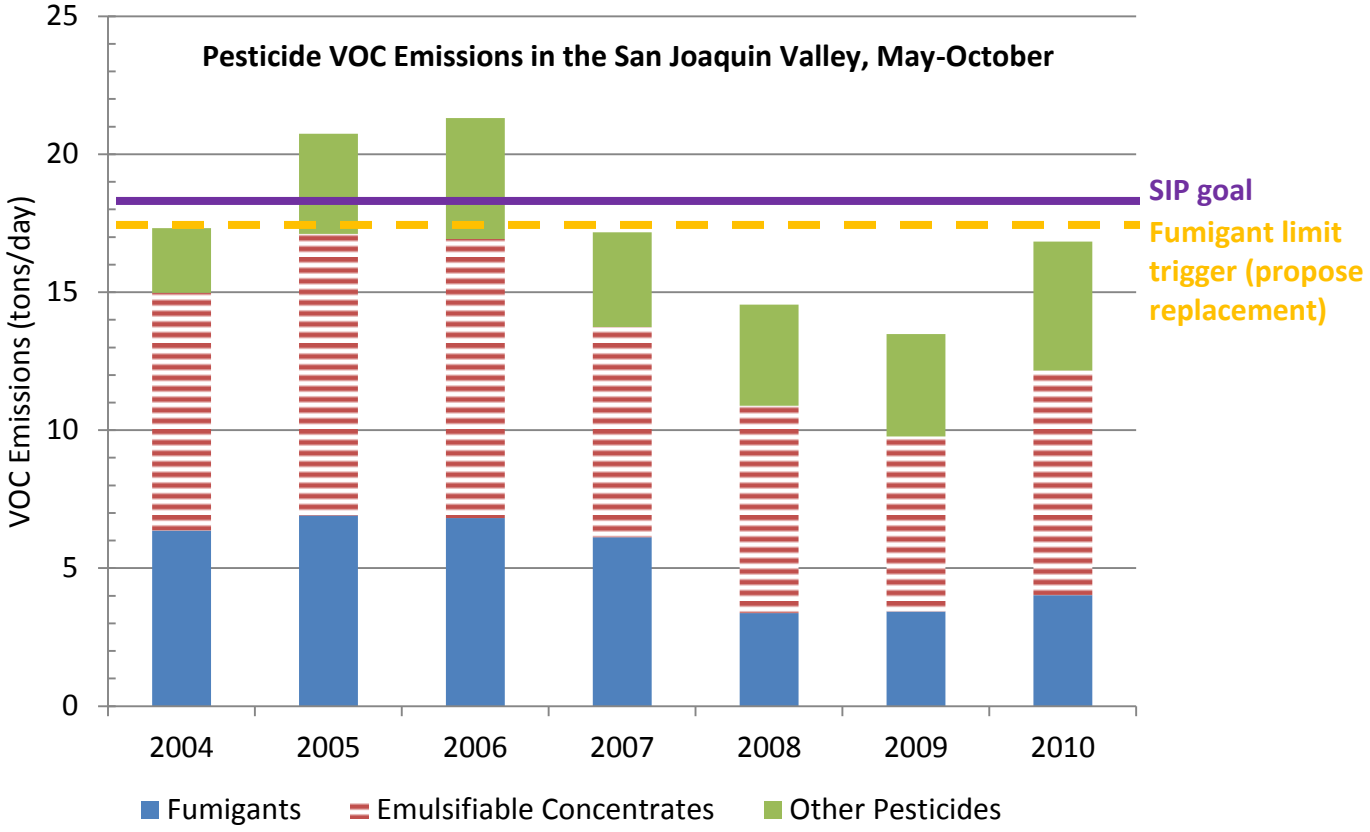
Department of Pesticide Regulation – Agricultural Pest Control Advisory Committee
Nonfumigant VOC regulations
February 14, 2012

Volatile organic compounds (VOCs) contribute to the formation of ozone. The State Implementation Plan (SIP) for the Clean Air Act requires DPR to achieve specific pesticide VOC emission levels and implement restrictions on nonfumigant pesticides by 2014.

The figure shows that fumigants and emulsifiable concentrate products contribute most pesticide VOC emissions in the San Joaquin Valley. Emissions decreased beginning in 2008 due to fumigant regulations, but increased in 2010. Pesticide VOC emissions may not comply with the SIP goal in 2011 and/or trigger a fumigant limit and allowance program.

DPR is drafting regulations to address VOC emissions from emulsifiable concentrates.



The proposed regulations will focus on products containing abamectin, chlorpyrifos, gibberellins, and oxyfluorfen. These products are consistently among the highest pesticide VOC contributors in the San Joaquin Valley and products with lower VOC content (emission potential, EP) are available. The table shows examples of liquid products with lower EPs and the comparable products with higher EPs.

The proposed regulations will include an EP threshold for each of the four active ingredients. DPR will designate products below the threshold as low-VOC and products above the threshold as high-VOC.

