45-DAY COMMENTS

General

1	The only guaranteed way to reduce smog-forming emissions from pesticides and to protect public health is to reduce use of these pesticides. DPR should to limit the use of smog-forming pesticides. Safe and economically viable alternatives to smog-forming pesticides exist. The state needs to prioritize these alternatives in order to protect the health of the state's residents. ***Smog-forming emissions from pesticides can be reduced using two primary techniques: changing application methods and reducing use. DPR's proposed regulations use both of these techniques, including an emission limit for fumigant pesticides. DPR encourages adoption of reduced-risk pest management by providing grants and education on pesticide alternatives.***	Binder 2; 2, 3, 8
2	The regulations are unenforceable: who will be checking on the ground to ensure that all applications are done according to the rules in the regulations? ***Both DPR and the county agricultural commissioners (CACs) will be conducting field inspections to ensure that fumigants are being applied according to the restricted material permit conditions that define the specific application method to be used in compliance with the regulations.*** ***Since all fumigants are designated restricted materials, growers must submit a notice of intent to the CAC for all proposed fumigant applications. The CACs are required to conduct pre-site evaluations on a minimum of five percent of the NOIs received in their office to meet CEQA functional equivalency. If any issue is identified during the pre-site evaluation, the application is not allowed to proceed until the issue is corrected.*** ***Compliance monitoring is one of three core enforcement program components. The CACs will be instructed to develop an inspection strategy that focuses on field fumigation applications in the coming year(s). This inspection strategy will become a key element of their compliance monitoring component in their approved annual work plan.*** ***DPR will conduct independent inspections of field fumigation applications throughout the year to observe and document compliance with the approved fumigation methods. In addition, DPR will conduct oversight inspections with the CACs on field fumigation applications. Inspection results will be tracked and analyzed to determine the effectiveness of the new fumigant regulations. In addition, DPR will use the data to make modifications to the regulations or application methods as deemed necessary to meet the volatile organic compound (VOC) emission reduction targets.***	Binder 2; 2, 6, 8, T5p
3	The fumigant pesticides that contribute to smog have also been responsible for many mass farmworker and community pesticide poisonings. Request that DPR put in place strong provisions to reduce use of these pesticides.	Binder 2; 2, 3, 8

	DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides. While the proposed regulations are not designed to mitigate health impacts, they will provide an increased margin of safety for exposure. Complementary regulatory requirements and oversight by three regulatory agencies provide a comprehensive system for protecting people from toxic exposure to fumigants. The U.S. Environmental Protection Agency specifies nationwide restrictions through label requirements. Fumigant labels specify legally binding instructions and restrictions pertaining to storage, disposal, first aid, air concentration limits, methods of application, worker protection, and environmental protection. In addition to the label requirements, the Department develops and implements more stringent statewide requirements. DPR's statewide requirements for methyl bromide include buffer zones, air concentration or use limits, application method restrictions, and worker protection provisions. All of these fumigants are "restricted materials" in California. As restricted materials, they require a permit issued by the CAC prior to use and can only be applied under the supervision of a certified applicator. State law requires CACs to evaluate local conditions prior to issuing restricted materials permits. Most if not all counties include additional restrictions on the permits for chloropicrin, metam-sodium, and metam-potassium. DPR will shortly issue statewide guidance for restricted materials permits for MITC to CACs that will further reduce exposures. The Department is working on evaluating and developing exposure controls for chloropicrin.	
4	All smog-forming pesticides need to be banned. Smog-forming pesticides cause air pollution and poison communities, yet pesticide polluters have been getting a free pass from air quality regulations. As a result of a lawsuit, DPR has drafted regulations that they claim will reduce pesticide smog emissions by 20 percent, but this measure is too weak to protect public health and achieve the required reductions. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year. DPR's analysis of all available data indicates the proposed regulations will achieve this reduction, and the emission limits included in the regulations ensure that the reductions will be achieved.***	4
5	Eliminate smog-forming pesticides now. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year.***	5
6	The regulations proposed do not accomplish much, but you can stop the pollution now by writing and enforcing a ban on broadcasting broad-spectrum pesticides and fumigants. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year.***	7
7	The regulations define a volatile organic compound (VOC) as "any compound of carbon... that participates in atmospheric reactions." It was my understanding that these regulations are aimed at reactions that produce ground level ozone. If this is the case, then the phrase "atmospheric reactions" is too inclusive, and should only apply to reactions that promote the production of ground ozone. There may be "atmospheric reactions" from VOCs that do not produce ground ozone, are not	14

	harmful and possibly even beneficial. Request that the definition be re-worded to reflect this specific goal of these regulations. As evidence is gathered showing that any particular VOC is not involved in this reaction, then there should be a list (and a method for amending the list periodically) in these regulations exempting these compounds from these regulations. These regulations should not be used as a backhanded way to regulate the use of any pesticide other than for their ozone reactivity. ***DPR proposed this regulation to comply with the SIP and court order enforcing provisions of the federal Clean Air Act. The proposed regulations adopt the federal definition for VOC. The immediate purpose of these regulations is to reduce VOC emissions from pesticide use. DPR may, and would like to, consider the reactivity of various pesticides when designing VOC control measures, but must do so within the bounds of its requirement under federal law to obtain the necessary mass-based reductions in VOC emissions. When the 1994 Pesticide Plan, that the court order enforces, was included in the SIP, neither the State nor U.S. EPA appreciated that a significant fraction of the VOC emission that the Plan would control do not appreciably contribute to ozone. Unless the SIP is amended to account for this information, DPR is limited in how it can apply this knowledge.***	
8	Future strawberry farmers are in real jeopardy. Leave the present standard in place. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year.***	20
9	The heavy restriction of fumigation or its elimination will force growers into a minimum two-year fallow to allow the old roots to die and eliminate the "root rejection component" of the replant syndrome. Nematode and Phyloxera problems are another problem, particularly nematodes. Nematodes as you know can encyst themselves in forms that can last for years in soils until a suitable host is planted. This situation could lock us out of certain soil types and areas potentially for years. ***DPR's proposed regulations restrict application methods only within the San Joaquin Valley, Southeast Desert, and Ventura nonattainment areas (NAAs) during May-October. In addition, the regulations provide two primary alternatives for fumigation of orchards within the NAAs during May-October. One is the current fumigation technique using 1,3-D. The second is a methyl bromide fumigation using a tarpaulin. Growers with orchards outside the three NAAs are not affected. Growers within the three NAAs have three viable alternatives: the current 1,3-D fumigation method, a methyl bromide fumigation that uses a tarpaulin, or shifting fumigations outside May-October.***	22
10	Developing an accurate baseline: Since 1991, a significant body of scientific evidence has been developed that documents that different application technologies (i.e., methods) result in different rates of emission; that fumigants naturally degrade by biodegradation in the soil and photosynthesis on the surface; and that all VOCs are not reactive. We support the proposed regulations incorporation of these scientific findings. More specifically, we support DPR's inclusion of reactivity in the method used to calculate emissions from emulsified concentrates and application method emission factors to calculate emissions from fumigants. We request that DPR applies these sound scientific findings equally to both emulsified concentrates and fumigants. Until this is done, the baseline will continue to exaggerate the reactive organic gas emissions	25

	from pesticides. ***See response to comment #7.***	
11	We are concerned that the regulations do not recognize the unique properties of each fumigant under review and that certain application techniques have been reduced or eliminated, even some techniques which are known to have lower emission potential over other practices. In addition, as different products are used in different ways in various cropping systems, we ask that the regulations are reflective of this and are fairly administered. ***DPR is relying on several dozen field studies to determine the emissions associated with the different application methods and using surrogate field data where necessary. DPR considered other studies prior to its initial estimates, and reconsidered them after receiving comments. The current set of studies used in this analysis is the database available. DPR staff has included in this analysis those studies that have been reviewed and accepted as of sufficient quality to provide reliable results. The included studies were conducted at a variety of locations under a variety of meteorological conditions and over the entire year. The variety of locations, application methods, and meteorological conditions are varied in large part due to the diverse nature of agriculture in California.***	25
12	The proposed rulemaking will increase costs in the field dramatically upwards in the millions and will drastically effect production. We have worked hard to meet DPR's standards and feel we should not be punished because of specific areas where emission control may need further work. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year in the five NAAs. DPR has modified the regulations. Those areas that need the most reductions are impacted the most by the regulations (San Joaquin Valley, Southeast Desert, and Ventura NAAs), those that do not currently need reductions are impacted less (Sacramento Metro and South Coast NAAs), and those areas not in the five NAAs are impacted the least.***	27
13	A reduction in agricultural production in California because of these regulations will increase reliance on imported fruits, vegetables and produce. This should concern us in light of the recent reports of food contamination problems associated with imported food. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year in the five NAAs.***	28
14	On an interim basis, the goal of the regulation should be the development and implementation of best management practices to reduce the amount of fumigant use. On a longer-term basis, DPR should pursue pesticide reformulation as a means of pollution prevention to reduce VOC, as well as potential toxic emissions. ***DPR's proposed regulations limit application methods to those with the lease emissions in the San Joaquin Valley, Southeast Desert, and Ventura NAAs that still need pesticide VOC reductions. In 2005, DPR initiated a regulatory action***	29

	to require reformulation of certain pesticide products to reduce the VOC content.	
15	Since the proposed rule is expected to be part of the SIP, we urge you to ensure that the proposed regulation will meet the USEPA's SIP approvability requirements; that is that the emission reductions be real, quantifiable, permanent, and enforceable. Staff understands that the proposed regulation takes potential new pesticides into account relative to deriving allocations; however, to the extent that these pesticides can be mandated, reductions for year around protection outside of the allocation approach can benefit all Californians. ***DPR believes that the proposed regulation meets all of the SIP approvability requirements. Additionally, the court order requires DPR to submit the regulation to U.S. EPA for approval. The regulations are designed to reduce VOC emissions by 20 percent during the peak ozone season.***	29
16	We can support a progressive phase-in of several of the concepts with the proposed regulatory package and that DPR is only required to complete the regulation by January 1, 2008. It seems apparent to us that DPR has the freedom to propose a phased-in approach to achieve the court mandate. This would allow the applicator businesses to work more closely with DPR over the next year to better refine how reduced emission application methods and sealing techniques may be included reasonable into workable field practices. ***DPR disagrees that it is apparent that DPR can pursue a phased-in approach under the court order. However, DPR had proposed Option 1 in the regulation to allow a phase-in for the Ventura NAA and sought the Court's permission to adopt that option. On December 12, 2007, the Court ruled that the regulations must require all the reduction in 2008.***	30
17	In its original 1991 inventory, DPR assumed that for every pound of fumigant used, one pound was released as a VOC emission. Consequently DPR's 1991 estimate of VOC emissions from the use of pesticides in agriculture is exaggerated, and the 1994 SIP and corresponding reduction goals mandated by the Judge's order is obsolete. DPR has recognized that the assumption of 100 percent applied does not equal 100 percent emitted. DPR should refer to the better modeling methods that are available to determine the correct emission factors. ***DPR has adjusted the baseline and the subsequent emission inventories to account for fumigant application methods. This reduces the baseline used to compute percentage reductions and allows any reductions resulting from changing application methods to be accounted for. See response to comment #11.***	31
18	The mass emissions approach used as the basis of this regulation presents not evidence linking fumigant emissions to ozone pollution. In 2003, US EPA sent a letter to ARB stating that methyl bromide is not a VOC. Nevertheless, methyl bromide is still listed as a VOC. ***See response to comment #7.***	31
19	The 1991 baseline inventory incorrectly represents the fumigant emissions picture and currently underestimates reductions of emissions, especially in the San Joaquin Valley.	35, 45, T10, T12, T14p, T16p,

	1990/ 91 is not a "biased" baseline. 1990 was established as the baseline year after extensive public process culminating in U.S. EPA's approval of the pesticide element of the SIP in 1997. The court established 1991 as the baseline year using it as a surrogate for a "back cast" computation process he believed the SIP required. 1990 is assumed to be an appropriate baseline for the 1994 SIP measures because it represents what emission levels that were actually being achieved prior to any additional controls being imposed under the Clean Air Act Amendments (CAAA) of 1990. The SIP, and the CAAA of 1990, was meant to advance the State beyond what was already being achieved (in the case of pesticide VOC emissions, by 20 percent). If the industry believed 1990 was an atypical year that did not represent overall pesticide VOC emissions prior to CAAA controls, because of some extraordinary, temporary circumstance, it should have raised that issue during the SIP planning process in the early 1990's. Moreover, it is unclear if 1990 was an atypical year for overall pesticide VOC emissions. At this point the SIP controls the baseline year.	
20	The federal court order requires DPR to address VOCs within the NAAs as defined by USEPA. DPR currently proposes to implement portions of the regulations statewide for "uniformity and enforcement" and states that it would be "difficult" to have the regulations apply less than statewide. However, has DPR considered that this "one size fits all" approach will unnecessarily impose complex regulatory burdens and significant economic impacts on growers outside of the NAAs that have already met and are in compliance with federal air quality standards as determined by USEPA? ***DPR has revised the regulations so that all but one of the requirements only applies within the NAAs. See response to comment #12.***	35
21	DPR has pointed out this is the most far-reaching pesticide regulations DPR has proposed in a very long time. It is extremely troubling that DPR has not had the time to thoroughly vet all of the science and policy implications as it would under their normal administrative process for such a complex regulation. ***Through the rulemaking process, particularly evaluating the public comments received, DPR has thoroughly vetted the science and policy implications of the proposed regulation. DPR has updated its analysis of the available scientific data (September 29, 2007 memo by Barry, Spurlock, and Segawa) and made key revisions to the regulations based on the comments.***	38
22	DPR has stated they believe that if all soil fumigant users used the lowest emitting methods all users could continue to use soil fumigants. We believe this statement is woefully naïve. It does not account for the major increase in cost most of the lower emission methods incur. ***Independent economic analyses by the Air Resources Board and California Department of Food and Agriculture indicate the increased cost will still allow fumigations to occur.***	38
23	There is no justification for parts of the proposed regulations to apply statewide when the regulation is in response to the 1994 SIP established for certain parts of the state in noncompliance for ozone. Only the NAAs should be included in any part of the regulation.	38, T19

