

FINAL STATEMENT OF REASONS AND PUBLIC REPORT
DEPARTMENT OF PESTICIDE REGULATION

Title 3. California Code of Regulations
Amend Sections 6447, 6447.2, and 6784
Pertaining to Methyl Bromide Field Fumigation

UPDATE OF THE INITIAL STATEMENT OF REASONS

As authorized by Government Code section 11346.9(d), the Department of Pesticide Regulation (DPR) incorporates by reference the Initial Statement of Reasons prepared for this rulemaking.

No changes were made to the proposed regulations nor are any changes necessary to the Initial Statement of Reasons following the 45-day public comment period.

The originally proposed regulatory action was noticed in the California Regulatory Notice Register on April 16, 2010. During the 45-day public comment period, DPR received comments on the proposed text. The comments are discussed under the heading “Summary and Response to Comments Received” of this Final Statement of Reasons.

DPR has amended Title 3, California Code of Regulations (3 CCR) sections 6447, 6447.2, and 6784. The pesticide regulatory program activities that will be affected by this regulatory action are those pertaining to restricted materials and worker safety. In summary, this action pertains to the use of methyl bromide when used to fumigate soil prior to the planting of agricultural crops and focuses on mitigating possible subchronic (intermediate) methyl bromide exposure hazards to the public and agricultural employees. The regulatory action revises the limits on the amount of methyl bromide that can be applied in any calendar month in any township; prohibits county agricultural commissioners (CACs) from using buffer zone sizes smaller and durations shorter than specified in the Methyl Bromide Field Fumigation Buffer Zone Determination document incorporated by reference; revises the maximum employee work hours in a 24-hour period while engaged in the injection process and during the restricted entry interval for various methods of applications; and makes a clarifying change to the description of the National Institute for Occupational Safety and Health (NIOSH)-certified respirator that must be used when required by employees involved in field fumigation.

PUBLIC HEARING

A public hearing was not scheduled or held.

SUMMARY AND RESPONSE TO COMMENTS RECEIVED DURING COMMENT PERIOD

Comments were received from the following: (1) Elizabeth Elwood Ponce, Lassen Canyon Nursery, Inc; (2) Hebe Bradley, Norcal Nursery, Inc.; (3) Mike Meuter, California Rural Legal Assistance, Inc; (4) William Thomas, Alliance of the Methyl Bromide Industry; (5) Charlie Goodman, California Department of Food and Agriculture (CDFA); (6) Michael S. Stanghellini, TriCal, Inc.; (7) Michael D. Nelson, Plant Sciences, Inc.; and (8) Louis Perotti.

Comment Number	Comment and Response	Commenter
1	<p>Fewer people should mean less potential hazard and this fact should have been taken into consideration when calculating the township caps. If it had been considered, Siskiyou County would not be measured with the same yard stick as Monterey, Ventura, or San Diego counties.</p> <p><i>Potential health hazards to field workers and bystanders are estimated as individual risk, not population risk. Irrespective of whether an individual resides in a sparsely or densely populated county, the health risk (that is, the probability of experiencing adverse health consequences) resulting from exposure to a given concentration of methyl bromide is the same.</i></p>	1, 7
2	<p>I don't believe the finding that the negative impact on nurserymen will be limited to only nine percent. Even if it is, nine percent of a nearly billion dollar industry is a lot. I especially don't believe the findings relating to cost savings for fruit growers. The fact that this regulation suggests that fruit growers will actually see a cost saving by converting to chloropicrin is shameful.</p> <p><i>Based on analysis of methyl bromide use during 2006-2009, the California Environmental Protection Agency's Agencywide Economic Analysis Unit (AEAU) estimated an average \$126,000/year reduction in net profits for four strawberry nursery stock producers in one Siskiyou County township. This reduction was a result of increased costs associated with switching from methyl bromide to 1,3-Dichloropropene (Telone) plus chloropicrin followed by dazomet, and translates to a nine percent reduction in net income. However, the AEAU suggested that nursery stock producers could offset their increased costs of production by increasing the cost of their plants (by about one percent) to strawberry growers. AEAU's analysis of the impact on strawberry growers was based on information and data from strawberry industry experts (2006 Strawberry Costs and Returns Study, University of California, Davis; California Strawberry Commission).</i></p> <p><i>The AEAU report also noted that the net dollar per acre cost of using chloropicrin is \$900/acre less expensive than the dollar per acre cost of using methyl bromide.</i></p>	1, 7