The proposed regulations will include sales and use restrictions for high-VOC products. Low-VOC products will have no restrictions.

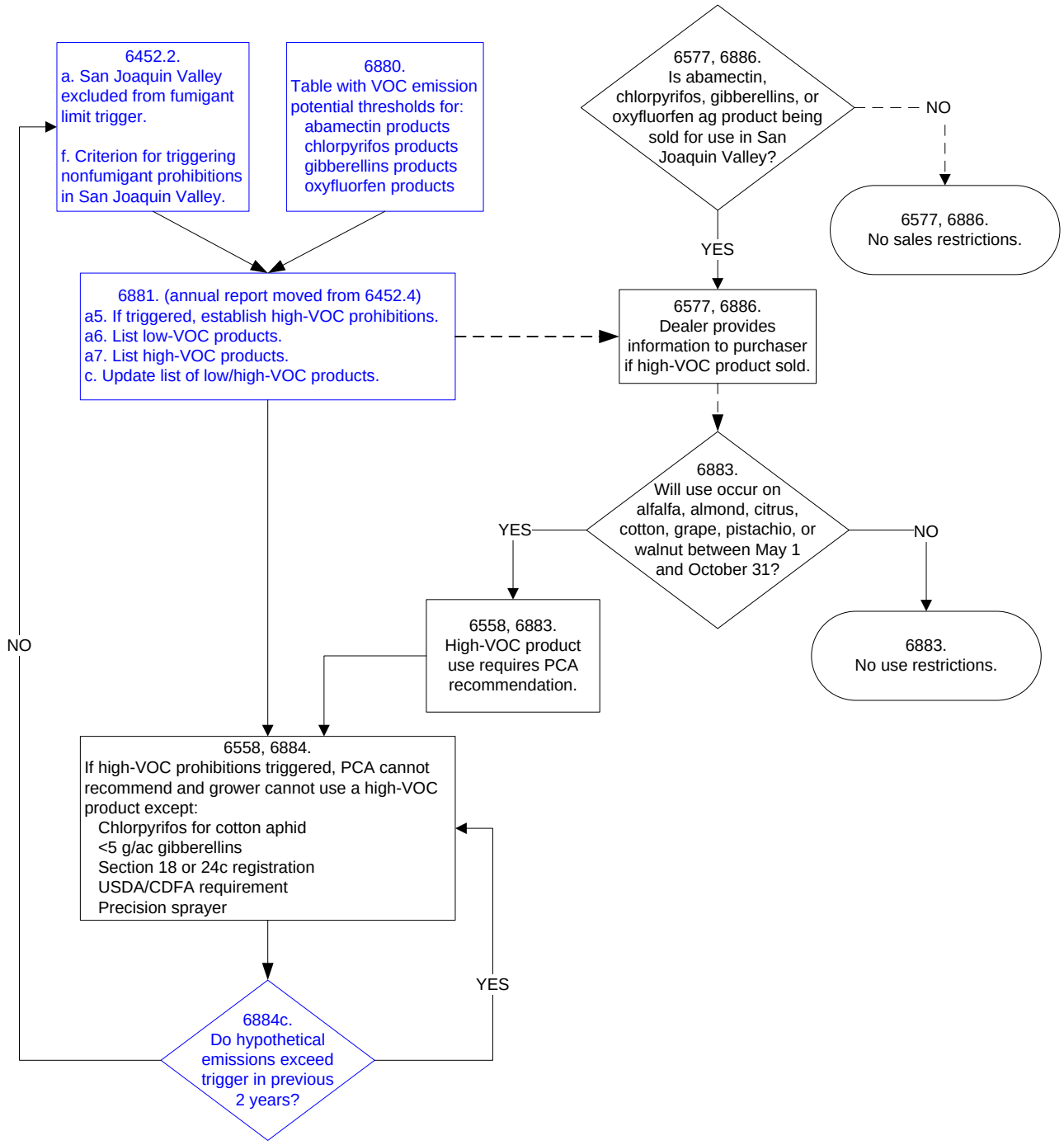
Active Ingredient	**Lower VOC Product**	**EP (%)**	**Comparable Higher VOC Product**	**EP (%)**	**EP Threshold (%)**
Abamectin	Agri-Mek SC	5.63	Agri-Mek 0.15 EC	55.10	35
Abamectin	Abba 0.15 ME	30.73	Abba 0.15 EC	62.60	
Chlorpyrifos	Lorsban Advanced	18.45	Lorsban 4E	50.00	25
Chlorpyrifos	Drexel Chlorpyrifos 4E-AG	18.20	Drexel Chlorpyrifos 4E-AG	52.90	
Gibberellins	Progibb 40% Water Soluble Granules*	3.70	Pro-Gibb 4%	94.13	25
Oxyfluorfen	Goaltender	8.28	Goal 2XL	62.30	15
Oxyfluorfen	Galigan Slapshot	3.84	Galigan 2E	66.15	

* Granular formulation

Draft Nonfumigant Volatile Organic Compound (VOC) Regulations
California Code of Regulations, Title 3, sections 6452.2, 6558, 6577, 6880-6886

DPR plans to notice proposed regulations for public comment in April 2012, and adopt final regulations by April 2013.

