PM Size Profile for Cotton Ginning Operations  

—PM3282

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1 Introduction

The current PM profile for cotton ginning operations is PM3281 [1], in which the ratio of PM$_{10}$ to total particulate matter (TPM) is 0.447 and PM$_{2.5}$ to total is 0.067. Recently, the National Cotton Ginning Particulate Matter Emissions Study (NCGPMES) [2] has summarized the test results from its 50 individual study reports. The new size fraction values obtained from the study are proposed for use in updating the existing CARB cotton ginning profile\(^1\). The updated cotton ginning profile is PM3282. Table 1 lists the new size fractions. However, there is no update for the chemical profile from the current profile PM3281, in which the chemical speciation is unknown.

Table 1. PM3282 (Cotton Ginning) Size Fractions

<table>
<thead>
<tr>
<th>PM size</th>
<th>PM$_{2.5}$/TPM</th>
<th>PM$_{10}$/TPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight Fraction</td>
<td>0.0188</td>
<td>0.3255</td>
</tr>
</tbody>
</table>

2 Estimated Impacts of the Profile Update on the Emission Inventory

The new profile PM3282 will replace the current PM3281 for the categories associated with cotton ginning operations for all years (Table 2). CEPAM [3] inventory base year 2012 (California 2016 Ozone SIP Baseline Emission Projection, Version 1.02) was selected for estimating the impacts of the profile update. The 2012 statewide annual average TPM emissions of PM3282 related categories are 3.364 tons/day, 0.13% of the grand total statewide emissions (natural sources are excluded). The use of the new profile will cause a 72.0% decrease in the estimation of PM$_{2.5}$ emissions (Table 3).

Table 2. SCCs/EICs to be Associated with Cotton Ginning Operations

<table>
<thead>
<tr>
<th>EIC/SCC</th>
<th>NAMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>30200401</td>
<td>FOOD/AGRICULTURE AGRIC. SERVICES COTTON GINNING UNLOADING FAN</td>
</tr>
<tr>
<td>30200402</td>
<td>FOOD/AGRICULTURE AGRIC. SERVICES COTTON GINNING CLEANER</td>
</tr>
<tr>
<td>30200403</td>
<td>FOOD/AGRICULTURE AGRIC. SERVICES COTTON GINNING STICK/BURR MACHINE</td>
</tr>
</tbody>
</table>

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\(^1\) The references will be updated once the summary data of the study is published (by Janet Spencer).
Table 3. Emission changes resulted from PM profile update (2012)

<table>
<thead>
<tr>
<th>State Annual Ave. Emissions</th>
<th>Using Current PM3281 (tons/day)</th>
<th>Using New PM3282 (tons/day)</th>
<th>Change Emissions (tons/day)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{2.5}$</td>
<td>0.225</td>
<td>0.0632</td>
<td>-0.162</td>
<td>-72.0%</td>
</tr>
</tbody>
</table>

References: