>x</sub>          | 58                             | 6                               |
| PM <sub>10</sub>         | 17,788                         | 1,779                           |
| CO                       | 75                             | 8                               |
| VOC                      | 20                             | 2                               |
| <b>Pollutant</b>         | <b>AER<br/>metric ton/year</b> | <b>AQID<br/>metric ton/year</b> |
| CO <sub>2e</sub>         | 222                            | 0 <sup>1</sup>                  |

<sup>1</sup> The AQID requirement is part of Rule 2201 and therefore only applies to criteria pollutants that are governed by that rule. Calculations for GHG emission reductions are detailed in Rule 2301, Section 4.5, which does not include a provision for an AQID.

## H. Emission Reductions Eligible for Banking

The emission reductions eligible for banking are the difference between the historical actual emissions and the potential to emit after the project. Since the post-project emissions = 0 for all pollutants, the emission reductions eligible for banking equals the HAE, minus the AQID.

The amount of Bankable AER was calculated according to the following formula and results are showing in the table below:

$$\text{Bankable AER} = \text{AER} - \text{AQID}$$

| <b>Bankable AER</b> |                                  |                                  |  |
|---------------------|----------------------------------|----------------------------------|--|
| <b>Pollutant</b>    | <b>AER<br/>lb/year</b>           | <b>AQID<br/>lb/year</b>          | <b>Bankable AER<br/>lb/year</b>          |
| NO <sub>x</sub>     | 538                              | 54                               | 484                                      |
| SO <sub>x</sub>     | 58                               | 6                                | 52                                       |
| PM <sub>10</sub>    | 17,788                           | 1,779                            | 16,009                                   |
| CO                  | 75                               | 8                                | 67                                       |
| VOC                 | 20                               | 2                                | 18                                       |
| <b>Pollutant</b>    | <b>AER<br/>metric tons /year</b> | <b>AQID<br/>metric tons/year</b> | <b>Bankable AER<br/>metric tons/year</b> |
| CO <sub>2e</sub>    | 222                              | 0                                | 222                                      |

- During the baseline period, the gin was operated solely in the fourth quarter. Therefore, the bankable ERC will be distributed to the fourth quarter only:

## VI. Compliance:

### Rule 2301 - Emission Reduction Credit Banking

#### **Section 4.0 - Eligibility of Emission Reductions**

Section 4.2, specifies the criteria by which emission reductions, that have occurred after September 19, 1991, are eligible for banking. The emission reductions in this project occurred when the PTO for the cotton ginning equipment was surrendered, effective May 27, 2014. As these emission reductions occurred after September 19, 1991, the criteria in Section 4.2 must be satisfied.

Section 4.2.1 requires that the emission reductions are real, surplus, permanent, quantifiable, and enforceable.

**Criteria Pollutant Emissions:**

**Real:**

The emission reductions were generated by the shutdown of a 16 MMBtu/hr cotton gin. The real emissions were calculated from actual historic production throughput and fuel-use data and recognized emission factors. The ginning equipment has been removed from service and the permit was subsequently surrendered to the District. Therefore, the emission reductions are real.

**Surplus:**

There are no laws, rules, regulations, agreements, orders, or permits requiring any of the emission reductions which generated the ERC:

- Shutdown of the gin was voluntary and not required by any law, rule, agreement, or regulation.
- These ERCs are not needed for their current or proposed operations.
- The emission factors are not subject to additional adjustments and therefore surplus to the requirements of the District 2007 PM<sub>10</sub> plan and District Rule 4204.
- According to the attached records, the gin did not exceed the permitted baling rates and there were no limits on LPG consumption, so no adjustments are necessary on that basis.
- There are no laws, rules, regulations, agreements, orders, or permits requiring any GHG emission reductions from cotton ginning operations.
- The emission reductions are not the result of an action taken by the permittee to comply with any requirement of Rule 4204 Cotton Gins.

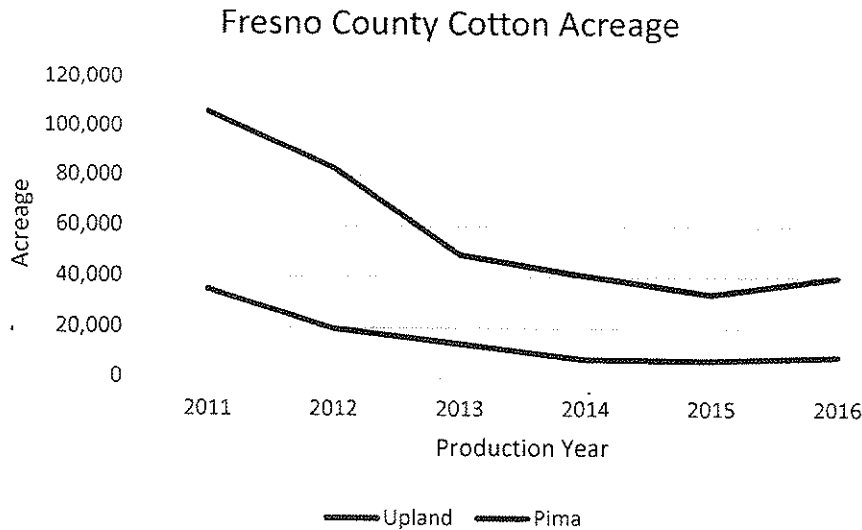
Therefore, the emission reductions satisfy the surplus requirement.