	DPR has revised the regulations so that all but one of the requirements only applies within the NAAs.	
24	DPR needs to ensure that the language contains enough flexibility to easily allow for changes in requirements should additional information change the underlying assumptions of the role that soil fumigants play in the VOC equation. Otherwise, we all are stuck with rules that may not make sense in the face of newer science. ***The proposed regulations include provisions to add new, reduced-emission fumigation methods on an interim basis. Any new data can be incorporated into DPR's annual emissions report.***	38
25	We support DPR's designation of sodium tetrathiocarbonate as a restricted use pesticide. ***No response needed.***	46
26	These regulations are not enforceable as written. We request that DPR reevaluate its enforcement mechanisms with regard to 1) public availability of the data, 2) the emissions cap for each NAA and 3) the means by which emissions tracking is implemented. ***DPR has revised the regulations to shift responsibility for the emissions limits and emission tracking from the registrants to DPR and the CACs. The Director shall issue and make available to the public an annual emissions inventory report that will establish any fumigant limits for the upcoming year, and emission allowances. Allowances will be enforced through permit conditions.***	46
27	Golf courses are commonly found in urban settings where VOCs more readily react with NOX gases to form ozone. The greatest percentage of the population is in these same urban settings. Yet, golf courses are excluded from the proposed regulations. What is the reason that golf sites excluded from being subject to the field fumigation requirements in section 6447? ***Fumigation of golf courses accounts for a negligible amount of VOC emissions, and use specialized methods of fumigation. Their inclusions in the regulations would greatly increase the complexity, with negligible reduction of VOC emissions.***	34
28	Proposed section 6447.1 requires the operator of the property to notify properties within the 300 foot perimeter seven days prior to filing the submission of the notice of intent (NOI). This assumes the CAC will approve the work site plan and this notification is premature, and would give cause for concern with property owners if the application was not approved. Are DPR and the CAC prepared to address the alarmists with every NOI? ***These are comments on existing regulation and are not relevant to the proposed changes.***	34
29	Section 6784 needs to be re-evaluated based on the final decision on which method to include--nontarp deep broadcast section needs to be maintained. ***DPR has revised the proposed regulations to add back the fumigation methods it originally proposed to delete from***	38

	section 6784.	
30	It's unclear why the language in section 6784 "in combination with chloropicrin or any other pesticide or warning agent" is struck. ***This revision was made to make it consistent with section 6447, however section 6784 applies to methyl bromide whether used singly or in combination with any other fumigant.***	38
31	The proposed regulations fail to provide objective supporting data sufficient to establish that they will achieve their stated goals. To be successful, the regulations must be based on accurate data evaluated in an objective manner using scientific analysis. The regulations do not currently do this. ***The April 6, 2007 and September 29, 2007 memos from Barry, Spurlock, and Segawa summarize all of the available data and calculations used to estimate VOC emissions.***	44
32	Section 6447.2(a) unlawfully allows the CAC to reduce the size of the methyl bromide buffer zone based on unidentified "other information." This language was declared unlawful by the San Francisco Superior Court in the *Fernandez v. DPR* litigation. This language should be changed or the regulation will be at risk of being rejected by the Office of Administrative Law or the Courts. ***These are comments on existing regulations and are not relevant to the proposed changes.***	46
33	These proposals recommend major changes in operating procedures and have a large economic impact. It does not seem reasonable to implement them in areas which do not currently require mitigation efforts just to achieve uniformity. The Department has not given details of why this would be an advantage in achieving the goals. Furthermore, it is not clear why enforceability would be a problem even in those counties that contain both NAAs and attainment areas, but particularly in those counties that did not contain any NAAs. ***DPR has revised the regulations so that all but one of the requirements only applies within the NAAs.***	43
34	All we ask is that you allow us to use the tools that we currently have and use the best science available. ***The current tools are insufficient to achieve the required reductions. The April 6, 2007 and September 29, 2007 memos from Barry, Spurlock, and Segawa summarize all of the available data and calculations used to estimate VOC emissions.***	T6
35	Do we want to halt production on 10-thousand acres to accomplish a two percent reduction in total VOC emissions in Ventura for an air district that has already achieved the federal one-hour ozone standard? Remove Ventura County from the proposed regulations. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year in Ventura..***	T7
36	We currently are very opposed to these regulations just become we have moved dramatically in the last five years to lower	T8

	emission fumigation applications. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year in the five NAAs. The VOC reductions obtained from lower emission fumigation methods have been more than offset by increases in fumigated acres.***	
37	We are all using BACTs for the fumigants we use. In fact, we are the ones who have developed most of these methods. DPR should amend the 1994 SIP or remove Ventura County from these new proposed regulations. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year in the five NAAs. The VOC reductions obtained from lower emission fumigation methods have been more than offset by increases in fumigated acres. DPR is pursuing a SIP amendment to phase-in the VOC reductions for Ventura. However, on December 12, 2007, the court ordered that the regulations had to require the 20 percent reduction in 2008 in Ventura.***	T9
38	Ventura County has been in compliance with the one-hour EPA emission rule since 2002. More importantly, even under the eight-hour rule we had only 17 days last year in the entire county where we did not achieve the eight-hour standard, and this occurred basically in Simi Valley and Ojai areas where these fumigants are not even used. So, even if you were to eliminate these fumigants, it would not have had any impact upon smog in those areas. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year in the five NAAs.***	T10

Licensing

39	Strongly object to section 6445.5 requiring fumigation be completed by a commercially licensed business. ***DPR has modified the regulations deleting the requirement that only pest control businesses perform field fumigations.***	13
40	The proposal would be a financial hardship to lily growers in Del Norte County, cannot be complied with and would not produce any measurable reduction in smog producing VOCs. There are no pest control businesses with the equipment to do the work. ***DPR has modified the regulations and has deleted the requirement that only pest control business perform field fumigations.***	21
41	The requirement of a QAL to be present onsite of each application is also of concern to us. Large ranches, farm large acreages of individual commodities. These commodities are farmed at several different locations that must be treated simultaneously. It would be costly to require each site to be monitored at all times by a certified QAL as there are times in	23

	which applications are being made in several locations simultaneously. This would put an unnecessary burden on the companies certified to make these applications in that they would have to hire additional personnel to maintain compliance with DPR. This in turn would increase the cost of treatment and application for the grower. Growers should be allowed to become certified to perform these applications if they are able to comply with application methods and technologies set forth by DPR. Growers are responsible individuals who are more than capable of applying these fumigants in the proper manner. ***DPR agrees with this comment and has amended the proposed regulations to delete the requirement for onsite supervision by the certified applicator.***	
42	Requiring a QAL in the appropriate category seems reasonable and prudent for handling fumigants. The requirement that a pest control business (PCB) apply the material does not guarantee that the fumigation will be performed correctly, as demonstrated by several fumigation incidents where a licensed business was the applicator. Have there been any "fumigation incidents" caused by a grower performing their own fumigations? The statement of reasons argues for the change by stating that the PCB would have the specialized training and knowledge required for handling fumigants. This knowledge could be demonstrated by either a grower or business personnel taking and passing the QAL in the appropriate category. ***DPR agrees in part with this comment and has modified the proposed regulations to delete the requirement that fumigations be conducted only by a licensed pest control business. Competent growers could be issued permits to do their own applications. However, DPR feels that it has an obligation to ensure the professionalism and competence of licensed businesses. The requirements for supervision by a person holding qualified applicator license in the subcategory of field fumigation would be retained for a licensed pest control business. Pest control businesses perform a greater number of fumigations than private applicators, therefore, have more potential to effect VOC emissions. The new licensing requirements will increase the confidence that the pest control businesses will perform the applications properly.***	24
43	The statement of reasons also addresses the issue of reporting and notes that "it would require a smaller population to report their emissions who have more experience in meeting reporting requirements." Currently there are no differences in reporting requirements in the CCR for PCB's or growers so it is not clear how PCB have greater experience in reporting. ***DPR modified the regulations to delete the requirement that the fumigations must be conducted by a pest control business.***	24
44	As chemigation requires monitoring as part of permit conditions, it is not clear if the PCB is supposed to be onsite during this entire period, which can be up to 12 hours in proposed section 6445.5(b). ***DPR modified the regulations to delete the requirement that a qualified applicator must be onsite during the entire application.***	24
45	We are already employing well-trained and experienced applicators. To be forced to hire an outside source is not the solution to controlling emissions and collectively improving air quality.	27

	DPR agrees with this comment and has modified the requirements that limited fumigations to only licensed pest control businesses (see response to comment #42).	
46	We can accept the requirement for all fumigation applications to be made by a licensed PCB provided that there is a better defined phase-in which would allow us to spread the new costs of training, certification, and equipment over time. ***DPR has deleted the requirement for use of only licensed pest control businesses and has provided a one-year phase in period for the requirement of a field fumigation use category under the qualified applicator license for the supervisor.***	30
47	Request that an even playing field regarding any defined training program and certification process. Training programs, materials, etc., are not clearly laid out in the proposed regulations. ***The certification program would be implemented at the State level to provide for consistency. The existing certification program would be used; there is no need to develop a new training program.***	30
48	The proposed regulations require a person holding a QAL to be onsite during fumigations has no bearing on the VOC emission issue and should not be a part of these regulations. ***DPR agrees with this comment and has amended the proposed regulations to delete the requirement for onsite supervision.***	30, 32, 34, 48, T17, T6p
49	The proposed section 6445.5 requirement for all fumigation applications to be made by a licensed PCB is impractical for those who do not have access to licensed PCB. Allowing growers the ability to do the applications means they can adjust to available resources, climate and moisture conditions. ***See response to comment #42.***	31, T21p
50	Flexibility needs to be given to those growers that are in attainment areas that do not readily have access to pest control operators. Growers should continue to be allowed to receive proper training but not be required to hire a PCB, or have a QAL to apply the fumigants used in their operations. Current labels and regulations mitigate toxicity concerns. ***See response to comment #42.***	31, T19
51	The requirement of a person holding a QAL to be onsite during fumigations will serve to limit the number of growers that are able to treat their fields in a timely manner due to an inadequate supply of QALs. Creating a novel licensing subcategory for fumigants only adds to the paperwork burden for both DPR and Industry. ***See response to comment #41.***	32
52	It is not completely clear what the rationale is for the QAL/QAC subcategory in reducing VOC emissions. This proposal could place additional stress on the PCO and PCA programs. It is impractical to require PCAs to be onsite during each fumigant application "statewide" when DPR has not clarified how this will help towards the reduction of VOC emissions. If it is to improve DPR's understanding of current methods of fumigant applications, there are other ways to achieve that	35, T16p

	result. Moreover, not seen any evidence or justification to apply this regulation to outside of the NAAs. ***DPR agrees with this comment and has deleted the requirement for applications to be made by a licensed pest control business. However, as discussed in response to comment #42, DPR believes that increased competency will have a positive impact of the professionalism of applicators and therefore tend to raise the standards of applications.***	
53	For orchard and vine industries, most pre-plant fumigant applications are made by a licensed PCB and this requirement is acceptable as listed in section (a) except for the case of low-volume irrigation applications. Low-volume irrigation injections present minimal VOC emission factors and should not be subject to the requirements in section (a). There is not a justification as to why PCBs would need to make the application for low-volume irrigation injections. ***DPR agrees with this comment and has deleted the requirement for applications to be made by a licensed pest control business.***	34
54	Request at a minimum that the requirement of onsite QAC or PCB supervision should not be required for low volume applications of 1,3-D (Telone), Sodium Tetrathiocarbonate (Enzone), and metam sodium (Vapam). It is not feasible to require a QAC or PCB to be present during the entire duration of an application because there are not enough licensed businesses or individuals available in the state to do so. However, requiring off-site oversight by a licensed PCB or QAC is acceptable to the industry. Direct oversight is not applicable for all applications, as there are situations where supervision is needed and that is currently mandated through county permit requirements. ***DPR has modified the proposed regulations to no longer require that a qualified applicator be on-site.***	34
55	In the case of metam sodium, at least one person during the application and post-application monitoring period must be certified under the metam sodium safety program. Metam sodium registrants provide training and certification, which is a state requirement, and an individual must be certified prior to an application. In the case of applications taking place adjacent to sensitive sites, there are special provisions to ensure that additional measures are in place for added safety. ***DPR concurs with the conclusions of the commentor and encourages registrants and employers to offer training.***	34
56	This requirement for all fumigation applications to be made by a licensed pest control business is not necessary to assure proper applications by trained applicators. Many growers have full-time, trained applicators on staff. Further, specialized training and knowledge, if required, could be provided to certified private applicators as well as pest control business employees. Section 6452.1(d) requires that all persons applying fumigants must report fumigant applications and methods. There are no facts, studies or expert opinions provided to demonstrate that private applicators are incapable of effective reporting. In fact, private applicators, as well as PCBs are currently required to submit Pesticide Use Reports (PUR). The stated purpose of this section is to aid in the reduction of VOC emissions. There is no need and therefore no justification for applying the requirements of this section to areas of the state that are meeting emission goals. The argument that the requirement must be statewide for purposes of uniformity and enforceability is specious.	48

	DPR agrees with this comment - see response to comment #42.	
57 34	DPR should assess if a licensed pest control business is really the only entity that can conduct fumigation for all the various methods. Depending on the application method, a grower or PCA holding a QAL or QAC may be adequate, for example for drip irrigation applications. ***DPR has further assessed this issue and the requirement for use of only licensed pest control businesses has been eliminated.***	38
58	There are not enough qualified personnel available and the cost would be prohibitive if the requirement that a person with a QAL or QAC be present onsite during and after a fumigation for any and all post-fumigation activities. DPR needs to consider more carefully when such a trained person needs to be present or needs to be within close enough proximity and when not. ***DPR has more carefully considered the need for a certified applicator to be physically present and eliminated that requirement.***	38
59	This requirement should not apply statewide assuming this particular requirement is to address VOC emissions. ***See response to comments #57 and #58.***	38, T19
60	DPR's proposed requirement for special training and certification of fumigant applicators is a good idea. However, it is not clear why this requirement would not be implemented until January 2009. This requirement should be put into place with the rest of the regulations, in January 2008. ***DPR disagrees with the recommendation to immediately implement the requirement for possession of the field fumigation subcategory. This comment does not consider the resources necessary to develop study materials, the test, and then administer the tests to the necessary people. It is not practical to implement this requirement in the next four months.***	46, T7p
61	There is no need for a certified applicator to be onsite for the entire duration of fumigation handling activities. There are no data or other support for this requirement. Requiring a licensed applicator to remain onsite during all applications and related handling activities will not only increase costs, but could severely limit the ability of growers to schedule applications. ***DPR agrees with this comment and has deleted the requirement for the certified applicator to be on site during the entire application.***	47
62	Section 6445(b) should be deleted. A person holding a qualified applicator license or certificate with the field fumigation pest control subcategory does not need to be present during the entire fumigation. Existing regulations (CCR 6406) require pesticide application supervision commensurate with the hazards present. The hazard associated with application of a fumigant is no greater because there may be VOC emissions, and therefore such a requirement would impose an unnecessary burden.	41, 45