3	<p>Nurseries should be exempted from the new regulation capping the amount of methyl bromide that can be used.</p> <p><i>The appellate court in Fernandez v. DPR required DPR to adopt new regulations for subchronic exposure to methyl bromide, and provided a specific time frame for this work to be completed. The data indicate that methyl bromide exposure in nurseries can lead to potentially unacceptable exposure.</i></p>	1, 7
4	<p>Another option would be to stay implementation of this regulation pending an increase of the township cap on Telone and the registration of Midas at rates necessary to meet CDFA certification requirements.</p> <p><i>The appellate court in Fernandez v. DPR required DPR to adopt new regulations for subchronic exposure to methyl bromide, and provided a specific time frame for this work to be completed. Postponing our regulation development until a decision was made on registering methyl iodide or possibly increasing the township cap for Telone would place us in violation of the court order.</i></p>	1, 2, 7
5	<p>Consideration should be given to increasing the township cap on methyl bromide situations where operators use virtually impermeable film (VIF) or totally impermeable film (TIF).</p> <p><i>Current research does not conclusively indicate that VIF or TIF reduces methyl bromide emissions (see response to comment #41). Even if VIF and TIF reduce methyl bromide emissions, allowing the use of such tarps would require DPR to evaluate the exposure to persons cutting and removing tarps, or those who plant with tarps in place, to assure safe use. If that determination was made, and DPR allowed the use of VIF and TIF, the township cap could still not be increased because an unknown number of applications would use VIF or TIF. The proposed township cap is based on a correlation between ambient air concentrations and use levels, with the current mixture of fumigation methods. This correlation would change if an unknown number of VIF and TIF applications occur. Use of VIF or TIF would require additional ambient air monitoring to determine the revised correlation and township cap. These tasks (evaluation of exposure with the tarps, a regulation change to allow their use, a period of time to conduct additional ambient air monitoring after their use is allowed) cannot be accomplished by the court-ordered deadline for these amendments.</i></p>	1,7

6	<p>The township cap needs to be adjusted so that there is sufficient fumigant to treat the existing acreage in Siskiyou County in August and September.</p> <p><i>Based on 2008-2009 use data, one township in Siskiyou County would need to reduce methyl bromide use by 7,063 pounds in a single month, a two percent reduction from the 331,641 pounds used in that township for the entire year (2008-2009 average). It is likely that growers will change dates of application, change location, or implement other alternatives rather than suffer acreage loss.</i></p>	1, 2, 7
7	<p>Support the addition of the specific requirement that methyl bromide use in any specific township is limited to or capped at a certain number of pounds per month in order to reduce levels of subchronic exposure. This is clear and enforceable.</p> <p><i>DPR agrees.</i></p>	3
8	<p>We do not understand the basis for deleting the phrase "The Department in coordination with . . ." and that it should be retained in section 6447(h) because DPR has an obligation to assist the county agricultural commissioners (CACs) in enforcing all pesticide regulations, including township caps.</p> <p><i>Currently, section 6447(h) requires CACs to ensure that ambient air concentrations do not exceed nine9 parts per billion (ppb). Since CAC staff does not routinely monitor air concentrations, DPR is available to provide technical assistance to determine compliance. However, the revised wording will now require CACs to limit pounds of methyl bromide applied in each township. CACs will no longer need DPR's assistance to determine compliance.</i></p>	3
9	<p>In order to meet the obligation that the regulations must be based on the Office of Environmental Health Hazard Assessment's (OEHHA's) health-based recommendations, the monthly township cap would need to be set at a level at which the general population will be protected from subchronic exposures above 1 ppb (averaged over 24 hours), and female workers of child-bearing age will be protected from subchronic work time exposures above 4 ppb. This proposal falls short in capping use at a level where exposures are expected to exceed 5 ppb half of the time.</p> <p><i>The Court of Appeals decision in Fernandez v. DPR (San Francisco County Superior Court No. CPF-04-504781) included the statement, "... OEHHA is responsible for one of the many factors DPR must consider when it formulates the regulations." The health-based exposure recommendations that OEHHA developed for methyl bromide were one of several risk management criteria that DPR considered in establishing health protections for workers and bystanders.</i></p>	3