**Permanent:**

The gin has been shut down, and the PTO has been surrendered. Further operation requires an application to the District for a new operating permit.

Due to the high transportation costs, it is not cost effective to ship field cotton to other locations for processing. As such, the cotton processed at this facility was produced in the surrounding area. As shown in the following table, California cotton acreage dropped significantly in the last 10 years. According to the applicant, this decline in cotton production led the closure of this facility. Because of the decline in cotton production in the state, it is expected that there will be no shifting of the past emissions to a similar facility.

Therefore, the emission reductions satisfy the surplus requirement.



Fresno County Annual Crop Report

**Quantifiable:**

Actual Emission Reductions (AER) amounts were calculated from historic process throughput data, source test results from similar operations, California Cotton Ginners Association emission factors, and methods according to District Rule 2201. Therefore, the reductions are quantifiable.

Therefore, the emission reductions satisfy the quantifiable requirement.

**Enforceable:**

The PTO for this facility has been surrendered and the gins cannot be operated without a valid PTO. Due to the size and complexity of the operation, the large bulk of the material processed, and the amount of lint, seeds, and waste material generated, it would be readily apparent if it were to be operated in the future.

Therefore, the emission reductions satisfy the enforceable requirement.

Section 4.2.2 requires that AER be calculated in accordance with the procedure in Rule 2201 (New and Modified Stationary Source Review Rule), including any adjustments for use of Community Bank offsets. As detailed in Section V Calculations, the AER were calculated according to the procedure in Rule 2201 and the past permitting of the facility did not include Community Bank ERC.

Therefore, the emission reductions satisfy the requirements of this section.

Section 4.2.3 requires that an application be filed no later than 180 days after the reduction occurred. The ERC banking application was filed and the PTO was surrendered on September 23, 2016. According to District Policy APR 1805, the date of the shutdown is considered to be the date on which the PTO is surrendered, unless the equipment was removed or the District determines the owner did not intend to operate again. Since the District has no evidence that either of these were the case, the gin is considered to be

operational at time of permit surrender. The application was filed concurrently with the gin closure and is therefore considered timely.

Therefore, the emission reductions satisfy the timely submittal requirement of this section.

Section 4.2.4 applies to emissions from non-permitted units. The gin was permitted so this section is not applicable.

Section 4.3 applies to banking offsets which were provided for cancelled Authorities to Construct. These emissions were not previously banked so this section is not applicable.

Section 4.4 refers to source categories which are not eligible for ERC. The categories do not include gin shutdowns, so this section is not applicable.

Section 4.5 details criteria for determining eligibility of Green House Gas (GHG) emissions for banking. The applicant has requested to bank the GHG AER so this section is applicable.

Section 4.5.1 requires that the GHG emission reductions must have occurred after January 1, 2005. As stated above, the gin was shutdown effective September 23, 2016, so the GHG emission reductions satisfy the requirements of this section.

Section 4.5.2 requires that the reductions must have occurred within the San Joaquin Valley Air Pollution Control District. The emissions occurred at 40109 W Bullard Ave in Firebaugh, CA. This location is in Fresno County, which is located within the San Joaquin Valley Air Pollution Control District boundaries. Therefore, the GHG emission reductions satisfy the location requirement of this section.

Section 4.5.3 requires that the GHG emission reductions must be real, surplus, permanent, quantifiable, and enforceable.

### **GHG Emissions:**

#### **Real:**

The GHG emission reductions were generated by the shutdown of one 16 MMBtu/hr cotton gin. The GHG emissions were calculated from actual historic production throughput and fuel-use data and recognized GHG emission factors. The ginning equipment has been removed from service and the permit subsequently was subsequently surrendered to the District. The GHG emissions reductions were calculated from actual historic production data and recognized GHG emission factors. Therefore, the GHG emission reductions are real.

Therefore, the GHG emission reductions satisfy the real requirement.

**Surplus:**

There are no laws, rules, regulations, agreements, orders, or permits requiring any of the GHG emission reductions which generated the ERC:

- The shutdown of the gin was voluntary and not required by any law, rule, agreement, or regulation.
- These GHG ERCs are not needed for their current or proposed operations.
- The GHG emission factors are not subject to additional adjustments and therefore surplus to the requirements of the District 2007 PM<sub>10</sub> plan and District Rule 4204.
- According to the attached records, the gin did not exceed the permitted baling rates and there were no limits on LPG consumption, so no adjustments are necessary on that basis.
- The facility is not in one of the categories subject to CARB GHG cap and trade regulations and there are no other laws, rules, regulations, agreements, orders, or permits requiring any GHG emission reductions from cotton ginning operations.
- The GHG emission reductions are not the result of an action taken by the permittee to comply with any requirement of Rule 4204 Cotton Gins.