	See response to comment #61.	
63	DPR needs to define a licensed pest control business from a licensed pest control dealer. ***DPR does not concur with this comment. The scope of each license is outlined in the Food and Agricultural Code.***	45
64	Section 6445.5 (b): Mandating PCO employed by licensed pest control businesses will create a shortage of qualified personnel needed to manage fumigant applications. DPR effort's to create an emissions management hierarchy by compounding the requirements below for applying fumigants has unwittingly narrowed the base of qualified people who could oversee fumigation applications. Has DPR studied concentration and frequency of fumigant applications in NAA counties to discover the workforce needed? We believe that DPR's regulation will cause sprinkler applied metam sodium applications to no longer be practical and result in the loss of this important application method. ***DPR has further assessed this issue and the requirement for use of only licensed pest control businesses and the need for a certified applicator to be physically present have been eliminated. See response to comment #42.***	45

Methods

65	Restrictions on fumigant application methods for purposes of achieving VOC emission reductions should only apply in NAAs where pesticide SIP goals are not being met. There is no justification and therefore it is an abuse of authority to limit methods statewide since toxicity concerns are mitigated by current labels and regulations. A major strength of California's pesticide regulatory program is that it can be administered on a regional level allowing restrictions commensurate with risk. ***DPR has revised the proposed regulations to only apply in the NAAs.***	48, T20p
66	It would be impossible to apply metam during daytime hours since at this time applications are not permitted when temperatures exceed 90 degrees. ***As discussed in the September 29, 2007 memo by Barry, Spurlock, and Segawa, the Metam Sodium Alliance fields studies used to develop the field adjustment factors show that to minimize both flux and air concentrations, it is optimal to apply metam sodium during daylight hours. During the summer, when the high air temperatures are most likely to occur, sunrise occurs at approximately 5:40 a.m. Thus, an application can be started at 6:40 a.m.***	1
67	Under the use restrictions, it indicates that these provisions do not apply to tree-site (tree holes). Within the paragraph describing this exemption, it also says; "…raised–tarpaulin nursery fumigation of less than one acre." Does this limit of less than one acre only apply only to the nursery fumigation use, or also the tree-site use? Is there any acreage limit for tree-site (tree replant) use? Does the exemption only apply to individual tree sites, or does the exemption include larger blocks of replant fumigations? Is the tree-site exemption specific to trees, or is it also intended for replant of grapevines? This is not clear.	14

	DPR modified the regulations to clarify that the field soil fumigation requirements do not apply to replant of individual vine or tree-sites when an application is made to less than one contiguous acre.	
68	Section 6447.3 (a)(2) has been changed to completely halt use of deep placement, broadcast methyl bromide without a tarp. Methyl bromide had an ozone depletion index of 0.3 to 0.4. Methyl bromide is listed in the Clean Air Act as one of the reasons there is an Ozone Hole in the stratosphere. DPR's proposed limitation of methyl bromide applications to "tarped only" must be for some reason other than its emission percentage of VOCs. How does DPR explain why non-tarped deep placement methyl bromide will no longer be permitted in California because this proposed change is not related to reductions in VOCs. At warm temperatures Chloropicrin has a shorter half-life than 1, 3-D or methyl bromide thus its emission percentages could be substantially less when compared to other fumigants. Yet, with these new rules Chloropicrin by itself is not being permitted without a tarp. Why? ***This regulation does not attempt to reduce stratospheric ozone depletion. The objective of this regulation and the court order is to reduce VOC emissions and the resulting formation of ground-level ozone. DPR revised the proposed regulations to prohibit nontarped methyl bromide applications in the San Joaquin Valley, Ventura and Southeast Dessert NAAs only. Field monitoring data shows that tarped applications of both methyl bromide and chloropicrin have lower emissions compared to untarped applications. Therefore, prohibition of untarped applications will reduce VOC emissions.***	15
69	Most people look at the tractor rig without noting the deep shanks and believe that most of the methyl bromide must be off-gassed. Others of us familiar with the value of tarps versus deep placement believe placement at the 24-inch soil depth will reduce emissions more than placement of methyl bromide at 10 inches beneath a tarp. Clearly, emissions data have been needed. DPR has now estimated methyl bromide emissions from tarped, shallow injections to be the same as they are for deep injected, 48 percent. Why does DPR not show methyl bromide emission percentages when applied 26 inches deep without a tarp? Studies conducted by Yates et al in 1997 and peer reviewed in Env. Sci Technol 31: 1136-1143 estimated methyl bromide emissions possibly as high as 21 percent to as low as 4.9 percent of the applied amount depending on the monitoring procedures used. Does DPR have a scientifically reviewed data set that is contradictory to that of Yates? On what scientific basis does DPR intend to halt non-tarped deep applications of methyl bromide and/or chloropicrin for tree and vine growers but permit tarped, shallow applications for annual crops? ***DPR did not include the Yates et al. (1997) paper in its emission rating estimates due to considerable uncertainty in the reported results. The most defensible estimates for loss from untarp/deep is the soil Br- method estimate of 21 percent. All other estimates in that paper are unacceptably suspect since the authors themselves state it is likely that substantial mass loss occurred through the shank fractures during the 4-hour application when there was no air concentration monitoring. In contrast, the five deep untarped studies DPR used to estimate the emission rating included monitoring during the application period. It should be noted that the 21 percent loss from this study, rather than the lower estimates, is referenced in Table 2 of a second Yates paper (Yates et al, 2002). In addition, the Yates et al. (1997)***	15

	application was made deeper than the regulations require.	
70	Section 6448.1(b) has been "improved upon" apparently to avoid the 1996 ambiguity at the field level when determining soil moisture at time of application. But, the newly proposed requirement of 50 percent and 25 percent of field capacity at the depth of application is ambiguous and even more onerous than the 1996 rulings. These proposed changes further destroy the efficacy of this and other true fumigants as their molecules are sealed in with moisture at the line of injection and further sealed with irrigations at the surface. Who will develop and calculate the moisture retention curves for these sites? It is common to have several different soil types across each ten acres of land and for each of these soils there will need to be a moisture retention curve developed if one is to accurately calculate percentage of field capacity. ***For clarity and enforceability, DPR revised the moisture requirements by replacing the percent of moisture with a "feel" method that is commonly used to measure soil moisture, and is included on some product labels. The pre-treatment soil moisture has been aligned with label requirements. Also see response to comment #2.***	15
71	What will occur if one applies a true fumigant such as 1,3-D to a field surface that is at field capacity (–30cb moisture tension) or even dryer (-50cb)…as each shank is pulled through the moistened soil it leaves a chimney larger than usual because soil will not easily fall back into it. ***DPR modified the proposed regulations incorporated label specifications with either (1) reference to label moisture requirements (2) in the absence of soil moisture requirements, suggesting a minimum soil moisture based on the feel method, using language from the 1,3-D label. Application of 1,3-D to soils for perennial crops has the same label moisture requirements as for annuals. Under these circumstances studies indicate approximately ¼ of applied 1,3-D volatilizes.***	15
72	Tree and vine growers almost never have their own sprinklers and a great percentage of rented sprinkler lines leak at almost every rubber gasket along the line. Leaks every 30 feet across a field surface provide sources of nematode re-infection. ***The proposed regulations provide other methods for fumigating trees and vines.***	15
73	Studies for alternatives to methyl bromide were conducted and findings reported at 6-month intervals using DPR format. Those reports indicated that application of more than two inches of water prior to treatment had destroyed the value of fumigations with 1,3-D. We actually had to request permission from Merced County Ag Commissioners office to go off label as we avoided the pre-irrigation requirement needed to bring soil moisture content to a level in line with USDA feel method for moisture content. In this trial we once again proved that if the soil contains more than 12 percent moisture content at any depth it is very difficult to move 332 lb/acre 1,3-D beyond that point. Why did DPR never consider that any grower in the state could be going through the same problems we encountered when using 1996 pre-irrigation requirements? This problem is particularly serious in those years when rainfall does not occur in the fall. Even worse, DPR has now chosen an even more ambiguous and difficult to achieve pre-treatment moisture measurement. ***DPR modified the proposed regulations to align the pre-treatment soil moisture requirements with labeling.***	15

74	Section 6448.1 (3)(C) The proposed post-treatment water requirements have been hastily lifted from studies involving sprinkler applications of metam sodium. DPR changes are being proposed without scientific evaluation of their complete impact. I challenge DPR to present the efficacy data needed to convince growers or a judge that these true fumigants are not now being partially wasted. ***DPR does not intend for all fumigants and application methods to be viable alternatives in all situations. In cases where the additional water requirements are not viable, tarping or drip application may be viable alternatives. These application methods were developed by registrants, the U.S Department of Agriculture, and University of California with consideration for regional differences. DPR is not obligated to reduce the impact of this or any proposed regulation to ensure efficacy.***	15
75	An abundance of soil moisture when applying true fumigants will restrict their dispersal and also dilute the concentrations of each active ingredient as it reaches the target. At the field surface these proposed post-treatment moisture requirements applied just as the fumigants are beginning to reach the field surface (1 day or 6 days depending on the application depth and product) can reduce emissions without reducing product efficacy. But the logisitics of reducing emissions in this manner will be quite cumbersome for the grower to achieve and the timing of applications as proposed is based on notions about metam sodium rather than actual experiments involving true fumigants. For example, apply 1,3-D to a wet, moist or dry soil and when will peak concentrations be achieved at the field surface? Now apply it at the 28" depth, 18" depth or 12" depth and observe that peak concentrations can be reduced and delayed depending on these parameters. When doing such studies at fumigation rates such as 332 lb/acre there must be complimentary efficacy data and there must be measurements of soil moisture content deep within the soil if one is to gain any predictability as to the best timing for the post treatment irrigations. ***DPR does not intend for all fumigants and application methods to be viable alternatives in all situations. In cases where the additional water requirements are not viable, tarping or drip application may be viable alternatives. These application methods were developed by registrants, the U.S Department of Agriculture, and University of California with consideration for regional differences. DPR is not obligated to reduce the impact of this or any proposed regulation to ensure efficacy.***	15
76	Should accept using a Buessing Shank to broadcast or strip deliver without tarps or post treatment irrigations. ***DPR is not aware of any available emission data for the Buessing Shank method.***	15
77	Propose that DPR consider chemigation without a tarp. Chemigation treatments lock fumigants into soil as they are carried as deep into soil using with water and likely emit fewer VOCs than the proposed shank treatments to pre-irrigated soils. DPR actually monitored such a non-tarped field application in Atwater, CA several years ago but neither the grower nor I ever saw the final emissions data. On what scientific basis does DPR now indicate that non-tarped chemigation at reduced concentrations (usually at 250 ppm or less) not reduce VOCs enough so there must be a tarp?	15

	The study referred to in this comment was used to develop the emission ratings. See Table 5 of the September 29, 2007 memo by Barry, Spurlock, and Segawa and Table 5 of the April 6, 2007 memo by Barry, Spurlock, and Segawa.	
78	Get the need for pre-treatment irrigations for true fumigants off the label at DPR and USEPA, particularly for deep applications needed by tree and vine growers. Make it a separate label if needed. Accept non-tarped methyl bromide and chloropicrin applications until there are data to substantiate DPR's position that emissions from deep applications are significantly higher than those for tarped shallow applications. If emissions from deep applications are demonstrated to be lower than DPR's current estimates and/or lower than tarped shallow applications, list non-tarped methyl bromide and chloropircin deep applications as officially accepted methods. Be fair to all California citizenry by re-estimating the total percentage that fumigant use contributes to VOC problems. Do this in light of their degradation rates, adsorptive qualities and the fact they are placed or activated beneath field surfaces rather than 100 percent evaporated into ambient air. ***DPR lacks legal authority to change labels.*** ***There are no field studies measuring the emissions of tarpaulin-deep injection applications of methyl bromide. Numerous field studies comparing tarped and untarped shallow injection shows that untarped applications have significantly higher methyl bromide emissions. Using the shallow injection data as a surrogate for deep injection, DPR believes that prohibiting untarped applications will significantly reduce VOC emissions. The regulation has provisions to update and revise the emission estimates if field data for deep-untarped applications becomes available.*** ***The April 6 and September 29, 2007 memos by Barry, Spurlock, and Segawa describe DPR estimates of VOC emissions from fumigants. DPR estimates that VOC emissions are less than 100 percent for almost all fumigants and application methods.***	15
79	Application methods proposed for elimination are critical to growers. Licensed pest control advisers have an enormous responsibility when making and writing recommendations to utilize a pest management application such as a fumigant. The method selected is most often the method best suited for the crop depending on variable. We are concerned that the available tools or methods are retained to employ the best option when required. Current proposal may jeopardize unique application methods for some commodities. ***Pest control advisers have extensive knowledge about the efficacy of fumigation, but techniques to maximize efficacy may conflict with the need to reduce fumigant emissions. Pest control advisers may have general knowledge about VOC emissions, but they lack specific knowledge to quantify the emissions associated with various fumigants and application methods. The regulations will provide the specific information and requirements to reduce VOC emissions.***	18
80	Why don't the proposed regulations include the option of using two water caps on certain applications? ***An additional study received indicates that the sprinkler/broadcast or bed, or nontarpaulin/shallow/broadcast or bed fumigation methods with two post-fumigation water treatments are effective in reducing VOC emissions. DPR has***	23, T19

	modified the regulations to include use of the two post-fumigation water treatments methods when applying metam sodium and metam potassium.	
81	Sections 6448, 6449, and 6450: Does the "raised tarpaulin ' language define a certain type of bed? In many nurseries, the beds are flat. Dropping the term "raised tarpaulin ' would provide more flexibility. ***This requirement is in an existing regulation. No response necessary.***	24
82	It appears in section 6448.1(c)(4) and (8), you would have to apply water over the tarps in these methods. Why is this necessary for tarped applications? ***The regulation has been modified to remove the word, "broadcast" to clarify that the water treatments only apply to bed fumigations. DPR also clarified that the requirements of the three post-fumigation treatments is to the untarped areas of a bed fumigation. The proposed tarpaulin/deep/broadcast or bed/ three-post fumigation water treatment method (section 6448.1(c)(8)) is no longer an allowable method and was deleted.***	24
83	Sections 6448.1(c)(9) and 6450.1(4)(5)(B): Is the two inches of soil at the end of the row to anchor the tape or prevent leaks? Why only at the end? ***DPR modified the text of the proposed regulation to clarify that drip tape not covered by tarpaulin must be covered by at least two inches of soil. Proposed section 6450(d)(5)(B)--renumbered to (d)(7)-- removed the requirement because there was no difference in VOC emissions from tarped or untarped drip tape during a chemigation application.***	24
84	3 CCR section 3640 makes it mandatory that nursery stock for farm planting be free of economically important nematodes. The California Department of Food and Agriculture's (CDFA) Nursery Inspection Procedures Manual prescribes very specific methods by which fumigation must be conducted. The manual specifies soil temperature, soil moisture, fumigation depth and rate of application, some of which are in conflict with these proposed changes. ***There is at least one fumigation method that still complies with CDFA's manual. Most of the conflicts are with label requirements, not the proposed regulations.***	26
85	Recent studies by U.C. Riverside Nematologist Dr. Michael McKenry have indicated that certain proposals to limit VOC emissions by increasing the amount of water applied to the soil would make the fumigation ineffective. We have read the comments submitted to DPR by Dr. McKenry dated May 29, 2007 in which he explains the consequences of some of the proposed rules regarding soil moisture requirements such as loss of efficacy of pest control as well as the possible unintended consequence of higher emissions. ***See response to comment #75.***	26
86	Section 6448.1: There should absolutely be no triple water seal requirement for 1,3-D products, especially following a deep placement application.	30, 32, 34, T14

	DPR has modified the proposed regulations to delete the method that requires the three post-application water treatments for deep shank 1,3-D applications.	
87	Section 6450.1: The proposed restriction that no applications can be earlier than one hour after sunrise and must be completed no later than one hour before sunset is far too restrictive and contrary to our attempts to avoid applications when bystanders and other people not associated with the application may be present. We understand that this particular proposal is based upon one field study conducted by DPR that is now out of date and is being used improperly as a basis for such an important policy decision. ***The valid data available to DPR indicates high emissions associated with metam night applications. The proposed regulations prohibit night applications of metam to reduce emissions.***	30
88	DPR currently proposes to require the use of tarps on all methyl bromide applications. While this is a valid approach to reducing emissions from shallow methyl bromide applications, it is an invalid approach for deep methyl bromide applications. DPR's own studies, as well as those of registrants, USDA-ARS and University of California researchers, demonstrate that emissions from non-tarped deep injections are sufficiently low to not warrant elimination. Non-tarped deep methyl bromide applications are a critical tool for tree and vine growers. ***DPR has modified the regulations to only require tarps in the San Joaquin Valley, Southeast Desert, and Ventura NAAs during the time period of May 1 through October 31. DPR and registrant studies indicate that there is no difference in emissions between untarped shallow and deep injections of methyl bromide, neither which are allowed in these three NAAs during the May 1 through October 31 time period.***	32
89	DPR currently proposes to eliminate non-tarped, straight chloropicrin applications, despite the fact that DPR relied heavily on emission data from non-tarped, straight chloropicrin field studies to develop its estimated emission factors for various application methods. DPR's proposal to eliminate non-tarped, straight chloropicrin applications does not appear to be based on "high" VOC emissions, but on some other factor. The pending VOC regulations must be VOC-related exclusively; and as such, there is no logical basis for eliminating these chloropicrin application methods. ***DPR has modified the regulations to require tarps in the San Joaquin Valley, Southeast Desert, and Ventura NAAs during the time period of May 1 through October 31. Data available to DPR indicates lower emissions for tarped chloropicrin applications compared to untarped applications.***	32
90	DPR also proposes to change the soil moisture requirements for 1,3-D applications. DPR should remove their soil moisture requirements and rely on those already established on federally -and State-approved 1,3-D labels. ***DPR modified the proposed regulations to align the pre-treatment soil moisture requirements with labeling.***	32, 36, 38, 39, 41, 45, 48
91	In section 6448.1, a pre-irrigation is worth to be considered. We have enough information that this method will produce low emissions with great certainty. A pre-irrigation (irrigation with sprinklers prior to fumigation) can be one of low emission option methods at least for Telone and CP.	37

	DPR believes there is insufficient data at this time to quantify the emission reduction associated with pre-irrigation.	
92	The soil moisture requirement for 1,3-D of 25 percent of field capacity for sandy loam is a very dry soil. Check if it was meant to be 25 percent of available field capacity, i.e., water content beyond the wilting point. ***DPR modified the proposed regulations to align the pre-treatment soil moisture requirements with labeling.***	37
93	Section 6450.2(b)(1)(B) requires that the first post-application water treatment to begin within 30 minutes of the completion of fumigation. Unlike liquid MITC-generating fumigants, dazomet does not release MITC upon exposure to the air. Supplemental water is needed to provide sufficient moisture to initiate activation of dazomet. Extending the interval to 90 minutes will not cause an increase in VOC emissions, will allow the applicator an appropriate amount of time to safely and efficiently charge the irrigation system, and will insure a uniform application of water. The 30-minute interval would result in a higher potential for error and reduced safety. ***DPR believes that the label requirements for soil moisture are sufficient to initiate activation of dazomet immediately upon application. In addition, for at least one of the studies, post-application water treatment began approximately 30 minutes after fumigation.***	36
94	Section 6450.2(b)(1)(B) requires a second post-fumigation water treatment to begin no earlier than one hour prior to sunset on the day of fumigation and competed by midnight. The dazomet product label instructions (Basamid® G) direct users to maintain adequate soil moisture through supplemental irrigation for 72 hours after application, and requires a larger initial volume of water (0.75 inches) and in some cases may also prescribe more frequent irrigation than DPR's proposed schedule. Under rapid drying conditions it may be necessary to irrigate in early afternoon to maintain the water seal. The intent of the label (and proposed regulation) is to ensure the water seal is maintained during calm nighttime periods when peak fumigant emissions and atmospheric inversions may increase risk of bystander exposure. The proposed regulation should be sufficiently flexible to allow site-specific post application water treatment as dictated by the product label. As proposed, this section is inconsistent with product labeling and will not be easily understood by persons directly affected by the regulation. ***Section 6450.2(b)(1)(E) allows the flexibility to apply additional site-specific post-application water treatments, as long as the required water treatments are applied.***	36, 39, 48
95	Metam sodium application method using non-tarp, shallow bed/broadcast has been assigned an inflated 77 percent emission factor. Based on the prevailing soil profile and required water seal, 45 percent is a more scientifically justifiable. ***DPR has modified the proposed regulation deleting the table containing the Percentage of VOC emissions. However, the 77 percent emission factor was developed directly from the Metam Sodium Alliance study flux profile. There was no inflation of this estimate.***	35, T12
96	Mitigation practices such as triple water seals may have some place in a broad strategy, but these methods must be practical	35, T12,

	to be relevant. Requiring growers to apply triple water seals will result in additional, but unnecessary labor expenses; a potentially inefficient use of the State's limited water resources by 254 million gallons/year; additional worker protection considerations and the possibility of diminishing the efficacy of the fumigant treatment. In some situations, this method has been used to illustrate how "low emission" practices minimize the economic impact of this regulation. This perception is unsupportable unless this proposed method is practical and determined to be an appropriate alternative, which in most cases is highly unlikely. ***DPR has modified the proposed regulation so the triple post-application water treatments (seal) are only a requirement in the San Joaquin Valley, Southeast Desert, and Ventura NAAs during the time period of May 1 through October 31. DPR has also included an option that includes two post-application water treatments). The additional water specified by the proposed regulation constitutes less than two percent of the total water needs for most crops.***	T16p, 31
97	Presumptions that the San Joaquin Valley will be able to accommodate these regulations without a significant loss of fumigated acres by switching to "low emission" methods, as described in this regulation are inaccurate. Growers need practical low emission methods, such as the deep placement method adopted to mitigate emissions when 1,3-D was reintroduced in 1995. The deep shank injection application method for 1,3-D is a sure way to reduce emissions even if DPR has not yet fully evaluated the emissions. Soil moisture is another key element that a grower must take into consideration for a successful application of 1,3-D, but DPR's proposed regulation regulates moisture content and it is likely that efficacy will be lowered or lost by following the proposed requirements. ***DPR has modified the proposed regulations to allow the current deep shank injection method introduced in 1995. DPR modified the proposed regulations to align the pre-treatment soil moisture requirements with labeling.***	34
98	Applying 1,3-D via deep placement with a soil seal dramatically improves dispersal of fumigants within soil thereby reducing the amount of fumigant available for off-gassing. These improved procedures to gain efficacy have been documented in field trials conducted by Michael McKenry, UC Riverside Nematologist. Air space within the soil is critical to obtaining the appropriate movement of the fumigant. If there is too much moisture in the soil the soil pores become clogged and the fumigant is locked into the ground and will not be able to move horizontally throughout the soil. ***DPR modified the proposed regulations to align the pre-treatment soil moisture requirements with labeling.***	34
99	There is a dramatic variation with how the post application water seals affect the soil moisture. Using the post-application water seals will dilute and push out the fumigant from the soil which is precisely the location where the tender, newly planted roots will grow. Saturation levels of the soil can range from 135 percent down to less than 18 percent depending on the soil texture (i.e. silty clay, clay loam, sandy loam, etc.). Because the same amount of water applied to different soil textures can result in drastically different saturation levels it is a concern when making a fumigant application. Water treatments will vary in the effect on the fumigate application based on the amount of water that is absorbed into the soil. ***DPR has modified the proposed regulations to delete the method that requires the three post-application water***	34

	treatments for deep shank 1,3-D applications. DPR modified the proposed regulations to align the pre-treatment soil moisture requirements with labeling.	
100	The regulations propose to eliminate the methyl bromide application methods of "hot gas" and "shallow non-tarp." DPR fails to provide the basis for elimination of these methods. Any action taken by DPR should be based on accurate scientific data. ***DPR has modified the proposed regulations to prohibit the hot gas and shallow non-tarp methods only within the San Joaquin Valley, Southeast Desert, and Ventura NAAs during the time period of May1 through October 31. The data available to DPR shows that this will reduce VOC emissions.***	44, T17p
101	Even if applicable only in NAAs, section 6447.3 should be amended to allow non-tarped, deep placement applications of methyl bromide. This method is widely used for tree and vine crops and is critical in areas where alternative fumigants, such as 1,3-D are not allowed due to township caps, or are not as effective because of heavy soils. Emission factors for deep/non-tarped applications of methyl bromide are much lower (nearly half) than DPR estimates and are equivalent to, or less than tarp/shallow/broadcast methods allowed by this section. ***DPR has modified the regulations to require tarps in the San Joaquin Valley, Southeast Desert, and Ventura NAAs during the time period of May 1 through October 31. Data available to DPR indicates lower emissions for tarped methyl bromide applications compared to untarped applications.***	48, 39, 36, T16p, T12
102	Tree sites (tree holes) should be exempted from section 6448 in the same way that they are exempted from the restrictions pertaining to methyl bromide. This may become an important application method for trees and vines in the San Joaquin Valley as methyl bromide is phased out under the Montreal Protocol. In addition, deep placement of 1, 3-D with proper soil moisture is a low emission method. ***DPR agrees and has modified the proposed regulations to add an exemption for the replant of individual vine to tree-sites less than one contiguous acre.***	48, 41, 39, 36
103	The requirements of section 6448.1(b) are overly prescriptive and, for some applications, conflict with good use practices. Specifically, the requirement that only a tandem disc may be used to eliminate the chisel trace, instead of a "tandem disc or similar equipment" as stated on the product label, is problematic for row applications, since the disc will destroy the bed. ***The proposed regulations have been revised to delete the requirement for the tandem disc.***	48, 39, 36
104	Tree sites (tree holes) should be exempted from section 6449 in the same way that they are exempted from the restrictions pertaining to methyl bromide. ***DPR modified the regulations to clarify that the field soil fumigation requirements do not apply to replant of individual vine or tree-sites when an application is made to less than one contiguous acre.***	48, 42,38, 39, 36
105	Non-tarped chloropicrin applications should not be prohibited in all circumstances. Deep placement can significantly	48, 39, 36,

	reduce emissions. For shallow, tarped chloropicrin applications, studies have shown that proper pre-application moisture can reduce emissions as well as post-application water. In many cases, applying post-application water through overhead sprinklers is not practical or economically viable. Pre-application moisture may be a feasible alternative for emission reduction. ***There are no field studies quantifying emissions for deep injection of chloropicrin.***	42
106	Shank applications followed by two post-fumigation water treatment and sprinkler applications followed by two post-fumigation water treatments should be added to the approved methods. These are reduced emission methods, as DPR has recognized in the proposed MITC mitigation documents currently under discussion. ***DPR has revised the proposed regulations to include a two post-fumigation water treatment for sprinkler and shank applications, based on new data received.***	48, 39, 36, 31, T17, T20, T21p
107	The proposed regulations give the Director discretion to allow an alternative method based on a written request with "scientific data documenting the overall VOC emission rate" as long as the alternative method achieves greater reductions than the methods already approved. The Director then must post a notice of the decision. This is a loophole that allows the decision to be made at the Director's discretion without any public input into the process. ***DPR has modified the proposed regulations to allow interim approval of a reduced VOC field fumigation method for a period of up to three years. This will provide the necessary flexibility for innovations that reduce emissions to occur while DPR develops new regulations. The reduced method will be included in the Annual VOC Emission Report that will allow for public comment period.***	46
108	Section 6447.3: DPR does not list the most common method for applying methyl bromide in the tree replant situation--deep shank injected without a tarp. ***DPR has modified the regulations to require tarps in the San Joaquin Valley, Southeast Desert, and Ventura NAAs during the time period of May 1 through October 31. Data available to DPR indicates lower emissions for tarped methyl bromide applications compared to untarped applications.***	38
109	Section 6447.3: DPR has stated that list of application methods is to include all commonly used methods thus we believe non-tarp deep method needs to be included (especially of the methods limitations are to apply statewide). ***DPR has modified the regulations to require tarps in the San Joaquin Valley, Southeast Desert, and Ventura NAAs during the time period of May 1 through October 31. Data available to DPR indicates lower emissions for tarped applications compared to untarped applications.***	38
110	Section 6447.3: There is data available on off-gassing from such applications since it is the standard method of application in trees and vines. Given the deep injection the rate of off-gassing should be low.	38

	DPR has modified the regulations to require tarps in the San Joaquin Valley, Southeast Desert, and Ventura NAAs during the time period of May 1 through October 31. Data available to DPR indicates lower emissions for tarped methyl bromide applications compared to untarped applications.	
111	Section 6448.1: Using the term "field capacity" as the criteria for defining adequate soil moisture for applications will require complex measurements to properly measure it. How are growers to determine if they have measured the "field capacity"? Using the right soil moisture can be effective in emissions reduction though it is a fine balance with reducing efficacy. Also it is critical to define at what depth the soil moisture levels need to be measured. ***For clarity and enforceability, DPR revised the moisture requirements by replacing the percent of moisture with a "feel" method that is commonly used to measure soil moisture, and is included on some product labels. The pre-treatment soil moisture has been aligned with label requirements.***	38
112	Section 6449.1: The tarp requirement for all pure chloropicrin fumigations will severely limit the use of a promising methyl bromide alternative. DPR has not justified the need for a tarp as a VOC reduction measure. ***The September 29, 2007 memo by Barry, Spurlock, and Segawa presents data from several field applications. The studies show that tarped application methods have lower emissions, whereas untarped methods result in higher emissions and are therefore prohibited.***	38
113	Section 6449.1: The blanket mandate for tarping chloropicrin is a crude tool and is not appropriate for all methods of applications. DPR should provide language allowing for greater flexibility for future methods for chloropicrin applications. ***Section 6452 has been amended to allow for reduced VOC emission methods to be used after submitting supporting data.***	38
114	Appreciate DPR including language for allowing new methods of applications to be added but greater flexibility should be built into the language in section 6452. A newer method may not reduce VOC emissions more than a current method but may reduce other risk concerns. As written only lower emission methods could be added to the allowable methods. ***The current regulations address the reduction of VOC emissions only.***	38
115	There is currently nothing in the language that allows for researchers to test new methods in the field. The regulation should state there is an exemption, the process, or refer to other statutory language which defines how research can be conducted under this regulation. ***The proposed regulations allow research for new methods pursuant to a valid Research Authorization issued according to section 6260.***	38
116	DPR's proposal to eliminate non-tarped deep methyl bromide applications is not supported by available and credible data. The emission rate is much lower than estimated by DPR. Tarping, if instated as a mandatory practice, would most likely manifest as strip fumigation. According to DPR's Guidance Manual for Methyl Bromide Field Fumigation (Dec. 8, 2004), the emissions ratio for tarped deep strip applications (0.40) is the same as for non-tarped deep broadcast application (0.40).	44

	Therefore, DPR has no cause to eliminate one method that has the same emissions ratio as another method which is approved. ***DPR has modified the regulations to require tarps in the San Joaquin Valley, Southeast Desert, and Ventura NAAs during the time period of May 1 through October 31. Data available to DPR indicates lower emissions for tarped methyl bromide applications compared to untarped applications. DPR has modified the regulations to prohibit both non-tarp deep broadcast application and strip applications during the same time period.***	
117	Maximum use rate in section 6448.1(a) should be deleted. These regulations should focus on VOC emissions and not use rates. This section is unnecessary and redundant as California already limits use to 332 pounds of 1,3-D active ingredient per acre. Further, regulating the maximum use rate limits options to respond to unexpected, exceptional needs to manage severe outbreak situations. Flexibility should be maintained to respond to emergency pest conditions. ***VOC emissions depend on the fumigant and application method, number of acres treated, and the application rate. It is appropriate to limit application rates to control VOC emissions. The application rate limits are not redundant because they only apply in the nonattainment areas during the May through October time period. DPR may give interim approval for a higher application rate, with a corresponding decrease in emission rating pursuant to section 6452.***	41
118	In section 6448.1(c)(1-8)(A), depth language should be consistent with the label, which uses distance to closest soil-air interface. The terminology in the proposed regulations "…inches below the soil surface…"can be different from"… nearest soil/air interface (e.g. furrow or bed top) … " as stated in labels for various 1,3-D products. For example: raised beds may present a confusing situation around the needed injection depth. The word ‘below’ might be associated with the bed tops only. To account for the sides or furrows of raised beds, the wording should be changed as follows: "Injection point must be at least ‘x’ inches from the nearest soil surface." ***DPR disagrees with the use of “nearest soil/air interface” which would require the permittee to use mathmatical calculations and geometry to determine the depth of the application. DPR considers the depth of the shank to be the simpliest and most appropriate description for the depth of injection.***	41
119	Section 6448.1(c)(1-8)(B) should either be deleted or made consistent with the product labels and revised. Sealing equipment and application instructions should be consistent with the current 1,3-D product labels, based on performance and agronomic sense and not overly prescriptive. Specific points to consider include prescribing only a tandem disc for broadcast applications is unnecessarily restrictive and limits other effective methods; the regulations incorrectly combine row and broadcast methods in the same subsection(c)(1-8)(B). One would not use a tandem disc on a row application as it would destroy the bed. Prescribing only a ring roller, cultipacker, or roller to compact the soil surface is unnecessarily restrictive and limits other effective methods. ***DPR has modified the proposed regulation to delete the requirement for the tandem disc. The reference to ring roller, cultipacker, or roller has been deleted.***	30, 41, 38

120	Section 6448.1(c)(3), (4), (7), and (8): Post-fumigation water seals can reduce fumigant emissions, and we support their inclusion here, but they are not possible or practical in many situations. ***DPR does not intend for all fumigants and application methods to be viable alternatives in all situations. In cases where the additional water requirements are not viable, tarping or drip application may be viable alternatives. These application methods were developed by registrants, the U.S Department of Agriculture, and University of California with consideration for regional differences.***	41
121	The timings of post-fumigation water seals should not be fixed uniformly. They should be flexible so that irrigation applications are timed to correspond with known periods of peak emission to optimize effectiveness ***The regulations were modified to delete this requirement for deep injection of 1,3-D.***	41
122	Section 6448.1(c)(4) and (8) should be clarified or deleted. Applying post-application irrigation water treatments to tarpaulin covered fields is impractical and of marginal value. Applying water over a tarped field might be a research method to reduce emissions, but it is unlikely to be effective under normal field conditions because fields are not level enough to maintain uniform layers of water on a tarpaulin. ***The proposed regulations have been revised to represent only bed applications. The nontarpaulin/ deep/broadcast or bed with three post water treatments (section 6448(c)(8)) has been eliminated.***	41
123	Section 6448.1(c)(3): This proposed rule would cause growers to use this product in a manner inconsistent with federal labeling by allowing workers to perform irrigation duties in the field immediately after application. The federal label forbids reentering the field for five days after application. In addition, the physical and chemical properties of fumigants are different. For example, unlike metam, the best use practices of 1,3-D does not include a water seal 30 minutes after application. In fact, this is harmful to the efficacy of the product. Irrigation decreases the porosity of the soil which is necessary for promoting diffusion of the product for killing pathogens. ***The regulations require post-application water treatments, not irrigation. The workers performing the water treatments are considered pesticide handlers. The proposed regulation is not inconsistent with federal labeling, and labeling does not forbid reentering the field for handling activities. Labeling prohibits early entry without appropriate personal protective equipment. Workers can conduct the water treatments by wearing the appropriate personal protective equipment. Workers can also conduct the water treatments without personal protective equipment by placing post-application water treatment equipment prior to fumigation. DPR does not intend for all fumigants and application methods to be viable alternatives in all situations. In cases where the additional water requirements are not viable, tarping or drip application may be viable alternatives. These application methods were developed by registrants, the U.S Department of Agriculture, and University of California with consideration for regional differences. DPR is not obligated to reduce the impact of this or any proposed regulation to ensure efficacy.***	45
124	Section 6450.1(b) is redundant because it already appears on the metam sodium label. Why has DPR not tried to	45

	standardize soil moisture requirements for each fumigant? ***For clarity and enforceability, DPR revised the moisture requirements by replacing the percent of moisture with a "feel" method that is commonly used to measure soil moisture, and is included on some product labels. The pre-treatment soil moisture has been aligned with label requirements.***	
125	Section 6450.1(c) Fumigations must start no earlier than one hour after sunrise and must be completed no later than one hour before sunset for the method described in subsection (d)(7). By preventing growers from applying at night, DPR is forcing them to do without. A recent DPR memorandum makes several erroneous conclusions about nighttime applications of metam sodium. ***DPR does not intend for all fumigants and application methods to be viable alternatives in all situations.*** ***The proposal for allowing applications only during daylight hours is supported by several lines of analysis. Night conditions can be quite stable, with or without inversion conditions. All studies conducted by the Metam Alliance characterize the flux profiles for applications done either wholly or predominately during daylight hours. These methods were developed by the Metam Sodium Alliance specifically to minimize MITC mass loss following application. The Metam Sodium Alliance studies summarized in the April 6, 2007 and September 29, 2007 memo by Barry, Spurlock, and Segawa, demonstrate that for standard application methods the MITC flux is highest at night.*** ***DPR believes that the study was done under federal guidelines. It is difficult to tell if there was an inversion at the time of application. The difficulty in determination of inversion conditions is another reason that applications are not allowed during nighttime.*** ***We would agree that the prohibition of the nighttime and 90 degree temperature limit makes certain applications problematic. Unfortunately the 90 degree temperature limit is a labeling requirement that DPR cannot change. However DPR would not oppose a labeling change to raise the limit.***	45
126	Section 6450.1(d)(1)(A) [and (2)(A)] was inspired from the local Kern County permit conditions. However, DPR has seen fit to increase the minimum time from four to six hours. Their misguided efforts to decrease the likelihood of "slugging" have increased the exposure potential to applicators by a third. There is no scientific basis for extending the application time from 4 hours (in Kern County) to 6 hours. This rule ignores the basic principles of time and concentration. Each field has a unique irrigating capacity. ***Based on comments received, DPR has deleted this requirement from the regulations. Because of temperature and timing restrictions, DPR determined this requirement was not feasible and deleted it from the regulations.***	45
127	DPR has ostensibly set maximum pounds of active ingredient for metam sodium and metam potassium to 320 and 350 pounds respectfully. Why have they used a [single] 1:290 injection ratio for [both] materials?	45

	Based on comments received, DPR has modified the proposed regulations to delete this requirement.	
128	There is no scientific basis for the benchmark of 0.25 inches of water. This value was a rough estimate of irrigation capacity in one hour. We believe the volumes of water cited by regulation as a necessary requirement for sealing are inflated and not backed up by science. Did emission research measure and record this data for each treatment and water seal? ***Metam Sodium Alliance studies stated that 0.25 inches of water was applied for each post-application water treatment. DPR staff reviewed the irrigation system parameters for these studies, and recalculated the amount used in the studies as 0.20 inches of water. This change was made in the text of the regulation.***	45
129	Also, the "0.80 inch" of water mandate does not address the problem of applications on heavy soil and cooler winter conditions. This rate is too excessive on heavy ground leaving soil unworkable. The Vapam® HL label states: "Soil conditions must facilitate even moisture penetration without runoff." Why was 0.80-inch chosen and not 0.75-inch, which would promote consistency with the 0.25-inch applications? ***Based on comments received, DPR has deleted this requirement from the regulations.***	45
130	The tables in section 6452.2 eliminate methods that are critical for some crop/pest complexes and, in many cases, overestimate emissions. DPR should re-visit some of the studies submitted by registrants and researchers, consider new studies submitted during the comment period and adjust the percent emissions accordingly. Such reconsideration will promote the accuracy of debatable estimations and insure that appropriate low emission methods are not unnecessarily eliminated. ***DPR is relying on several dozen field studies to determine the emissions associated with the different application methods, and using surrogate field data where necessary. DPR considered other studies prior to its initial estimates, and reconsidered them after receiving comments. The current set of studies used in this analysis is the database available. DPR staff has included in this analysis those studies that have been reviewed and accepted as sufficient quality to provide reliable results. The included studies were conducted at a variety of locations under a variety of meteorological conditions and over the entire year. The variety of locations, application methods, and meteorological conditions are varied in large part due to the diverse nature of agriculture in California.***	48, 39, 36
131	No tarp repair provisions are included for chloropicrin. ***DPR has modified the regulations to include a tarp repair provision for chloropicrin.***	46
132	It is unclear how you incorporate a tarp and post-fumigation water treatment. This seems impractical since a drip system will not spread water sufficiently and sprinklers will not wet soil under the tarp. Placing the tarp after irrigation also seems impractical. ***DPR has revised the proposed regulation to delete the option for post-fumigation water treatment for tarpaulin-***	17

	broadcast applications.	
133	Soil moisture levels are present on the labels and usually given as a range: 50-80 percent. There would seem little point in codifying these levels under regulation. ***DPR has revised the regulations so that soil moisture requirements only apply in the absence of label requirements.***	43
134	Chloropicrin is usually used in combination with another product; however, chloropicrin is also used alone and, as such, would not be covered by the current wording of these regulations. ***DPR has revised the regulations to address chloropicrin as a sole active ingredient.***	43
135	How will the licensed pest control operator verify that a grower has completed his or her third sprinkler applied water seal? ***There is no requirement for documented verification of the completion of these water treatments. However it is the responsibility of the applicator to satisfy itself that the regulatory requirements pertaining to the application have been completed. If the CAC has sufficient evidence of failure to comply (a violation), enforcement action can proceed against the applicator.***	45
136	The proposed regulations would limit the availability of fumigants and compromise the efficacy of the treatments that are applied, such as through the use of the triple water seal. ***DPR does not intend for all fumigants and application methods to be viable alternatives in all situations. In cases where the additional water requirements are not viable, tarping or drip application may be viable alternatives. These application methods were developed by registrants, the U.S Department of Agriculture, and University of California with consideration for regional differences. DPR is not obligated to reduce the impact of this or any proposed regulation to ensure efficacy.***	T6p
137	There's a lot of application methods that will require additional water applications. As a result the pumps shut down, deliveries are behind, all of this uncertainty creating a demand for more water to be applied not only raises the level of uncertainty but will also result in increased costs to growers. ***The additional water required by the post-fumigation water treatments is less than two percent of the total water need for most crops.***	T19