10	<p>We are concerned that the monthly township cap of 171,625 pounds will only protect the general public from subchronic exposures above the regulatory target goal of 5 ppb half the time, as stated in the January 21, 2010 Andrews and Verder-Carlos memo. This memo explains that the regression analysis used to calculate the monthly methyl bromide township cap was modified based on peer review of DPR's method by UC scientists resulting in a "steeper and more health protective" regression slope. The memo fails to elaborate that DPR changed the way it used the regression from a health protective approach using the 95th percentile, so that 95 percent of concentrations in a month would be expected to be below the target level to the much less protective 50th percentile.</p> <p><i>The rulemaking file contains a memorandum from Shifang Fan, Bruce Johnson, and Randy Segawa to Chuck Salocks, dated February 23, 2010, that provides a more detailed description of the statistical method used to calculate the township cap. This memorandum explains that a scientific peer review revealed some problems with DPR's original method to calculate the township cap. Due to the following data problems, 270,000 pounds per month was not the 95th percentile for a nine ppb target level: (1) residuals not normally distributed, (2) heterodasticity, and (3) spatial correlation between nearby monitoring sites. The original township cap provided an unknown level of protection. DPR was able to address some, but not all of these issues. Therefore, the level of protection cannot be determined for any township amount with the available data. The memorandum also explains that the proposed township cap of 171,625 is likely more protective than the 50th percentile due to the exclusion of monitoring data from Ventura.</i></p>	3
11	<p>An analysis provides the cost of complying with the township cap of 171,625 pounds per acre but no analysis that even attempts to justify why imposing township caps to reduce subchronic exposure to 5 ppb 95 percent of the time, or to the level of 2 ppb mentioned in the September 21, 2009 Risk Management Directive, or the 1 ppb and 4 ppb levels recommended by OEHHA, would not be feasible.</p> <p><i>OEHHA agreed to provide DPR recommendations on the health effects of subchronic exposure to methyl bromide, to serve as the basis for these regulations. OEHHA also agreed to allow DPR to make the actual risk management decision that would provide the parameters for the development of the regulations, and then to work collaboratively with DPR to implement DPR's risk management decision. The target levels within the range of levels agreed upon are unlikely to cause adverse health effects in exposed individuals, including sensitive subpopulations. The final selection of target levels was based on</i></p>	3

	<i>technology immediately available to mitigate these exposures, the feasibility and practicality of adopting such requirements, and the enforceability of the mitigation measures.</i>	
12	Support the proposed change which removes the CAC's discretion to approve smaller buffer zones than those set forth in the Methyl Bromide Field Fumigation Buffer Zone Determination. <i>DPR agrees.</i>	3
13	Concerned that the revised Buffer Zone Determination document still assigns Strip Fumigation, where alternating strips of a field are fumigated and tarped or bare, the same emission factor as flat field fumigations, where the entire field is tarped. <i>Comment not relevant to the proposed changes, and factually incorrect. DPR assumes that fields fumigated with tarp strips have the same emissions as an untarped field, not a completely tarped field.</i>	3
14	The maximum application rate of 400 pounds per acre has been retained for many application methods without any justification for why such a high application rate is required. <i>Comment not relevant to the proposed changes.</i>	3
15	Supports the proposed revision to section 6784(b)(2)(C) which makes it clear that the respiratory protection used must be recommended for use in atmospheres containing concentrations of 5 parts per million (ppm) or less methyl bromide. <i>DPR agrees.</i>	3
16	OEHHA has not concurred with the regulatory target levels selected by DPR, as the Denton memo of February 26, 2010 states only that the proposed regulatory amendments will implement measures designed to reach the regulatory target levels specified by DPR. <i>OEHHA agreed to provide DPR recommendations on the health effects of subchronic exposure to methyl bromide, to serve as the basis for these regulations. OEHHA also agreed to allow DPR to make the actual risk management decision that would provide the parameters for the development of the regulations, and then to work collaboratively with DPR to implement DPR's risk management decision (Allan Hirsch, OEHHA Chief Deputy Director, and Chris Reardon, DPR Chief Deputy Director, to Joan Denton, OEHHA Director, and Mary-Ann Warmerdam, DPR Director, July 31, 2009 memorandum, rulemaking file OEHHA Collaboration).</i>	3

17	<p>The work regulatory target level of 13 ppb which DPR has selected clearly violates the Judge's Order in <i>Fernandez v. DPR</i> that the regulations must be based on OEHHA's health-based recommendations because it is over 3 times higher than OEHHA's recommended limit of 4 ppb for a worker population which may contain women of child-bearing age and utilizes an intraspecies uncertainty factor of 3 rather than 10.</p> <p><i>The appellate court in Fernandez v. DPR found that DPR is not prohibited from enacting regulations that may result in higher levels of exposure to methyl bromide than recommended by OEHHA, and that OEHHA's recommendations are one factor DPR is to consider when it determines target levels. The current regulations that were at issue in the Fernandez case used 16 ppb as the regulatory target level based on DPR's own risk assessment peer reviewed by the National Research Council. The more health protective regulatory target level of 13 ppb upon which these proposed regulations are based considered the OEHHA recommendation, as well as other factors.</i></p>	3
18	<p>DPR has not included any analysis that even attempts to justify why imposing mitigation measures to reduce subchronic worker exposure to a level of 4 ppb would be infeasible or impractical, with or without requiring use of full-face respirators for those jobs where work hour limitations are imposed with use of half-mask respirators.</p> <p><i>When developing methods to mitigate worker exposure, engineering controls are the first choice, followed by administrative controls. Work hour limits are administrative controls. Personal protective equipment (PPE) is the last choice for mitigating workers' exposures. During the development of the current regulations, allowable work hours for persons without respiratory protection were calculated to range from 0.4 to 3 hours. Because these daily allowable work hours were considered to be impractical, DPR management made the decision to allow the use of half-face respirators. When the appellate court in Fernandez v. DPR required DPR to adopt new regulations for subchronic exposure to methyl bromide, the decision was made to reduce work hours rather than require more stringent PPE.</i></p>	3
19	<p>Full-face respirators, which provide a much greater level of protection, are not required for any tasks and no analysis is provided explaining why DPR has concluded that requiring full-face respirator use would be infeasible or impractical.</p> <p><i>For the exposure calculations, a default protection factor of 90 percent is applied for half-face respirators, and 98 percent for a full-face respirator. Although full-face respirators would have allowed an increase in work hours, they are prone to fogging. Therefore, DPR felt</i></p>	3

	<i>that the hazard to handlers was an important consideration in allowing half-face respirators with a decrease in work hours.</i>	
20	<p>DPR lowered the regulatory target level to OEHHA's suggested level of 5 ppb. This significant reduction in the target level was unnecessary because, in its review of the Newton study and DPR's original risk assessment, the National Academy of Sciences found DPR's assessment to be more than adequate to achieve the desired level of health protection. If appropriate health protection can be achieved through implementing the existing and proper assessment target levels, it would be arbitrary to reduce the levels even further to 5 ppb.</p> <p><i>The comment misstates the history of the review process. In 2000, when a Subcommittee of the National Research Council (NRC, which functions under the auspices of the National Academy of Sciences) conducted its review, DPR's risk assessment for methyl bromide was based in part on the results of the Newton (1994) study, an evaluation of the subchronic (six-week) toxicity of methyl bromide in dogs. At that time, DPR and OEHHA were in general agreement on the interpretation of the Newton study. Subsequently, a second six-week study of methyl bromide toxicity in dogs was conducted by Schaefer (2002), and DPR revised its risk assessment based on the results of this study (DPR, 2003). DPR concluded that the critical No Observed Adverse Effect Level (NOAEL) for subchronic exposure to methyl bromide should be revised to five ppm, in contrast to the estimated NOAEL of 0.5 ppm that had been used earlier. DPR's revised risk assessment received external scientific review but it was not reviewed by the NRC.</i></p> <p><i>The appellate court in Fernandez v. DPR required DPR to adopt new regulations for subchronic exposure to methyl bromide, and to consider OEHHA's recommendations when drafting these regulations. Consideration of OEHHA's recommendations resulted in the identification of more health protective regulatory target levels (five ppb for subchronic by-stander exposure and 13 ppb for subchronic occupational exposure) which are lower than those identified in DPR's risk assessment, which provided the basis for the original regulations.</i></p>	4
21	<p>It should be fully recognized that the court did not embrace the risk evaluation at all, and certainly not OEHHA's questionable position. They merely directed that the process must be "joint engaged" based on the Food and Agricultural Code.</p> <p><i>DPR considered OEHHA's recommendations and used them as one factor in setting the regulatory target levels, and worked closely with OEHHA to develop the regulations to implement those levels (Chris</i></p>	4

	<i>Reardon, DPR Chief Deputy Director, from Chuck Andrews, Associate Director, DPR and Marylou Verder-Carlos, Assistant Director, January 21, 2010 memorandum, rulemaking file).</i>	
22	<p>Simply limiting the amount of methyl bromide that can be applied in any township to 171,625 pounds is arbitrary and capricious because the environmental conditions in an individual township are going to vary from one to another. There is no need to limit the amount of methyl bromide applied in all high use townships if the protective levels can be achieved by implementing less severe mitigation measures.</p> <p><i>The township cap level of 171,625 pounds is not arbitrary or capricious. DPR determined the township cap using air monitoring data from several locations and years, and correlated the measured air concentrations with methyl bromide use levels. DPR is not aware of any other feasible mitigation measures that are less severe and can be implemented within the court-ordered deadline.</i></p>	4
23	<p>These regulations must be evaluated in harmony with other DPR controls facing growers. This regulatory notice and program alternative did not do so. DPR needs to also consider the regulatory programs of 1,3-D, metam, and chloropicrin which restrict their availability (and effectiveness) as replacement fumigants.</p> <p><i>The appellate court in Fernandez v. DPR required DPR to adopt new regulations for subchronic exposure to methyl bromide, and provided a specific time frame for this work to be completed. Postponing our regulation development until other regulatory programs are in place would place DPR in violation of the court order.</i></p>	4
24	<p>There is no risk associated with the existing regulation and no increase in protective levels achieved under the proposed amendment of eliminating the CACs discretion to make appropriate regulatory adjustments when local conditions may justify such actions.</p> <p><i>The revised regulations would prohibit CAC staff from using buffer zones that are smaller or of shorter duration than those specified in the <u>Methyl Bromide Field Fumigation Buffer Zone Determination</u> document. During our discussions with CAC staff, we were told that there were very few, if any, instances where the CAC would reduce the buffer zones or shorten their duration. The revised regulations still allow the CAC to increase buffer zones or lengthen their duration as local conditions dictate.</i></p>	4

25	<p>The proposed amendment to section 6784 is to mitigate the health effects to workers resulting from subchronic exposures to methyl bromide. A simple reduction in work hours will result in less potential exposure, but is unnecessary because it has not been established that at present there is any health risk. The one-size fits all approach which has been taken could potentially result in a 20 percent reduction in the number of hours a person may be able to work in a calendar month.</p> <p><i>The appellate court in Fernandez v. DPR required DPR to adopt new regulations for subchronic exposure to methyl bromide, and to consider OEHHA's recommendations when drafting these regulations. Consideration of OEHHA's recommendations resulted in the identification of regulatory target levels lower than those in the current regulations that had been based upon DPR's risk assessment. Work hours specified in the revised regulations were calculated using a revised regulatory target level of 13 ppb (24-hour time-weighted concentration) for agricultural employees. The revised target level of 13 ppb is within the range specified in DPR's September 21, 2009, risk management directive, which also summarizes the factors that were taken into consideration in developing this range.</i></p>	4
26	<p>A viable and flexible alternative is the use of impermeable tarps. This alternative would achieve the same level of safety DPR seeks in its proposed amendments, without requiring a significant reduction in methyl bromide use or a reduction in work hours.</p> <p><i>Although current research suggest that VIF and TIF reduce fumigant emissions, DPR does not have data that would allow us to evaluate exposure to persons cutting and removing tarps, or those who plant with tarps in place. Until we receive and evaluate these work exposure data, DPR cannot support the use of VIF or TIF.</i></p>	4
27	<p>There is additional field data available which demonstrates that the flux estimates used by DPR are not supported by actual field data.</p> <p><i>This comment is not relevant to the proposed changes, as DPR did not use flux data to determine the township caps.</i></p>	4
28	<p>The Court of Appeals decision in <i>Fernandez v. DPR</i>, 164 Cal App. 4th 1214, (San Francisco County Superior Court No. CPF-04-504781) required DPR to work jointly with OEHHA to develop risk characterizations. However, it was not a ruling by the Court that OEHHA's findings are more valid than those made by DPR in its original 1999 risk characterization.</p> <p><i>The appellate court in Fernandez v. DPR stated that DPR may not</i></p>	6

	<p><i>ignore OEHHA or its input during the drafting and development of the regulations. In this instance, consideration of OEHHA's recommendations resulted in proposed regulations that identify regulatory target levels lower than those in the current regulations that had been based upon DPR's risk assessment. In addition, DPR worked closely with OEHHA to develop the regulations that were keyed to this more health protective level.</i></p>	
29	<p>OEHHA's reference concentration (RfC) is ultra-conservative and its incorporation into the current regulations does not provide added safety. The inclusion of OEHHA's findings only serve to add additional and unnecessary burdens, as well as economic loss, to growers that are already subjected to the most restrictive regulations in the country.</p> <p><i>DPR is required to consider OEHHA's health-based recommendations in developing its regulation and it did so in this instance. OEHHA's RfC for subchronic exposure to methyl bromide was based on data from the Newton (1994) study. OEHHA's interpretation of the results of this study is consistent with that of the NRC Subcommittee's review (2000) as well as the opinion of DPR's external scientific reviewers. In calculating the RfC, OEHHA incorporated standard uncertainty factors that are routinely used in human health risk assessments.</i></p>	6
30	<p>The reduction in the township cap, which is unnecessary and not supported by any additional or new (since existing regulations have been in effect) scientific studies, will make it impossible for all growers to treat their ground with methyl bromide in the short period of time in which this activity needs to occur. The net effect of the proposed regulations will be to reduce the production of strawberries and other crops by approximately 40 percent in townships that already have difficulty meeting the existing cap of 270,000 pounds methyl bromide per month; where 40 percent is the difference between the proposed new township cap (171,625 pounds) and the existing cap (270,000 pounds). A 40 percent loss of strawberry and other crop production acreage would have devastating impacts on the growers in those affected townships. This must be considered by DPR prior to implementing these proposed regulations.</p> <p><i>The loss of acreage is misrepresented. No townships exceed the existing cap of 270,000 pounds. The highest township in 2008-2009 used an average of 225,610 pounds in the one month that exceeded the proposed township cap. This township would need to reduce use by 54,035 pounds to comply with the proposed township cap, a 12 percent reduction of the 438,579 pounds used in that township for the entire year (2008-2009 average). Based on 2008-2009 use data, one other township in Siskiyou County would need to reduce use by 7,063 pounds</i></p>	6

	<p><i>in a single month, a 2 percent reduction of the 331,641 pounds used in that township for the entire year (2008-2009 average). The total reduction of 61,098 (54,035 plus 7,063) pounds represents less than a two percent reduction of the 5,198,329 pounds used statewide for field fumigation during 2008. In addition, it's likely that growers will change fumigants, change dates of application, change location, or other alternatives rather than suffer acreage loss.</i></p>	
31	<p>Nurseries are subject to regional, national, and international phytosanitary requirements which may require the use of methyl bromide as the pre-plant treatment; the result will be a significant reduction in strawberry nursery plant production (up to 40 percent). A limited availability of strawberry nursery plants would further compromise California's strawberry industry.</p> <p><i>See response to comment #30. The highest use township in Siskiyou County is in the strawberry nursery region. This township would need to reduce use by two percent to comply with the proposed township cap. It's likely that growers will change dates of application, change location, or implement other alternatives rather than suffer acreage loss.</i></p>	6
32	<p>DPR/OEHHA proposed and concluded that growers can simply switch to other fumigants to make up for the acres lost to the new methyl bromide changes. This argument in our opinion is flawed. First, 1,3-D (Telone) and 1,3-D/Chloropicrin mixtures are also limited due to the existing township caps in place for 1,3-D. DPR/OEHHA does acknowledge this. However, this point is cast aside when DPR/OEHHA proposes that growers could not only make up the lost acres, but could actually save money, by switching to chloropicrin as a stand-alone fumigant. Perhaps in some cases this is true but, unfortunately, chloropicrin alone, in most cases, is not a complete replacement for methyl bromide.</p> <p><i>Switching to an alternative fumigant is one of several field management options that growers may choose to adopt, depending on their specific circumstances. Neither DPR nor OEHHA are recommending that growers should choose this option. Possible use of chloropicrin as an alternative for methyl bromide was based on consultation with the University of California. Chloropicrin is not intended to be a complete replacement for methyl bromide. It only needs to replace 12 percent of the acreage in the most affected township and less than two percent of the acreage statewide.</i></p>	6

33	<p>Chloropicrin is currently in reevaluation at DPR and it is likely that additional mitigation measures for chloropicrin will be required, limiting its utility as a stand-alone replacement for methyl bromide at the necessary rates. The DPR/OEHHA assurance that growers can simply shift to straight chloropicrin is misleading.</p> <p><i>Using chloropicrin as an alternative for methyl bromide is not a DPR/OEHHA recommendation, but this option was evaluated during the course of consultation with the University of California. Chloropicrin is not intended to be a complete replacement for methyl bromide. As noted in the response to comment #31, other management options are available to growers to compensate for restrictions on the use of methyl bromide.</i></p> <p><i>It is true that chloropicrin, along with all other soil fumigants, will likely have additional mitigation measures added at some future time. DPR does not know what those measures will be, or when they will take effect. The economic analysis was based on the current status of chloropicrin. Postponing our regulation development until other mitigation measures for chloropicrin are in place would not allow us to comply with the court order.</i></p>	6
34	<p>A switch from methyl bromide to a 1,3-D/Chloropicrin mixture would affect buffer zones in that a 235 lbs/acre application of methyl bromide to a 10-acre field or smaller under coastal conditions (almost all strawberry production areas) is subject to a 60-foot buffer zone. In contrast, a 1,3-D/Pic application to the same field would incur a 300-foot buffer zone, which is the DPR static buffer zone for any field to be treated more than once every three years with 1,3-D. Although the U.S. Environmental Protection Agency has subsequently reduced the national buffer zone for 1,3-D to be 100-feet for repeatedly treated fields for all application methods, DPR has unfortunately only enacted this change for drip-applied 1,3-D. Not all fields can be successfully treated with drip applications, and shank applied 1,3-D is still subject to the 300-foot static buffer zone in California.</p> <p><i>Loss of acreage under this scenario is speculative, and unlikely to occur. Growers would lose acreage only if the following combination of events occurs: (1) a field is in a location that complies with a 60-foot buffer zone, but not a 300-foot buffer zone; (2) the field is located in one of the two townships that need to reduce use to comply with the proposed township cap; (3) the field is fumigated in the one month that might exceed the township cap; (4) the only alternative fumigant is 1,3-D; and (5) the 1,3-D cannot be applied by drip irrigation. This scenario is unlikely to occur because one percent of the townships with methyl bromide use in 2008 need to reduce use to comply with the proposed</i></p>	6

	<i>township cap; only 1 of 12 months in a year exceed the cap; chloropicrin is a viable alternative in most cases; and 95 percent of the 1,3-D used for strawberries in 2008 was applied using drip irrigation.</i>	
35	<p>The reduction in work hour limits will make it difficult to adjust for the small periods of down-time during applications, such as when minor repairs or field adjustments of tool bar implements are needed. The reduction in these work hour limits is unnecessary, as it is based on an ultra-conservative risk assessment that does not add any safety. The current regulations are already the most restrictive and safe for workers in the country.</p> <p><i>The appellate court in Fernandez v. DPR required DPR to adopt new regulations for subchronic exposure to methyl bromide, and to consider OEHHA's recommendations when drafting these regulations. Consideration of OEHHA's recommendations resulted in the identification of more health protective regulatory target levels lower than those in the current regulations that had been based upon DPR's risk assessment. The shorter work hours are a consequence of using a lower regulatory target level to protect workers.</i></p>	6
36	<p>Limiting the discretion of CACs to modify buffer zones based on local conditions is unnecessary and uncalled for. On rare occasions however, local conditions may dictate that a smaller buffer zone is sufficient to ensure human and environmental safety. There is no indication in the record that CACs have abused this discretion.</p> <p><i>The Superior Court in Fernandez v. DPR found that the regulation allowing the CACs to approve a buffer zone different than calculated using the referenced guidance document provided the approved buffer zone assured equal or less exposure on the basis of other information lacked clarity. The proposed amendment provides clarity by requiring that buffer zones be no less than required by the guidance document. During our discussions with CAC staff, we were told that there were very few, if any, instances where the CAC would reduce the buffer zones.</i></p>	6
37	<p>The analytical method for extracting and analyzing methyl bromide from the air monitoring sorbent tubes was updated and refined by the CDFA in late spring 2009, immediately prior to this study. Typical extraction efficiencies from the revised method were 90-100+ percent in this flux study. This is important, as in previous years DPR policy applied an extraction efficiency value of 50 percent to methyl bromide field data based on DPR lab and field recovery results from an older analytical study (Beirmann and Barry 1999). The net result of this policy was that all field level concentrations determined in the analyses were</p>	6

	<p>automatically doubled in an attempt to correct for low extraction efficiency. The doubling of the methyl bromide analytical data resulted in exaggerated estimations of methyl bromide peak emissions; as evidenced by the fact that this doubling procedure often resulted in impossible total mass loss estimates that exceeded the actual amount of methyl bromide that was applied. In other words, due to this doubling procedure, DPR significantly overestimated the amount of methyl bromide lost to the atmosphere. We submit that the existing and proposed regulations are therefore based, in part, on exposure scenarios that are physically impossible to achieve; which is yet another highly conservative approach to developing these regulations.</p> <p><i>The proposed township cap is not based on flux data or air monitoring that used charcoal tubes. The proposed township cap is based on ambient air monitoring that measured concentrations using stainless steel canisters. DPR made no recovery adjustment for the canister data.</i></p>	
38	<p>Based on the improved analytical methodology (mentioned above and cited at the end of this letter), it is no longer defensible for DPR to maintain a policy of doubling the methyl bromide field emissions to account for low extraction efficiency. New buffer zone tables should be generated by DPR for each of the application scenarios evaluated in the new flux study: (1) tarped (polyethylene) shallow broadcast application method; (2) tarped shallow broadcast under VaporSafe™ (the EVAL-resin barrier film; also called “TIF” or “Totally Impermeable Film”); (3) tarped shallow broadcast under VaporSafe™ in combination with a potassium thiosulfate soil spray; (4) tarped deep strip applications under VaporSafe™; and (5) tarped deep broadcast applications under VaporSafe™.</p> <p><i>Adding new fumigation methods and buffer zone sizes are outside the scope of the proposed regulation. In addition, as described in the responses to comments #5 and #39 the available data are insufficient to allow the fumigation methods suggested.</i></p> <p><i>Moreover, DPR disagrees that its recovery adjustment of charcoal tube data exaggerates flux estimates. While DPR changed the type of charcoal tubes for the Wasco 2009 study, the “true” recovery may or may not have changed from earlier studies. DPR does not use the laboratory liquid spikes to adjust methyl bromide charcoal tube data because they are inconsistent with more representative data and do not reflect the true method performance. DPR adjusts methyl bromide charcoal tube data based on earlier study (Biermann and Barry 1999) that used an air spiking technique instead of a liquid spiking technique. This adjustment does not result in mass losses exceeding the amount applied for any of the monitoring studies.</i></p>	6