Therefore, the GHG emission reductions satisfy the surplus requirement.

**Permanent:**

The gin has been shut down, and the PTO has been surrendered. Further operation requires an application to the District.

Due to the high transportation costs, it is not cost effective to ship field cotton to other locations for processing. As such, the cotton processed at this facility was produced in the surrounding area. As was shown in the earlier section, California cotton acreage dropped significantly in the last 10 years. According to the applicant, this decline in cotton production led the closure of this facility. Because of the decline in production, it is expected that there will be no shifting of the past GHG emissions to a similar facility.

Therefore, the GHG emission reductions satisfy the permanent requirement.

**Quantifiable:**

Actual Emission Reductions (AER) amounts were calculated from historic process throughput data, source test results from similar operations, California Cotton Ginners Association emission factors, and methods according to District Rule 2201. Therefore, the GHG emission reductions are quantifiable.

Therefore, the GHG emission reductions satisfy the quantifiable requirement.

**Enforceable:**

The PTO for this facility has been surrendered and the gins cannot be operated without a valid PTO. Due to the size and complexity of the operation, the large bulk of the material

processed, and the amount of lint, seeds, and waste material generated, it would be readily apparent if it were to be operated in the future.

Therefore, the GHG emission reductions satisfy the enforceable requirement.

Section 4.5.4 requires that GHG emission reductions be calculated as the difference between the historic annual average GHG emissions (as CO<sub>2</sub>e) and the PE2 after the reduction is complete. The historical GHG emissions must be calculated using the consecutive 24 month period immediately prior to the date the emission reductions occurred, or another consecutive 24 month period in the 60 months prior to the date the emission reduction occurred if determined by the APCO as being more representative of normal operations.

The GHG emission reductions were calculated according to the baseline period identified above. Since this is a permanent shutdown of the cotton ginning processing operation and its associated equipment, with none of the load being shifted to any other cotton gin within the boundaries of the San Joaquin Valley Air Pollution Control District jurisdiction, there is no post-project potential to emit GHG.

Section 4.5.5 requires that GHG emission reductions be quantified using CARB-approved emission reduction project protocols. Since the GHG emission reductions are not subject to an applicable CARB-approved emission reduction project protocol, this section is not applicable.

Section 4.5.6 requires that ERCs shall be made enforceable through permit conditions or legally binding contract. The cotton gin operators held a legal District operating permit. That permit has been surrendered to the District. Since the operation of the equipment would require new Authorities to Construct, as discussed above, the GHG emission reduction is enforceable.

## **Section 5.0 - ERC Application Procedures**

Section 5.5 of Rule 2301 states that ERC certificate applications for reductions shall be submitted within 180 days after the emission reduction occurs. The ERC application was received on September 23, 2016. The applicant surrendered the PTO and therefore permanently ceased operations at this location effective September 23, 2016. Therefore, the application was submitted in a timely fashion.

## **Section 6.0 - Registration of ERC Certificates**

The APCO may only grant an ERC Certificate after the emission reductions have actually occurred upon satisfaction of the following applicable provisions:

Section 6.14 Greenhouse gas emission reductions shall be banked as metric tons of CO<sub>2</sub>e per year, rounded to the nearest metric ton.

The draft GHG ERC is identified as metric tons of CO<sub>2</sub>e per year, rounded to the nearest metric ton.

Section 6.15 specifies the registration requirements for GHG ERCs.

This emission reduction is surplus and additional of all requirements pursuant to Section 4.5.3.4. Therefore the ERC certificate shall include the following notation:

"This emission reduction is surplus and additional to all applicable regulatory requirements."

Compliance with Rule 2301 has been demonstrated and no adjustments are required under this rule.

**VII. Recommendation:**

Pending a successful Public Noticing period, issue Emission Reduction Credit certificate to Broadview Cooperative Gin in accordance with the amounts specified on the draft ERC certificates in Attachment E.

**Attachments:**

Attachment A: Surrendered PTO C-149-2-4

Attachment B: ERC Application

Attachment C: Cotton Ginning Throughput and LPG Usage Records

Attachment D: 40 CFR Part 98 GHG Emission Factors and Global Warming Potentials (GWP): Tables A-1, C-1 and C-2

Attachment E: Draft ERC Certificates

Attachment F: PM<sub>2.5</sub> Fraction



# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** C-149-2-4

**EXPIRATION DATE:** 09/30/2017

**EQUIPMENT DESCRIPTION:**

2,605 HP COTTON GIN WITH FOUR LUMMUS HOT AIR CLEANERS AND FOUR 4 MMBTU/HR DRYERS, FOUR LUMMUS 158 SAW GIN STANDS, EIGHT LUMMUS LINT CLEANERS WITH SUPER JET (1ST, 2ND STAGE), MOTES SYSTEM, BATTERY CONDENSER, AND TRASH SYSTEM