Sales and use restrictions pertain to pest control dealers, pest control advisers (PCAs), and growers for agricultural use of high-VOC products in the San Joaquin Valley. Low-VOC products have no restrictions. DPR responsibilities are shown in blue.



Draft Requirements for Pest Control Dealers (3 CCR sections 6577, 6886)
A pest control dealer selling an agricultural use product that meets all of the following criteria is required to provide specific information to the purchaser at the time of purchase or delivery.

- A high-VOC product containing abamectin, chlorpyrifos, gibberellins, or oxyfluorfen is being sold (lists of high-VOC and low-VOC products available from DPR).
- Use will occur in a San Joaquin Valley county, as indicated by the operator identification number.

If the criteria are met, the dealer must provide the information specified in the regulations to the purchaser, including the requirement for the operator of the property to obtain a written recommendation from a licensed agricultural pest control adviser (PCA) prior to use of a high-VOC product.

The dealer must indicate on the invoice that the information was provided to the purchaser.

Draft Requirements for PCAs (3 CCR sections 6558, 6883, 6884)
A PCA recommendation is required prior to use of a high-VOC product if the application meets all of the following criteria.

- A high-VOC product containing abamectin, chlorpyrifos, gibberellins, or oxyfluorfen will be used (lists of high-VOC and low-VOC products available from DPR).
- Use will occur in the San Joaquin Valley ozone nonattainment area (map available from DPR).
- Use will occur on one or more of the following crops: alfalfa, almond, citrus, cotton, grape, pistachio, or walnut.
- Use will occur between May 1 and October 31.

A PCA must determine if DPR has triggered use prohibitions for high-VOC products. If triggered, high-VOC applications that meet all of the criteria listed above are prohibited and cannot be recommended except for the following:

- Use of chlorpyrifos to control aphids on cotton.
- Use of gibberellins at an application rate of 5 grams active ingredient per acre, or less.
- Use for which the U.S. EPA has issued an emergency exemption from registration under Section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act.
- Uses registered as a Special Local Need under Section 24(c) of the Federal Insecticide, Fungicide, and Rodenticide Act.
- Applications made by or under the direction of the U.S. Department of Agriculture, the California Department of Food and Agriculture, or county agricultural commissioner to control, suppress or eradicate pests (e.g. quarantine uses).
- Applications using precision spray technology meeting the criteria of the California Office of the Natural Resources Conservation Service's Environmental Quality Incentives Program.

If DPR triggers use prohibitions, the prohibitions remain in effect for at least two years during the May 1 through October 31 period and until DPR determines in the annual report that emissions are unlikely to exceed the trigger level if the prohibitions are lifted.

A PCA must retain a recommendation for a high-VOC product for at least two years.

DPR's goal is to regulate the appropriate combination of products and crops that will reduce pesticide VOC emissions to less than 17.2 tons/day (trigger for fumigant limit) for the highest year. The table shows the estimated VOC emissions if the fumigant regulations and various nonfumigant restrictions had been in effect for the San Joaquin Valley during May-October 2006, the highest year. Highlighted values indicate scenarios that have emissions less than 17.2 tons/day.

Actual emissions in 2006 were 21.3 tons/day, but 2010 emissions were 16.8 tons/day. Additional pesticide VOC reductions are not needed at current emission levels.

The proposed regulations will replace the trigger for a fumigant limit with a trigger for high-VOC use prohibitions in the San Joaquin Valley. High-VOC use prohibitions will only go into effect if the trigger level is exceeded.

Scenario	**Estimated VOC Emissions (tons/day) with Fumigant Regulations and Nonfumigant Restrictions**			
	Top AI (Chlorpyrifos)	**Top 2 AIs (Previous+ Oxyfluorfen)**	**Top 3 AIs (Previous+ Gibberellins)**	**Top 4 AIs (Previous+ Abamectin)**
Top crop (almond)	18.1845	18.0201	17.8070	17.6940
Top 2 crops (previous+citrus)	17.8372	17.6667	17.2254	17.1026
Top 3 crops (previous+cotton)	17.4474	17.2212	16.7799	16.6115
Top 4 crops (previous+grape)	17.4005	17.1309	16.3833	16.2000
Top 5 crops (previous+walnut)	17.2439	16.9263	16.1787	15.9899
Top 6 crops (previous+alfalfa)	17.1461	16.8285	16.0809	15.8890
Top 7 crops (previous+right of way)	17.1461	16.7786	16.0310	15.8391
Top 8 crops (previous+pistachio)	17.1461	16.7385	15.9909	15.7990
Top 9 crops (previous+corn)	17.1064	16.6988	15.9512	15.7593
Top 10 crops (previous+cherry)	17.1057	16.6836	15.9189	15.7270
All crops	17.0623	16.6043	15.8365	15.6297