39	<p>These data further make it appropriate for DPR to lift the ban on using “VIF” type tarps for methyl bromide applications in California. These low-permeability tarps are currently not allowed because it had been assumed, based on limited-scale data that these types of tarps might lead to elevated worker (tarp cutter) exposures. These new field-scale emissions data clearly demonstrate that, on the contrary, there is no large spike at tarp cutting when the Good Agricultural Practices are followed.</p> <p><i>DPR has not yet completed its review of these data. However, based on a preliminary evaluation DPR disagrees with these comments. For the most common fumigation method used in the affected townships (shallow shank injection with a tarp to a flat field), emissions at tarp cutting appear to be several times higher for the VIF tarp compared to the standard tarp. Moreover, emissions at tarp cutting for VIF are comparable to peak emissions during the first two days.</i></p>	6
40	<p>The new data on methyl bromide emissions from the VaporSafe™ covered fields should also be integrated into a refined approach for setting work-hour limits, as less methyl bromide is able to permeate the TIF during the application process.</p> <p><i>See response to comment #5.</i></p>	6
41	<p>Specialty tarps, such as the EVAL barrier resin film evaluated in this study, also significantly reduced total emissions of methyl bromide and chloropicrin. Accordingly, the township cap procedure should likewise incorporate the use of such films.</p> <p><i>DPR has not yet completed its review of these data. However, based on a preliminary evaluation, DPR disagrees with these comments. For the most common fumigation method used in the affected townships (shallow shank injection with a tarp to a flat field), total emissions for EVAL VIF tarp were 45.5 percent of the amount applied. These emissions are comparable to the total emissions measured for fumigations using standard tarps in other studies (average 48 percent of the amount applied from 13 studies).</i></p>	6
42	<p>These new data are in the possession of DPR and therefore should be incorporated into these proposed regulations and the existing VOC regulations.</p> <p><i>See responses to comments #5 and #39. Postponing our regulation development until tarp emissions data can be evaluated would not allow us to comply with the court order.</i></p>	6
43	<p>CDFA commented that the AEAU profit adjustment method only works</p>	5

	<p>in the (hypothetical) extreme case where a grower could produce a crop at zero cost, and their impact calculations do not account for the full range of estimated yield losses (up to 10 percent) that may result under the new regulation.</p> <p><i>AEAU collected information and data used in its calculations from strawberry industry experts. AEAU notes that its analysis for a two percent loss is directionally the same (in agreement with CDFAs analysis). In the judgment of AEAU's staff, a ten percent per year yield loss is outside of the range of potential impacts that would occur to strawberry producers.</i></p>	
44	<p>The approval of methyl bromide is nothing short of outrageous.</p> <p><i>No response necessary.</i></p>	8

MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS

DPR has determined that the proposed regulatory action does not impose a mandate on local agencies or school districts requiring reimbursement by the State pursuant to Part 7 (commencing with section 17500) of Division 4 of the Government Code because the regulatory action does not constitute a “new program or higher level of service of an existing program” within the meaning of section 6 of Article XIII B of the California Constitution. DPR has also determined that no nondiscretionary costs or savings to local agencies or school districts will result from this regulatory action.

ALTERNATIVES DETERMINATION

The Director has determined that no alternative considered by DPR would be more effective in carrying out the purpose for which this regulation is proposed, or would be as effective and less burdensome to affected private persons or businesses than the proposed regulatory change.

POSTING REQUIREMENT

3 CCR, section 6110, states in part that, “The public report shall be posted on the official bulletin boards of the Department, and of each commissioner's office, and in each District office of the DPR [Division of Pest Management, Environmental Protection and Worker Safety] for 45 days.” DPR has posted its Initial Statement of Reasons and Public Report on its official bulletin board, which consists of the Department's Internet Home Page <<http://www.cdpr.ca.gov>>. In addition, copies were provided to the offices listed above for posting.