## PERMIT UNIT REQUIREMENTS

---

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
6. Unloading system shall be served by four 48" 1D-3D cyclone collectors. [District Rule 2201]
7. The No. 1A hot air drying and precleaning system of the saw ginning operation shall be controlled by two 48" 1D-3D cyclones with expansion chambers and enhanced bottom cones. [District Rule 2201]
8. No. 1B hot air drying and cleaning system shall be served by two 48" 1D-3D cyclone collectors. [District Rule 2201]
9. The No. 2A hot air drying and precleaning system of the saw ginning operation shall be controlled by two 48" 1D-3D cyclones with expansion chambers and enhanced bottom cones. [District Rule 2201]
10. No. 2B hot air drying and cleaning system shall be served by two 48" 1D-3D cyclone collectors. [District Rule 2201]
11. Feeding and ginning trash collector shall be served by one 34" 1D-3D cyclone collector. [District Rule 2201]
12. Overflow separator shall be served by one 48" 1D-3D cyclone collector. [District Rule 2201]
13. Lint cleaning shall be served by eight 58" 1D-3D cyclone collectors. [District Rule 2201]
14. Motes shall be served by two 72" 1D-3D and one 34" 1D-3D cyclone collectors. [District Rule 2201]
15. Battery condenser shall be served by three 64" 1D-3D cyclone collectors. [District Rule 2201]
16. Master trash shall be served by two 38" 1D-3D cyclone collectors. [District Rule 2201]
17. The robber system of the saw ginning operation shall be controlled by two 44" enhanced 1D-3D cyclones, operating at a cyclone inlet air velocity of 3200 ñ 400 ft/min. [District Rules 2201 and 4204]
18. Stockpiler shall be served by one 36" plenum and two 18" 1D-3D cyclone collectors. [District Rule 2201]
19. All 1D-3D cyclones shall operate at a cyclone inlet air velocity of 3200 ñ 400 ft/min. [District Rule 4204]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

20. The trash loading area shall be enclosed with four sides that are higher than the trash auger. Two sides shall be solid. The remaining sides shall have flexible wind barriers that extend below the top of the trash trailer sides. [District Rule 4204]
21. The trash auger of the trash piling system shall have both sides equipped with wind barriers that extend, as measured vertically prior to trash pile build-up, one foot above and three feet below the auger. [District Rule 4204]
22. After the trash pile has built up to the height of the trash auger, removing material from the pile shall be performed in such a way as to prevent free-falling trash from the stockpiling system. [District Rule 4204]
23. If the trash stockpile is removed to prevent the build-up of heat in the pile, the operator shall record the date of the removal [District Rule 4204]
24. Permittee shall conduct daily visual inspections of the material handling systems for leaks, breaks, or other visible signs of equipment malfunctions [District Rule 4204]
25. Total PM10 emissions from the saw cotton gin operation shall not exceed 3.5 pound per ton of baled cotton (0.88 pound per bale, corrected to 500 pound bales). [District Rule 2201]
26. Daily ginning rate of the saw gin stand shall not exceed 241 tons of baled cotton per day (962 bales per day, based 500 pound bales). [District Rule 2201]
27. Annual ginning rate of the saw gin stand shall not exceed 36,818 tons of baled cotton per year (147,273 bales per year, based on 500 pound bales). [District Rule 2201]
28. Total emissions from the cyclone collectors serving the unloading system shall not exceed 0.12 lb PM10/bale. [District Rule 2201]
29. PM10 emissions from the cyclone system serving the #1 hot air drying and precleaning system for the saw gin shall not exceed 0.08 pound per bale, corrected to 500 pound bales. [District Rule 2201]
30. PM10 emissions from the cyclone system serving the #2 hot air drying and precleaning system for the saw gin shall not exceed 0.06 pound per bale, corrected to 500 pound bales. [District Rule 2201]
31. Total emissions from the cyclone collector serving the feeding and ginning trash collector shall not exceed 0.07 lb PM10/bale. [District Rule 2201]
32. Total emissions from the cyclone collector serving the overflow separator shall not exceed 0.03 lb PM10/bale. [District Rule 2201]
33. Total emissions from the cyclone collectors serving the lint cleaning system shall not exceed 0.12 lb PM10/bale. [District Rule 2201]
34. Total emissions from the cyclone collectors serving the motes shall not exceed 0.14 lb PM10/bale. [District Rule 2201]
35. Total emissions from the cyclone collectors serving the battery condenser shall not exceed 0.04 lb PM10/bale. [District Rule 2201]
36. Total emissions from the cyclone collectors serving the master trash shall not exceed 0.06 lb PM10/bale. [District Rule 2201]
37. Total emissions from the cyclone collectors serving the robber system shall not exceed 0.09 lb PM10/bale. [District Rule 2201]
38. Total emissions from the cyclone collector serving the stockpiler shall not exceed 0.07 lb PM10/bale. [District Rule 2201]
39. PM10 emissions shall be determined using EPA Method 201A, or CARB Methods 5 and 501. [District Rules 2201 and 1081]
40. Permittee shall maintain daily and annual records of number and weight of bales produced, corrected to 500 pound bales. [District Rule 4204]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

41. Permittee shall maintain a record of the daily inspections, including any equipment malfunctions discovered and corrective action taken to repair the malfunction, and any source test results. [District Rule 4204]
42. All records shall be retained on site for five years and made available to the District upon request. [District Rules 1070 and 4204]

These terms and conditions are part of the Facility-wide Permit to Operate.