<u>Emissions</u>

138	The proposed regulations do not go far enough to achieve the required emissions reductions. Based on flawed assumptions about application methods and unreliable studies to calculate rates of VOC emissions, DPR has underestimated total VOC emissions and therefore the overall quantity of emissions that need to be reduced (since 20 percent of a smaller number is	Binder 2; 2, 6, 8

	less than 20 percent of a larger number). ***DPR is relying on several dozen field studies to determine the emissions associated with the different application methods, and using surrogate field data where necessary. DPR considered other studies prior to its initial estimates, and reconsidered them after receiving comments. The current set of studies used in this analysis is the database available. DPR staff has included in this analysis those studies that have been reviewed and accepted as sufficient quality to provide reliable results. The included studies were conducted at a variety of locations under a variety of meteorological conditions and over the entire year. The variety of locations, application methods, and meteorological conditions are varied in large part due to the diverse nature of agriculture in California.***	
139	Ventura farmers have been pioneers in implementing Integrated Pest Management systems, as well as Best Available Control Technology (BACT), which resulted in significant reductions in VOC emissions which are consistent with the goals of the proposed regulations. These reductions must be evaluated by DPR as part of its analysis. Also, it appears that DPR has not evaluated agriculture's contribution towards the elimination of CO_2 from our atmosphere as an offset to the proposed emission reductions. ***DPR has evaluated, agrees, and incorporated VOC reductions obtained from lower emission fumigation methods in its estimates. However, the reductions from changes in application methods have been more than offset by increases in fumigated acres. Evaluation of CO_2 contribution is outside the scope of the regulations.***	12
140	Section 6452 should specify or indicate if the data to be submitted can be laboratory generated (percent emission penetration of a fumigant compound through specific types of plastic tarping [preferable] relative to a standard HDPE), or if the data must come from extensive and very expensive field testing [not-preferred]. Will data from sites outside of California be accepted? ***DPR has not included laboratory measurements of emissions in its estimates because they may not reflect field conditions. However, the regulations provide flexibility to include laboratory data in the future if it can be demonstrated that it accurately estimates emissions.***	14
141	Section 6452.3 provides no mechanism for how any new fumigants entering the market will be assigned any allocation for use in the NAAs during the period of May 1 to October 31. The allocation system, unless modified to allow these new products, will become an exclusive market for the products listed in section 6452.2. A mechanism needs to be included so these new products have an opportunity for use. ***DPR has revised the proposed regulations and changed from a registrant allocation system to a permittee allowance system.***	14
142	In section 6452.3(b)(1)(D) and 4(c)(1)(F) the Director will use "Share of the fumigant market" to determine allocations. It is not clear if this refers to the market share of fumigant use in California for the previous year, a weighted average over several years, or is only referring to the market share within the non-attainment zones during the period of May 1 through	14

	October 31. Although this may be fair (?) to the currently registered products, this can also be a limiting factor for new fumigants entering the market, especially in the first year where they have no market share record and thus are excluded due to this criterion. ***DPR has revised the proposed regulations and changed from a registrant allocation system to a permittee allowance system.***	
143	High moisture levels at the field surface occur as tree and vine growers try to meet a pre-treatment moisture requirement at the point of injection. DPR has been conservatively selective in the emission percentages they use in section 6452.2. To make matters worse, almost none of the emission studies available to DPR have given attention to fumigant efficacy or definitively measured soil conditions below the six-inch depth during the conduct of their studies. One result of such inattentiveness at the experimental level will be highly variable data sets for emissions. Higher emissions can be a direct result of deep soil moisture content. DPR is broadening the mistake they made in their 1995-96 rulings on 1,3-D which required certain moisture levels above the point of injection. ***DPR has revised the proposed regulations pertaining to soil moisture. However, under the court order DPR must implement regulations to reduce VOC emissions. DPR is not obligated to reduce the impact of this or any proposed regulation to ensure efficacy. The 1,3-D moisture requirements are label requirements, for which DPR has no legal authority to change.***	15
144	The emission factor for a Tarpaulin/Deep/Broadcast will always be less than Tarpaulin/Shallow/Broadcast. Since the Table distinguishes emission fractions to one percent accuracy, a difference should be shown between these cases. This could easily be done with modeling or laboratory experimentation. ***DPR is relying on several dozen field studies to determine the emissions associated with the different application methods, and using surrogate field data where necessary. In some cases these field studies do not agree with laboratory studies. For example, multiple field studies show that depth of injection has no effect for methyl bromide applications, at least within the depth range studied (10-24 inches). Multiple field studies also show that normal tarpaulins have no effect on 1,3-D emissions. Multiple field studies show that bed fumigations have higher emissions than broadcast fumigations for methyl bromide. DPR believes that field studies provide a more accurate estimate of emissions than laboratory studies. Because of the discrepancies between laboratory and field studies, DPR intends to continue to rely on field studies to estimate emissions.***	17
145	An important factor controlling emissions is the soil degradation rate. Soil degradation rate is higher for 1,3-D compared to methyl bromide. Therefore, the emission factor for 1,3-D should be lower than methyl bromide. The 61 percent reported appears to be high based on my experience. I suspect that the study(s) that produced this value was(were) not conducted properly. This is one reason why multiple methods for obtaining flux measurements should be included in all studies. Given the experimental from this experiment, what degradation rate would be required to model/simulate the 61 percent emission rate? Would this value be reasonable? If not, maybe the results of the study should be challenged (or discarded).	17

	DPR believes that field studies provide a more accurate estimate of emissions than laboratory studies. Because of the discrepancies between laboratory and field studies, DPR intends to continue to rely on field studies to estimate emissions. The 61 percent emission factor for 1,3-D is based on field studies conducted by the registrant. This emission factor is lower than field studies for comparable methyl bromide application methods that show emission factors of 80-100 percent.	
146	Soil degradation rate is higher for chloropicrin compared to 1,3-D and methyl bromide. Therefore, the emission factor for chloropicrin should be lower than 1,3-D and methyl bromide. The 44/64 percent reported appears to be high based on my experience. Given the experimental from this experiment, what degradation rate would be required in a model to obtain a 44/64 percent emission rate? Would this value be reasonable? Emission fractions for chloropicrin should decrease with increasing injection depth. ***DPR believes that field studies provide a more accurate estimate of emissions than laboratory studies. Because of the discrepancies between laboratory and field studies, DPR intends to continue to rely on field studies to estimate emissions. The 44/64 percent emission factors for chloropicrin are based on field studies conducted by the registrant. This emission factor is lower than field studies for comparable methyl bromide application methods that show emission factors of 80-100 percent.***	17
147	In the final rule, all the data points, error bars and literature citations should be provided. This would give the reader a feeling for the accuracy of the underlying data, and hopefully build confidence in the rule. ***The April 6, 2007 and September 29, 2007 memos by Barry, Spurlock, and Segawa provide all estimates of emissions, and estimates of errors using coefficients of variation for application methods with multiple studies. The memos cite all of the studies used for the estimates.***	17
148	DPR's inventory seriously overestimates pesticide emissions. In 1991, DPR assumed that for every pound of fumigant used, one pound was released as a VOC emission. Therefore, the corresponding reduction goals mandated by the Judge's order are based on inaccurate data. The linking of fumigant emissions to ozone pollution is very questionable. ***The April 6, 2007 and September 29, 2007 memos by Barry, Spurlock, and Segawa provide estimates of fumigant emissions based on field studies, both for 1991 and later years. Carter and Malkina measured the amount of ozone formation from fumigants (Carter, W.P.L. and I.L. Malkina. 2007. Investigation of Atmospheric Ozone Impact of Selected Pesticides. Final Report to the California Air Resources Board, Contract No. 04-334, dated January 10, 2007. University of California, Riverside. Center for Environmental Research and Technology.)***	18
149	Concern that we have with the proposed regulations is how the growers requesting to make applications will be affected with regards to the acreage to be treated daily will be affected by the daily emissions cap of 3.8 tons/day for our region. There are a minimum number of acres that must be treated within a certain time period to ensure that all acres requiring treatment can be completed.	23

	DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from the base year in the five NAAs . A reduction in acreage may be required to achieve these reductions.	
150	The emissions cap being proposed by DPR may not be correct due to the fact that one of the fumigants in question was not being tracked during the entire duration of you information gathering period which leads many people to believe that our cap should be somewhere above 4 tons/day due to the lack of information gathered. ***All of the fumigants have been tracked since 1990, and 1991 is used as the base year. However, the tracking shows no emissions of 1,3-D, reflecting the regulatory action to deny permits for this fumigant during the base year.***	23
150	We commend DPR for making its interim technical analysis of emission factors available. However, since this analysis is only at an interim phase, it is our understanding that many of the emissions estimates in the models are subject to change based upon new findings of the Department. We respectfully request that DPR wait until sufficient data is collected and analyzed; premature actions will very likely yield loss of certain products or application methods for our growers; alternative products or methods are simply not available. ***The September 29, 2007 memo by Barry, Spurlock, and Segawa updates the technical analysis of emission factors. These factors are unlikely to change unless DPR receives new data.***	25
151	We have great concerns about the allocation system that is partially described. The proposed process is very unclear, so than guess at what may be the process or some other alternative, we strongly advise against this concept. By using the improved application techniques that have been adopted in the past ten years, and by using credible emission factors that have been put forward by registrants, DPR should find that we are in compliance with the 1994 SIP, and thus an allocation system is not needed. ***The September 29, 2007 memo by Barry, Spurlock, and Segawa updates the emission factors. These factors are unlikely to change unless DPR receives new data. This data shows that an allowance system is necessary in at least one NAA to ensure the required reductions are achieved.***	30
152	DPR needs to request new emission study data from registrants they have been advised is available that will provide more accurate VOC emission percentages included in section 6452.2. Using old emissions data penalizes a number of the more viable environmental methods and will force acreage out of production. ***DPR is in the process of initiating a reevaluation to request additional emission studies by registrants.***	31, T21p
153	DPR needs to refine current estimates of emission factors for various methods and methods referred to as "low emission" solutions need to be both practical and economical while still insuring efficacy. Some proposed "low emission" methods, such as water seals, are positioned a significant alternatives but may reduce the efficacy of the product or is impractical. ***DPR has revised the proposed regulations pertaining to soil moisture. However, under the court order DPR must***	31, T21p

	implement regulations to reduce VOC emissions. DPR is not obligated to reduce the impact of this or any proposed regulation to ensure efficacy.	
154	DPR's emission percentages following shank applications have little meaning unless soil conditions are characterized as the data are developed. Any emission percentages will be impacted by the application rate, soil moisture content, depth of application, their degradation rate at that soil temperature and chisel design. Nowhere in these proposed regulations has there been any attention to these important field parameters so how could the emission percentages be anything but guesswork. Rightfully, DPR refers to emission measurements as estimates but by what standard have they decided to pick and choose those data sets that appear most correct? I have never seen any DPR data sets on this subject and have never seen a referred publication of the numbers they eventually choose to determine their emission values. ***DPR's estimates of emissions are contained in the April 6 and September 29, 2007, memos by Barry, Spurlock, and Segawa. The April 6 memo was released for public comment and scientific peer-review. The September 29 memo contains revised emission estimates based on the comments. DPR agrees that application rate, soil moisture, and other factors affect the emissions. The regulations specify maximum application rates, soil moisture and other parameters to ensure that fumigations reflect the study conditions used to estimate emissions.***	15
155	The data currently available for chloropicrin application method with deep non-tarped shank injection, indicate that the emission rate for that method is approximately six times less than that indicated by DPR. DPR has assigned an emission factor of 64 percent but given current agricultural practices, a 10 percent emission factor is more accurate. ***No valid field studies are available to DPR demonstrating the emissions deep non-tarped shank injection of chloropicrin.***	31, 35, T12
156	The proposal establishes that the emission factor for Telone used non-tarp/deep/broadcast at 41 percent. Existing studies show that the average emission factor is 26 percent. ***DPR has modified the regulations to delete the percentage of emissions. The percentage of emission has been changed to 26 percent and is included in the September 29, 2007, memos by Barry, Spurlock, and Segawa.***	31, 34, T14p
157	In its review of study data, DPR did not include the recent studies by USDA-ARS researchers who measured chloropicrin emissions after deep injection. These emission estimates are considerably lower than those currently assigned by DPR. DPR used shallow emission values as surrogates for deep emission values. ***DPR did not find the USDA-ARS study acceptable to determine chloropicrin emissions under field conditions.***	31
158	Ventura Air District achieved the EPA air standard in 2002. The Ventura APCD has reported improved air quality nearly every year since 1994 and achieved the federal ozone standard in 2002. While emissions reductions required by DPR's regulation proposals would force nearly 10,000 acres out of production in Ventura County, it would only reduce total VOC emissions in Ventura by less than two percent. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides by 20 percent from***	31

	the base year in Ventura..	
159	DPR appears to have included inaccurate information when deriving VOC emissions inventories in the memo from Barry et al. to Sanders. Some of the inaccuracies includes: (a) mistaken assumptions used to estimate the frequency at which selected application methods were or are used; (b) questionable methods used to derive average emission estimates for selected application methods; and (c) the omission of valid study data from the pool of available and suitable studies from which emission averages were derived. In addition, it is apparent that the VOC inventories, as a whole, need to be revised. First, the use of data from only 2004 should not be the sole basis for predicting the level of reductions needed to achieve compliance. No single year should be considered representative of pesticide use, due to year-by-year variability in pesticide use patterns, cropping patterns, pest occurrences, land availability, and so on. A three- or five-year average should be used in lieu of data from a single year to better incorporate the effects of year-to-year variability. Second, restrictions (caps) on the amount of fumigants that can be applied hinges on the amount of nonfumigant pesticides that were applied. Preliminary analyses by Industry indicate that the nonfumigant VOC inventories are likely flawed or at least inconsistently calculated. Ultimately, restrictions on application methods and/or the amount of pesticide applied should not be placed into regulation until all of the various VOC inventory issues have been resolved. Only then would we know what actual measures are needed to achieve compliance with the Court Order. ***(a) DPR has revised the use frequency for various methods based on the new information provided by CMTF. (b) DPR has revised its emission estimates for 1,3-D. (c) DPR is relying on several dozen field studies to determine the emissions associated with the different application methods, and using surrogate field data where necessary. DPR considered other studies prior to its initial estimates, and reconsidered them after receiving comments. The current set of studies used in this analysis is the database available. DPR staff has included in this analysis those studies that have been reviewed and accepted as sufficient quality to provide reliable results.*** ***The regulations provide flexibility to use a single year or multiple years of data for nonfumigants to determine the fumigant limits. The nonfumigant VOC emissions are calculated using a consistent method. This is DPR's overriding consideration since the required reductions are expressed on relative percentage basis. To judge compliance for a 20 percent reduction from 1991, the emissions must be calculated consistently both in the base year and later years.***	32
160	The values in the table listing the percentages of VOC emissions for each fumigant is based on the Barry et al. memorandum. This memo arrives at a 17 percent VOC adjustment factor for dazomet by averaging three studies giving percent emission values 4.57, 42.9, and 2.3. DPR places equal weight on each of the three studies even though the information in one study was reported as "small plots" and resulted in an emission calculation that was a factor of ten higher than the registrant studies." ***DPR has conducted a fourth study that is consistent with the "small plot" study showing a factor of ten higher emissions than the registrant studies. DPR could not find cause to exclude any of the four studies, so all were averaged to determine the VOC adjustment factor.***	36