Attachment B

ERC Application

RECEIVED

SEP 23 2016

SJVUAPCD

# San Joaquin Valley Air Pollution Control District Application for

EMISSION REDUCTION CREDIT (ERC)

CONSOLIDATION OF ERC CERTIFICATES

1. ERC TO BE ISSUED TO: Broadview Cooperative Gin Facility ID: C-149  
(if known)

2. MAILING ADDRESS: Street/P.O. Box: PO Box 186  
City: Firebaugh State: CA Zip Code: 93622

3. LOCATION OF REDUCTION:  
Street: 40109 W. Bullard Ave.  
City: Firebaugh, CA  
\_\_\_\_\_/4 SECTION \_\_\_\_\_ TOWNSHIP \_\_\_\_\_ RANGE \_\_\_\_\_

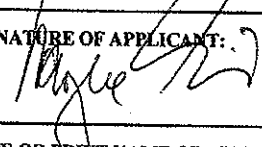
4. DATE OF REDUCTION:  
08/22/2016

5. PERMIT NO(S): C-149-2-4 EXISTING ERC NO(S): \_\_\_\_\_

6. METHOD RESULTING IN EMISSION REDUCTION:  
 SHUTDOWN  RETROFIT  PROCESS CHANGE  OTHER  
DESCRIPTION: Shutdown of existing cotton gin.  
(Use additional sheets if necessary)

7. REQUESTED ERCs (In Pounds Per Calendar Quarter):

|             | VOC  | NOx   | CO   | PM10     | SOx  | OTHER             |
|-------------|------|-------|------|----------|------|-------------------|
| 1ST QUARTER |      |       |      |          |      |                   |
| 2ND QUARTER |      |       |      |          |      |                   |
| 3RD QUARTER |      |       |      |          |      | CO2e              |
| 4TH QUARTER | 17.1 | 480.4 | 65.3 | 17,856.0 | 12.0 | 2,163.9 (tons/yr) |

8. SIGNATURE OF APPLICANT:  TYPE OR PRINT TITLE OF APPLICANT: Manager

9. TYPE OR PRINT NAME OF APPLICANT: Wayne Gilbert DATE: 08-22-2016 TELEPHONE NO: 559-659-1493

FOR APCD USE ONLY:

|            |  |
|------------|--|
| DATE STAMP | FILING FEE RECEIVED: \$ <u>832.00</u>                    |
|            | DATE PAID: _____   |
|            | PROJECT NO.: <u>C-1162473</u> FACILITY ID.: <u>C-149</u> |

Northern Regional Office \* 4230 Kiernan Avenue, Suite 130 \* Modesto, California 95356-9321 \* (209) 557-6400 \* FAX (209) 557-6475  
 Central Regional Office \* 1990 East Gettysburg Avenue \* Fresno, California 93726-0244 \* (559) 230-5900 \* FAX (559) 230-6061  
 Southern Regional Office \* 2700 M Street, Suite 275 \* Bakersfield, California 93301-2370 \* (661) 326-6900 \* FAX (661) 326-6985

## Attachment C

Cotton Ginning Throughput and LPG Usage Records

**SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT  
SUPPLEMENTAL APPLICATION FORM**

**COTTON GINS  
Emission Reduction Credit (ERC)**

*(This form must be accompanied by a completed Application for Emission Reduction Credit form.)*

|                              |   |
|------------------------------|---|
| Certificate to be Issued to: | <b>Broadview Cooperative Gin</b>            |
| Gin Location:                | <b>40109 W. Bullard Ave., Firebaugh, CA</b> |

1. Are the emission reductions due to the installation of control equipment at an existing cotton gin? **n/a**

If "yes", please list the Authority (-ies) to Construct authorizing the installation:

**n/a**

2. Are the emission reductions due to the shut-down of a cotton gin?  
**Yes**

If "yes", please list the applicable Permit to Operate number(s):

**C-149-2-4**

3. What date did the emission reductions occur? (if #1 above applies, when was the gin first operated after control equipment was installed? If #2 applies, when was the gin last operated, or when was the Permit to Operate surrendered?)

MM/DD/YY: **08/22/2016**

4. Submit operational data for the five consecutive seasons prior to the reduction (if the emission reductions are result of the installation of control equipment, submit for the five years prior to the issuance of the applicable ATC):

| Season         | 2011           | 2012           | 2013          | 2014           | 2015           |
|----------------|----------------|----------------|---------------|----------------|----------------|
| Start MM/DD/YY | <b>Oct. 20</b> | <b>Nov. 1</b>  | <b>Nov. 1</b> | <b>Nov. 1</b>  | <b>Nov. 2</b>  |
| End MM/DD/YY   | <b>Dec. 15</b> | <b>Dec. 26</b> | <b>Dec. 7</b> | <b>Nov. 24</b> | <b>Nov. 27</b> |
| No. of Bales*  | <b>29,263</b>  | <b>23,943</b>  | <b>16,485</b> | <b>9,518</b>   | <b>7,951</b>   |

\*Number of bales after correcting to 500 pounds per bale.

*(Please continue on other side)*

SACG-2 8/93

5. Provide emission factors (EF) in pounds of PM<sub>10</sub> emissions per 500 pound bale:

| System        | Pre-mod or<br>Pre-shutdown EF | References             |
|---------------|-------------------------------|------------------------|
| <b>Totals</b> | <b>1.0</b>                    | Permit/ Source<br>Test |



## Attachment D

40 CFR Part 98 GHG Emission Factors and Global Warming Potentials (GWP): Tables A-1, C-1 and C-2

## ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR data is current as of November 30, 2016

Title 40 → Chapter I → Subchapter C → Part 98 → Subpart C → Appendix

Title 40: Protection of Environment  
 PART 98—MANDATORY GREENHOUSE GAS REPORTING  
 Subpart C—General Stationary Fuel Combustion Sources

TABLE C-1 TO SUBPART C OF PART 98—DEFAULT CO<sub>2</sub> EMISSION FACTORS AND HIGH HEAT VALUES FOR VARIOUS TYPES OF FUEL

DEFAULT CO<sub>2</sub> EMISSION FACTORS AND HIGH HEAT VALUES FOR VARIOUS TYPES OF FUEL

| Fuel type                                    | Default high heat value | Default CO <sub>2</sub> emission factor |
|--|-------------------------|---|
| Coal and coke                                |                         |   |
|  | mmBtu/short ton         | kg CO <sub>2</sub> /mmBtu               |
| Anthracite                                   | 25.09                   | 103.69                                  |
| Bituminous                                   | 24.93                   | 93.28                                   |
| Subbituminous                                | 17.25                   | 97.17                                   |
| Lignite                                      | 14.21                   | 97.72                                   |
| Coal Coke                                    | 24.80                   | 113.67                                  |
| Mixed (Commercial sector)                    | 21.39                   | 94.27                                   |
| Mixed (Industrial coking)                    | 26.28                   | 93.90                                   |
| Mixed (Industrial sector)                    | 22.35                   | 94.67                                   |
| Mixed (Electric Power sector)                | 19.73                   | 95.52                                   |
| Natural gas                                  |                         |   |
|  | mmBtu/scf               | kg CO <sub>2</sub> /mmBtu               |
| (Weighted U.S. Average)                      | $1.026 \times 10^{-3}$  | 53.06                                   |
| Petroleum products                           |                         |   |
|  | mmBtu/gallon            | kg CO <sub>2</sub> /mmBtu               |
| Distillate Fuel Oil No. 1                    | 0.139                   | 73.25                                   |
| Distillate Fuel Oil No. 2                    | 0.138                   | 73.96                                   |
| Distillate Fuel Oil No. 4                    | 0.146                   | 75.04                                   |
| Residual Fuel Oil No. 5                      | 0.140                   | 72.93                                   |
| Residual Fuel Oil No. 6                      | 0.150                   | 75.10                                   |
| Used Oil                                     | 0.138                   | 74.00                                   |
| Kerosene                                     | 0.135                   | 75.20                                   |
| Liquefied petroleum gases (LPG) <sup>1</sup> | 0.092                   | 61.71                                   |
| Propane <sup>1</sup>                         | 0.091                   | 62.87                                   |
| Propylene <sup>2</sup>                       | 0.091                   | 67.77                                   |
| Ethane <sup>1</sup>                          | 0.068                   | 59.60                                   |
| Ethanol                                      | 0.084                   | 68.44                                   |
| Ethylene <sup>2</sup>                        | 0.058                   | 65.96                                   |
| Isobutane <sup>1</sup>                       | 0.099                   | 64.94                                   |
| Isobutylene <sup>1</sup>                     | 0.103                   | 68.86                                   |
| Butane <sup>1</sup>                          | 0.103                   | 64.77                                   |
| Butylene <sup>1</sup>                        | 0.105                   | 68.72                                   |
| Naphtha (<401 deg F)                         | 0.125                   | 68.02                                   |
| Natural Gasoline                             | 0.110                   | 66.88                                   |
| Other Oil (>401 deg F)                       | 0.139                   | 76.22                                   |
| Pentanes Plus                                | 0.110                   | 70.02                                   |
| Petrochemical Feedstocks                     | 0.125                   | 71.02                                   |
| Petroleum Coke                               | 0.143                   | 102.41                                  |
| Special Naphtha                              | 0.125                   | 72.34                                   |
| Unfinished Oils                              | 0.139                   | 74.54                                   |
| Heavy Gas Oils                               | 0.148                   | 74.92                                   |
| Lubricants                                   | 0.144                   | 74.27                                   |
| Motor Gasoline                               | 0.125                   | 70.22                                   |
| Aviation Gasoline                            | 0.120                   | 69.25                                   |
| Kerosene-Type Jet Fuel                       | 0.135                   | 72.22                                   |
| Asphalt and Road Oil                         | 0.158                   | 75.36                                   |
| Crude Oil                                    | 0.138                   | 74.54                                   |

| Other fuels—solid                                | mmBtu/short ton          | kg CO <sub>2</sub> /mmBtu |
|--|--------------------------|---------------------------|
| Municipal Solid Waste                            | 9.95 <sup>3</sup>        | 90.7                      |
| Tires  | 28.00                    | 85.97                     |
| Plastics   | 38.00                    | 75.00                     |
| Petroleum Coke                                   | 30.00                    | 102.41                    |
| Other fuels—gaseous                              | mmBtu/scf                | kg CO <sub>2</sub> /mmBtu |
| Blast Furnace Gas                                | 0.092 × 10 <sup>-3</sup> | 274.32                    |
| Coke Oven Gas                                    | 0.599 × 10 <sup>-3</sup> | 46.85                     |
| Propane Gas                                      | 2.516 × 10 <sup>-3</sup> | 61.46                     |
| Fuel Gas <sup>4</sup>                            | 1.388 × 10 <sup>-3</sup> | 59.00                     |
| Biomass fuels—solid                              | mmBtu/short ton          | kg CO <sub>2</sub> /mmBtu |
| Wood and Wood Residuals (dry basis) <sup>5</sup> | 17.48                    | 93.80                     |
| Agricultural Byproducts                          | 8.25                     | 118.17                    |
| Peat   | 8.00                     | 111.84                    |
| Solid Byproducts                                 | 10.39                    | 105.51                    |
| Biomass fuels—gaseous                            | mmBtu/scf                | kg CO <sub>2</sub> /mmBtu |
| Landfill Gas                                     | 0.485 × 10 <sup>-3</sup> | 52.07                     |
| Other Biomass Gases                              | 0.655 × 10 <sup>-3</sup> | 52.07                     |
| Biomass Fuels—Liquid                             | mmBtu/gallon             | kg CO <sub>2</sub> /mmBtu |
| Ethanol  | 0.084                    | 68.44                     |
| Biodiesel (100%)                                 | 0.128                    | 73.84                     |
| Rendered Animal Fat                              | 0.125                    | 71.06                     |
| Vegetable Oil                                    | 0.120                    | 81.55                     |

<sup>1</sup>The HHV for components of LPG determined at 60 °F and saturation pressure with the exception of ethylene.

<sup>2</sup>Ethylene HHV determined at 41 °F (5 °C) and saturation pressure.

<sup>3</sup>Use of this default HHV is allowed only for: (a) Units that combust MSW, do not generate steam, and are allowed to use Tier 1; (b) units that derive no more than 10 percent of their annual heat input from MSW and/or tires; and (c) small batch incinerators that combust no more than 1,000 tons of MSW per year.

<sup>4</sup>Reporters subject to subpart X of this part that are complying with §98.243(d) or subpart Y of this part may only use the default HHV and the default CO<sub>2</sub> emission factor for fuel gas combustion under the conditions prescribed in §98.243(d) (2)(i) and (d)(2)(ii) and §98.252(a)(1) and (a)(2), respectively. Otherwise, reporters subject to subpart X or subpart Y shall use either Tier 3 (Equation C-5) or Tier 4.

<sup>5</sup>Use the following formula to calculate a wet basis HHV for use in Equation C-1:  $HHV_w = ((100 - M)/100) \cdot HHV_d$  where  $HHV_w$  = wet basis HHV, M = moisture content (percent) and  $HHV_d$  = dry basis HHV from Table C-1.

[78 FR 71950, Nov. 29, 2013]

Need assistance?

## ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR data is current as of November 30, 2016

Title 40 → Chapter I → Subchapter C → Part 98 → Subpart C → Appendix

Title 40: Protection of Environment  
 PART 98—MANDATORY GREENHOUSE GAS REPORTING  
 Subpart C—General Stationary Fuel Combustion Sources

TABLE C-2 TO SUBPART C OF PART 98—DEFAULT CH<sub>4</sub> AND N<sub>2</sub>O EMISSION FACTORS FOR VARIOUS TYPES OF FUEL

| Fuel type   | Default CH <sub>4</sub> emission factor (kg CH <sub>4</sub> /mmBtu) | Default N <sub>2</sub> O emission factor (kg N <sub>2</sub> O/mmBtu) |
|---|---|--|
| Coal and Coke (All fuel types in Table C-1)                                       | $1.1 \times 10^{-02}$   | $1.6 \times 10^{-03}$  |
| Natural Gas   | $1.0 \times 10^{-03}$   | $1.0 \times 10^{-04}$  |
| Petroleum (All fuel types in Table C-1)   | $3.0 \times 10^{-03}$   | $6.0 \times 10^{-04}$  |
| Fuel Gas  | $3.0 \times 10^{-03}$   | $6.0 \times 10^{-04}$  |
| Municipal Solid Waste   | $3.2 \times 10^{-02}$   | $4.2 \times 10^{-03}$  |
| Tires   | $3.2 \times 10^{-02}$   | $4.2 \times 10^{-03}$  |
| Blast Furnace Gas   | $2.2 \times 10^{-05}$   | $1.0 \times 10^{-04}$  |
| Coke Oven Gas   | $4.8 \times 10^{-04}$   | $1.0 \times 10^{-04}$  |
| Biomass Fuels—Solid (All fuel types in Table C-1, except wood and wood residuals) | $3.2 \times 10^{-02}$   | $4.2 \times 10^{-03}$  |
| Wood and wood residuals   | $7.2 \times 10^{-03}$   | $3.6 \times 10^{-03}$  |
| Biomass Fuels—Gaseous (All fuel types in Table C-1)                               | $3.2 \times 10^{-03}$   | $6.3 \times 10^{-04}$  |
| Biomass Fuels—Liquid (All fuel types in Table C-1)                                | $1.1 \times 10^{-03}$   | $1.1 \times 10^{-04}$  |

Note: Those employing this table are assumed to fall under the IPCC definitions of the "Energy Industry" or "Manufacturing Industries and Construction". In all fuels except for coal the values for these two categories are identical. For coal combustion, those who fall within the IPCC "Energy Industry" category may employ a value of 1g of CH<sub>4</sub>/mmBtu.

[78 FR 71952, Nov. 29, 2013]

Need assistance?

# Attachment E

## Draft ERC Certificates

San Joaquin Valley  
Air Pollution Control District

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726

**Emission Reduction Credit Certificate**

**C1162473-72-1**

DRAFT

ISSUED TO: BROADVIEW COOP GIN

ISSUED DATE: <DRAFT>

LOCATION OF REDUCTION: 40109 W BULLARD AVE  
FIREBAUGH, CA 93622

For VOC Reductions In The Amount Of:

| Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
|-----------|-----------|-----------|-----------|
| None      | None      | None      | 18 lbs    |

Method Of Reduction

- Shutdown of Entire Stationary Source
- Shutdown of Emissions Units
- Other

The shutdown of cotton gin

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

San Joaquin Valley  
Air Pollution Control District

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726

**Emission Reduction Credit Certificate**

**C1162473-72-2**

DRAFT

ISSUED TO: BROADVIEW COOP GIN

ISSUED DATE: <DRAFT>

LOCATION OF REDUCTION: 40109 W BULLARD AVE  
FIREBAUGH, CA 93622

For NOx Reductions In The Amount Of:

| Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
|-----------|-----------|-----------|-----------|
| None      | None      | None      | 484 lbs   |

**Method Of Reduction**

- Shutdown of Entire Stationary Source
- Shutdown of Emissions Units
- Other

The shutdown of cotton gin

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

San Joaquin Valley  
Air Pollution Control District

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726

**Emission Reduction Credit Certificate**

**C1162473-72-3**

DRAFT

ISSUED TO: BROADVIEW COOP GIN

ISSUED DATE: <DRAFT>

LOCATION OF REDUCTION: 40109 W BULLARD AVE  
FIREBAUGH, CA 93622

For CO Reductions In The Amount Of:

| Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
|-----------|-----------|-----------|-----------|
| None      | None      | None      | 67 lbs    |

Method Of Reduction

- Shutdown of Entire Stationary Source
- Shutdown of Emissions Units
- Other

The shutdown of cotton gin

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services



San Joaquin Valley  
Air Pollution Control District

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726

**Emission Reduction Credit Certificate**

**C1162473-72-4**

DRAFT

ISSUED TO: BROADVIEW COOP GIN

ISSUED DATE: <DRAFT>

LOCATION OF REDUCTION: 40109 W BULLARD AVE  
FIREBAUGH, CA 93622

For PM10 Reductions In The Amount Of:

| Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4  |
|-----------|-----------|-----------|------------|
| None      | None      | None      | 16,009 lbs |

Portion of above PM10 Reductions that is PM2.5:

| Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
|-----------|-----------|-----------|-----------|
| 0.0%      | 0.0%      | 0.0%      | 1.9%      |
| None      | None      | None      | 304 lbs   |

Method Of Reduction

- Shutdown of Entire Stationary Source
- Shutdown of Emissions Units
- Other

The shutdown of cotton gin

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services