161	In DPR's procedures for flux estimation, calm wind conditions are assumed to have a wind speed of 1m/sec for purposed of flux modeling, which overestimates the flux rate. Therefore, the registrant studies likely represent an upper bound of flux rates. ***DPR does not make any assumptions about wind speed (including a 1 m/sec assumption) to determine the flux (emissions) for a specific study. DPR uses the wind speeds measured on-site during the study to determine the flux rate. DPR does not accept flux studies that do not include on-site meteorological data.***	36
162	Calm conditions may influence the utility of emissions data in modeling flux estimates for determining mitigation measures such as buffer zones, but the quality of the actual emissions data from registrant studies has not been questioned by DPR. However, there are sufficient questions regarding the design and execution of the small plot study to suggest that the results (which differ from the other studies by an order of magnitude) should not be given the same weight in setting the emission factor for dazomet. ***DPR conducted another study with larger plots that found comparable emissions. DPR estimated emissions by averaging the results from all four available studies, including the "small plot" study.***	36
163	WPHA reinforces the need for more comprehensive and inclusive approaches for estimating EF's from field fumigant applications. This would include a serious review of actual measured data from leading scientific researchers at USDA-ARS and University of California. WPHA believes that it would also behoove DPR to consider the results of the Chain 2-D Model used in fumigant studies, since USEPA has given merit for its possible use in their fumigant cluster analysis. This model would be an appropriate and scientifically validated method to better estimate emissions from various fumigant application methods that have limited field study data. ***DPR is relying on several dozen field studies to determine the emissions associated with the different application methods, and using surrogate field data where necessary. In some cases these field studies do not agree with laboratory studies. For example, multiple field studies show that depth of injection has no effect for methyl bromide applications, at least within the depth range studied (10-24 inches). Multiple field studies also show that normal tarpaulins have no effect on 1,3-D emissions. Multiple field studies show that bed fumigations have higher emissions than broadcast fumigations for methyl bromide. DPR believes that field studies provide a more accurate estimate of emissions than laboratory studies. Because of the discrepancies between laboratory and field studies, DPR intends to continue to rely on field studies to estimate emissions.*** ***No flux chamber estimates of emissions, such as USDA-ARS, are used at this time because there are significant technical issues associated with flux chamber estimates including: (1) potentially significant effects on the local environmental conditions where the chambers are placed relative to the field as a whole. This effect may be largest for static chambers but may also affect dynamic chambers, (2) the sensitivity of dynamic chamber results to pressure gradients created by the air flow, and (3) the very limited coverage of the field by the sample chambers which can***	35, T12, T16p

	introduce a high degree of heterogeneity in the flux results. ***DPR believes it is premature to use a first-principle model, such as CHAIN_2D to estimate emissions. DPR may eventually use this or other models to supplement its emission estimates, but the current validation is insufficient and several input variables are difficult if not impossible to estimate.***	
164	Section 6452.3: DPR defines the "ozone season" as May 1 to October 31, which includes 184 days per season. We question the reasoning behind this time period as to where this time frame can be referenced in either federal or state law. For tree and vine operations, most pre-plant fumigant applications occur between September and February, and the exact application time is based on soil moisture levels. The optimal time for deep applications in dried soil is usually between September and mid-November. This timing is dictated by the use of "cover crops" to extract deep soil moisture during the spring and early summer but the applications must occur before late fall rains arrive and saturate the soil too deeply, thus compromising the fumigation. ***The proposed VOC regulations apply to the May 1 to October 31 period because they are implementing the pesticide element of the 1994 1-hour Ozone SIP. That SIP is based on seasonal inventories and the VOC reduction goals of the pesticide element apply, and always have been applied, to that time period. The VOC reduction measures of the 1-hour ozone SIP are seasonal so that it will require all of the reductions needed during the peak ozone season. The May 1 to October 31 period is based on when the State has historically exceeded the ozone air quality standard. Agronomic factors were not considered in establishing this period.***	34
165	In table 24 of the DPR Memorandum addressed to John S. Sanders, dated April 6, 2007, it states that the San Joaquin Valley NAA could not exceed 3.872 tons per day (tpd) in fumigant emissions to realize the 20 percent reduction goal. The 3.872 tpd figure is different from the number that is in the proposed regulation at 3.8 tpd. The San Joaquin Valley should receive the full 3.872 tpd especially if this will be multiplied by 184 (days) to represent the ozone season. It is requested that the above table is corrected to reflect the entire allotment given to this NAA. ***DPR has revised the proposed regulations to update the fumigant limits each year. However, DPR may continue to round down the fumigant limit to account for uncertainties in the projected nonfumigant VOC emissions.***	34
166	It is important to note that a cap already exists for 1,3-D applications under the Township Program, which is based on a first come, first serve system. The township cap is already an allocation process and the allocation cap that DPR proposed would be even more punitive than the township cap. An allocation cap would end up controlling the market which would result in higher prices. If the allocation system were to be administered like the township cap on a first come, first serve basis then it would unfairly favor those operations that use fumigants early in the season while tree and vine growers spend greater time to properly prepare their soils, which require much deep tillage and treatment compared to more shallow-rooted crops. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. The permittee allowance will not be a first-come, first-served system. If the total allowances requested by permittees***	34

	exceed the fumigant limit, the Director will proportionately reduce each allowance to assure the limit is met.	
167	DPR is charged with a court order and SIP to achieve a 20 percent reduction in pesticide VOC emissions in five NAA based on the 1991 inventory. However, it is unclear for the reasoning as to why DPR selected the 2004 nonfumigant inventory to subtract from the 1991 inventory to figure what the VOC emission cap would be for each NAA. In selecting a single year to create, what will be, a non-adjustable limit doesn't provide an accurate representation of pesticide use and an average from multiple years would provide a better representation. ***DPR has revised the proposed regulations to update the fumigant limits each year, based on the most recent data.***	34
168	The allocation system is unworkable and detrimental to production agriculture for a number of reasons. Fumigant registrants must "ensure that the emission limits are not exceeded," yet they lack the authority to do so. According to the memorandum, dated April 6, 2007, DPR can meet emission reduction goals, at least in two of the NAAs, if all fumigants are applied using "low emission" methods. Presumably, fumigant registrants will determine the amount of product they can sell in an NAA based on the assumption that growers will use the "low emission" methods. However, registrants do not have enforcement authority and cannot control what method each grower or applicator uses. Registrants and DPR will only know after the fact if the lowest emission method was used. This problem is exacerbated by the fact that certain low emission methods, for example the three water treatment methods, are in most cases impractical or impossible due to the cost and logistics of water delivery and in addition are not efficacious. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. DPR does not intend for all fumigants and application methods to be viable alternatives in all situations. In cases where there is an insufficient quantity of water, tarping or drip application may be viable alternatives. DPR is not obligated to reduce the impact of this or any proposed regulation to ensure efficacy.***	48, 36
169	Many fumigation strategies employ combinations of fumigants either as mixtures or as sequential applications. Often, more than one registrant's products are used. Growers who wish to make sequential applications of metam sodium and chloropicrin, for example, could find that the allocation for one or the other has been exceeded and be left with half of a fumigation. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system.***	48, 36
170	The factors for determining fumigant emission allocations [6452.3(b)(1)(A)] are not well defined and there is no indication of how the criteria will be utilized in the decision making process. Even if an allocation system is workable, this section should be amended to delete the maximum total pounds of VOC emissions from field fumigations from May 1 to October 31 in the NAAs, or to provide some flexibility in the emissions limitations to allow "credit" for emission reductions achieved by reformulation or reduced use of nonfumigant pesticides. Under the current language, emissions from field fumigation are capped in perpetuity, even if the overall emissions from pesticide use are reduced well below the 20 percent goal.	48, 36

	The scientific basis for fumigant emission factors is still unsettled and will benefit from a more inclusive use of available data as well as additional data development. The implementation of the fumigant emission limits in the regulation should be phased-in to allow for a more refined assessment of emission factors. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. DPR has revised the proposed regulations to update the fumigant limits each year, based on the most recent data for nonfumigant emissions. The September 29, 2007 memo by Barry, Spurlock, and Segawa updates the emission factors.***	
171	By setting very specific amounts of permitted emissions, DPR is limiting the use of soil fumigants based on the current state of knowledge. Based on the experience with the language in the 1994 SIP, it would be wiser to find less limiting language so that the goal is met without defining the exact number. DPR could describe a method for calculating the cap for each year which would allow for factors such as reductions in VOC contributions from other pesticides, or reactivity, etc., to be factored in, if the data becomes available. ***DPR has revised the proposed regulations to update the fumigant limits each year, based on the most recent data for nonfumigant emissions.***	38
172	Section 6452 (a) should be amended to read, "Upon written request, the Director may approve use of a field fumigation method that results in equal to or less volatile organic compound (VOC) emissions than a comparable method specified in section 6452.2(b), or to refine emission factors found in section 6452.2(b) based upon review of available information. The written request must be accompanied by appropriate data supporting the overall VOC emissions rate." New field methods should be allowed as long as the end result is that the fumigant emissions are tracked for the VOC inventory. In addition, the emission factor values for the methods already in section 6552.2(b) need to be open to revision by the Director based upon reanalysis of available information. ***DPR has revised section 6452 to provide the flexibility suggested. However, data for new methods must document that emissions will not increase, not just provide information for tracking. DPR has revised the proposed regulations to update the emission factor values each year, based on the available data.***	41
173	Section 6452.3 (b): DPR mistakenly counts methyl bromide and metam as forerunners of ground level ozone production. They are not VOCs and therefore should not be subject to allocations. ***See response to comment #7.***	45
174	Using 1990 (or 1991) and 2004 as base years for the 2004 SIP does not address seasonal variability in fumigant use. ***This comment is unclear; however, the court order requires DPR to use 1991 as the base year.***	45
175	How do these new directives affect the use of the Technical Information Bulletin (TIB)? ***The Technical Information Bulletin is part of labeling and its provisions must be followed. The TIB contains separate***	45

	and independent requirements from the regulations. If the TIB and these regulations have different requirements, the applicator is required to follow the more stringent requirement.	
176	How do these new rules affect local county permit conditions? Who performs field monitoring and should they be a licensed PCO? ***These regulations are separate and independent from the local county permit conditions already in place. If the local county permit conditions and these regulations have different requirements or limits, the applicator is required to follow the more stringent requirement or limit.***	45
177	How will allocations of 1,3-D affect preexisting township caps already in place? ***These regulations are separate and independent from the township caps already in place. If the township caps and these regulations have different requirements or limits, the applicator is required to follow the more stringent requirement or limit.***	45
178	What happens if agriculture succeeds in meeting its duties for reducing fumigant VOCs, but the area remains in nonattainment? Can DPR continue to ask for stricter cuts even because nonattainment of ozone standards caused from other sources? ***DPR is regulating to fulfill its SIP commitment to a 20 percent reduction in VOCs emitted by agricultural and commercial structural pesticide use from 1990 levels in the five NAAs. To change that goal entails amending the SIP. The Air Resources Board, not DPR, is responsible for the State's plan to achieve the federally mandated ozone standard.***	45
179	Can DPR forecast potential emissions based on PUR data and most likely application methods? DPR plans on using calculated aggregate estimations of fumigant VOC's to regulate all fumigant use. How will they manage the fair and balanced use between May 1st to October 31st for crops, individual fumigants and areas within the nonattainment zone? ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. All permittees will have an equal opportunity to fumigate, and can select the fumigant of their choice. See response to comment #166.***	45
180	Ozone production is not uniform across the May 1st-October 31st. How will DPR's management efforts coincide with changing ozone concentrations? ***DPR is obligated to reduce VOC emissions during the May through October period by a specified amount. DPR is not obligated to reduce ozone concentrations on specific days.***	45
181	Section 6452.3(b)(1): DPR is a regulatory agency and shouldn't be in the pest recommendation business. How will DPR define the needs of individual commodities? Will it be by potential economic loss or the difficulty in controlling the pests involved? Who decides which commodities get what fumigants; UC specialists or the director?	45

	DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. DPR no longer proposes to assess pest management needs. See response to comment #166.	
182	*Section 6452.3(b)(1)(B) Advancement of reduced emission methods.* "Advancement" would have to be measurable. How will advancement be measured? ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. DPR no longer proposes to assess advancement of reduced emission methods.***	45
183	Section 6452.4(b): DPR needs scientific data to accept reduced emission applications and new fumigants. In the flurry caused by trying to meet a court ordered mandate, DPR has lost sight in understanding the real goal is to reduce ground-based ozone--not VOCs. Nonetheless, they propose to reduce VOC emissions with rudimentary mass balance bookkeeping that will regulate fumigant use. There is no scientific evidence that this indirect method will reduce ozone. However, many of their own field regulations (e.g., 0.25 inches or water, 0.90 inches of water, 1 part in 290 gallons) were never scientifically proven for effectiveness in reducing VOC emissions. Why is this so? ***See response to comment #7. Several field studies demonstrate the effectiveness of post-fumigation water treatments in reducing VOC emissions***.	45
184	We are concerned that DPR did not go further and eliminate the sprinkler application method for metam sodium and potassium, another high-emission method that is very commonly used and has resulted in a number of community poisonings in addition to high loading of VOCs to the atmosphere. ***The proposed regulations include requirements for post-fumigation water treatments when sprinkler applications are made during May-October within the NAAs needing additional reductions. The post-fumigation water treatments significantly reduce the emissions from sprinkler applications.***	46
185	We are strongly supportive of DPR's proposed restriction of metam fumigation activities to daylight times. We are concerned however, that escape of MITC from the soil is still very high one hour after the application ends, which suggests that stopping a fumigation one hour before sunset will not be effective in achieving the goal of dilution of VOC emissions from fields. We suggest instead that the allowable application period be shifted back one hour, with applications allowed to start at sunrise and required to stop *two* hours before sunset. This requirement will also help the CACs with enforcement activities. Since inspections are rarely conducted after normal working hours, nighttime applications are a potential source of major violations that would easily escape inspection and notice. Limiting applications to daytime hours will allow CACs to do a more comprehensive job of inspecting fumigant applications. To better protect air quality, this restriction should be taken further and also prohibit fumigation during daylight hours on "No Burn" and "Spare the Air" days. ***The specified time restrictions are designed to prevent applications during stable atmospheric conditions that occur at night. Atmospheric conditions are never stable two hours prior to sunset, so this additional restriction is not necessary.***	46
186	We strongly support the methodology of requiring multiple waterings for metam sodium applications (s. 6450.1d2). In	46

	order to ensure compliance, DPR should require applicators to verify the availability of sufficient water from the irrigation district for these applications in the Notice of Intent. ***Availability of water is only an issue in certain areas. Instead of modifying the regulations, DPR will consider suggesting permit conditions to address this issue in certain situations.***	
187	In addition, we are very concerned about the reliability of emission factors for Telone and chloropicrin applications followed by multiple waterings because they are extrapolated from metam sodium studies. ***DPR assigned the emission factors (ratings) for these methods based on extrapolated data. DPR will shortly initiate a reevaluation to request monitoring studies for these specific application methods.***	46
188	We support the proposed requirement to restrict applications of pure chloropicrin tarped methods because this will reduce the risk of poisoning incidents from off-site drift but we think the regulation should go further and completely prohibit pure chloropicrin applications because of the high risk of severe eye and respiratory irritation from off-site drift. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides. While the proposed regulations are not designed to mitigate health impacts, they will provide an increased margin of safety for exposure. The Department is working on evaluating and developing exposure controls for chloropicrin.***	46
189	Emission caps in the proposed regulations are only in effect from May 1 through October 31st. This contradicts the duty in the SIP to reduce emissions year-round rather than just in the so-called "ozone season". In the San Joaquin Valley the one-hour ozone standard was exceeded in March this year. ***The proposed VOC regulations apply to the May 1 to October 31 period because they are implementing the pesticide element of the 1994 1-hour Ozone SIP. That SIP is based on seasonal inventories. Under that SIP, as approved by EPA, VOC reductions are, and always have been, measured over the six-month ozone season. Likewise the VOC reduction goals of the pesticide element of that SIP apply, and always have been applied, to that time period. The VOC reduction measures of the 1-hour ozone SIP are seasonal so that the all the reductions needed are required during the peak ozone season.***	46
190	Tables in section 6452.2 create tremendous angst. This section is too important for DPR to simply offer an initial list with exaggerated emission factors, and leave important methods of application off the list for now; to be fixed later. ***DPR has included all methods that have data to support an emission factor. DPR has revised the proposed regulations to update the emission factors on an annual basis, based on the available data.***	30
191	We strongly disagree with the statement in the initial statement of reasons (page 22) that "Current DPR regulations and U.S. EPA label restrictions that are designed to prevent acute or chronic toxic exposure are sufficient to avoid any adverse effects of toxic emissions from any increased use of fumigants in the months preceding or following the ozone season that may result from shifting the timing of applications." DPR is currently reevaluating chloropicrin because of exposure	46

	concerns raised in toxicology and air monitoring studies and the MITC TAC Report of 2002 shows that current regulations and label restrictions are inadequate to protect the public living or working near fumigated fields from acute or longer term health effects, including eye irritation and respiratory effects, and that short-term exposures may contribute to asthma and other reactive airway disorders in children and other sensitive populations. The U.S. EPA is currently soliciting comments on fumigant exposure mitigation options because the Agency's draft risk assessments for methyl bromide, chloropicrin, and metam sodium//potassium show that worker and bystander acute inhalation exposures under current label use conditions exceed levels of health concern and require mitigation. ***DPR's legal obligations under the SIP and court order are to reduce VOC emissions from pesticides. While the proposed regulations are not designed to mitigate health impacts, they will provide an increased margin of safety for exposure. DPR will shortly issue statewide guidance for restricted materials permits for MITC to CACs that will further reduce exposures. DPR is working on evaluating and developing exposure controls for chloropicrin.***	
192	DPR should use a more comprehensive and inclusive approach for estimating emissions from field applications of fumigants. DPR should consider the results of appropriate modeling (e.g., CHAIN-2D) to better estimate emissions from methods that have limited field study data. ***DPR is relying on several dozen field studies to determine the emissions associated with the different application methods, and using surrogate field data where necessary. In some cases these field studies do not agree with laboratory studies. For example, multiple field studies show that depth of injection has no effect for methyl bromide applications, at least within the depth range studied (10-24 inches). Multiple field studies also show that normal tarpaulins have no effect on 1,3-D emissions. Multiple field studies show that bed fumigations have higher emissions than broadcast fumigations for methyl bromide. DPR believes that field studies provide a more accurate estimate of emissions than laboratory studies. Because of the discrepancies between laboratory and field studies, DPR intends to continue to rely on field studies to estimate emissions.*** ***No flux chamber estimates of emissions, such as USDA-ARS, are used at this time because there are significant technical issues associated with flux chamber estimates including: (1) potentially significant effects on the local environmental conditions where the chambers are placed relative to the field as a whole. This effect may be largest for static chambers but may also affect dynamic chambers, (2) the sensitivity of dynamic chamber results to pressure gradients created by the air flow, and (3) the very limited coverage of the field by the sample chambers which can introduce a high degree of heterogeneity in the flux results.*** ***DPR believes it is premature to use a first-principle model, such as CHAIN_2D to estimate emissions. DPR may eventually use this or other models to supplement its emission estimates, but the current validation is insufficient and several input variables are difficult if not impossible to estimate.***	44
193	The 24-hour emissions doubling procedure DPR used to estimate total emissions does not appear to be the most appropriate	44

	approach for determining estimates, nor are DPR's results from this approach consistent with the available data for which emissions were measured over longer time periods (n days to no-detection). The emissions estimates must be based on the best available science, which includes the approaches used to derive a representative average emission estimate from the available and appropriate datasets. ***Doubling the 24-hour emissions to estimate the total emissions from methyl bromide fumigations represents DPR best estimate with the available data. DPR will shortly initiate a reevaluation to request more comprehensive data from the registrants.***	
194	DPR has not fully evaluated the data on the emission factors for various fumigants and has made some incorrect assumptions regarding the frequency of current application methods and the emission factors for various application methods. There are significant questions regarding the accuracy of the DPR estimates of both the baseline and comparison year estimates for fumigant and nonfumigant VOCs. DPR should consider incorporated a phased approach into the regulations. ***The September 29, 2007 memo by Barry, Spurlock, and Segawa updates the emission factors and method use frequencies based on comments and new data received.***	47
195	In section 6452.2, the emissions factors DPR developed for the 1,3-D soil injection methods need to be revised. It is inappropriate to assume that emissions are linear with depth beyond the range from which they were measured. In this case DPR made an assumption that emissions were linear to the surface, and then linearly extrapolated shallow field data points to deeper depths at this artificial slope. ***DPR has removed the table of emission percentages by method from the regulations and will be reporting it the Annual Emissions Inventory Report. DPR has revised the emissions for 1,3-dichlorpropene, and no longer assumes that emissions vary linearly with depth.***	41
196	Variable emission factors based upon the actual injection depth and time of season for an air basin can be used rather than a single value for the various broadcast shank injection application methods. ***DPR disagrees with the comment on the basis that it is impractical to regulate on the basis of variable injection depths.***	41
197	Field methods using continuous coverage of film tarpaulins possessing high-barrier properties should be given 1,3-D emissions-reduction credit. DPR should define tarpaulin barrier potential based upon the mass transfer coefficient property intrinsic to the material with regard to 1,3-D. Certain tarpaulin films exhibit high barrier properties with regard to 1,3-D emissions. DPR should provide for their use as a field method with an appropriate emissions factor related to their barrier properties. Because commercial agricultural tarpaulin films vary with regard to barrier properties for 1,3-D, DPR should set performance standards for the film based upon their intrinsic mass-transfer-coefficient property. ***DPR does not have any data to support a reduced emission rating for a high barrier tarp. Regulation language leaves***	41

	open the possibility that innovation in application methodology can be used to modify factors in the future	
198	The Maximum Total Pounds of VOC Emissions by NAA should be derived using an appropriate average of nonfumigant pesticide emissions rather than creating limits based solely on 2004 data. A single year is not representative of nonfumigant pesticide emissions because use fluctuates. The emissions inventory of nonfumigants must also be refined to accurately reflect atmospheric availability before they are used to set limits for fumigant emissions. ***DPR has revised the regulations to update the fumigant limits each year based on the most recent data for nonfumigant emissions. The regulations give DPR flexibility to use a single year or multiple years of data for nonfumigants to determine the fumigant limits. DPR is using the best available data to estimate VOC emissions from nonfumigants.***	41
199	The Maximum Total Pounds from the VOC Emissions table truncates allowable pounds to the tenths of tons per day. Values should be carried out to the thousands place and the maximum pounds allowed increased accordingly. ***DPR has revised the regulations to update the fumigant limits each year based on the most recent data for nonfumigant emissions. DPR will continue to use rounding to determine the fumigant limits due to uncertainties in the estimates and projected emissions.***	41
200	Section 6452.2 - Variable field method emission factors based upon the actual injection depth and time of season for an air basin can be used rather than a single value. Over 60 percent of the 1,3-D is used after September 1. Using variable emission factors would more accurately characterize actual emissions. ***DPR agrees that the variability in flux rates (emissions) between applications is large. For fumigants and application methods with multiple studies, the standard deviations of the emissions are approximately 50 percent. DPR has chosen to use the average flux rates to estimate emissions for three reasons. First, the emission inventory represents the aggregate emissions from all agricultural and structural pesticide applications within a region over several months. The average flux rates represent the most accurate estimate of aggregate emissions. Second, all pesticide applications included in DPR's inventory represent its most accurate and consistent estimate of emissions, for both the base year and subsequent years. Using a consistent method to estimate emissions is essential for making relative comparisons and determining compliance with the SIP commitments. Using the most accurate estimates for some applications and high-end estimates for other applications would skew the inventory and make relative comparisons unreliable. Third, even if DPR were to use high-end emission estimates, they would affect both current emissions and emissions for the 1991 base year. Estimates of the 1991 base year emissions are generally more uncertain than current emissions. DPR would likely apply a larger uncertainty factor to the 1991 base year than current emissions, and the emission reductions achieved would be larger than currently estimated using the average flux rates.***	41
201	DPR should take into consideration the emission inventory of integrated pest management activities that have lowered on farm emission factors since 1990. This should be part of meeting the 20 percent reduction goal. Since 1990, the average application rates have been reduced by approximately 10 percent.	31

	DPR does take into account integrated pest management activities that reflect reduced use and emissions.	
202	DPR's findings are lacking in evidentiary support and are procedurally unfair. DPR proposes specific guidelines for fumigant quantities to achieve the court mandated 20 percent reduction in VOC emissions. Unfortunately, the data upon which DPR is relying in calculating this reduction is, in our opinion, flawed. In fact, DPR's own Research Scientists indicate that the record is incomplete – "It is likely, if not certain, that DPR will revise its application method adjustment factors, method use fraction estimates, and the proposed regulations based on peer review and public comment." At present, DPR assumes 100 percent of applied fumigants volatilize to the air. However, other studies reviewed by DPR staff show that emissions vary from 9 to 100 percent of the amount applied, depending on the fumigant and application method. Those studies demonstrate that the assumption of 100 percent fumigant emission to the air is inaccurate in most cases. Either the information is lacking or DPR is in the process of changing/updating the methodology for determining the percentage of applied fumigants that volatilize into the air. ***DPR does not assume that 100 percent of the applied fumigant volatilizes to the air. DPR's April 6, 2007 and September 29, 2007 memo by Barry, Spurlock, and Segawa show the emission estimate for each fumigant and application method.***	45
203	Appreciate that DPR is incorporating the breakdown of soil fumigants in the calculations of emissions. However, DPR needs to ensure they have carefully reviewed all of the available studies and incorporated the results in the emission factor calculations. DPR needs to ensure that extrapolations are used only in situations where date is truly lacking or of poor quality. ***DPR is relying on several dozen field studies to determine the emissions associated with the different application methods, and using surrogate field data where necessary. DPR considered other studies prior to its initial estimates, and reconsidered them after receiving comments. The current set of studies used in this analysis is the database available. DPR staff has included in this analysis those studies that have been reviewed and accepted as sufficient quality to provide reliable results. The included studies were conducted at a variety of locations under a variety of meteorological conditions and over the entire year. The variety of locations, application methods, and meteorological conditions are varied in large part due to the diverse nature of agriculture in California.***	38
204	It's our understanding that some safety factors were incorporated into the calculation of the emission factors. In contrast to regulations for direct impacts on human health, this regulation is simply about calculation the amount of emissions that occur, and safety factors are unnecessary for this type of calculation. ***No safety factors were included in the calculation of emission factors***.	38
205	An emission factor for deep broadcast (or strip) with a tarp needs to be included for methyl bromide. ***Deep broadcast tarp method was allowed under DPR's original proposed regulations and is still allowed under the revised proposed regulations. Deep broadcast tarp strip method is prohibited in the San Joaquin Valley, Southeast Desert, and Ventura NAAs between the time period of May 1 through October 31.***	38

206	As nontarp deep broadcast or strip is the most commonly used method for applying Telone in tree replant situation, it is critical this emission factor be correct. ***DPR has revised the emission factor for this method.***	38
207	For chloropicrin, why do deep and shallow applications have the same emission factors? Experience is that deep applications decrease the amount of fumigant emitted. Do the chloropicrin with methyl bromide emission factors apply to the small amounts of chloropicrin added to methyl bromide as a warning agent or just when chloropicrin is mixed in as a soil fumigant? What are the emission factors for chloropicrin if no tarp is used? ***No valid data is available for this application method. DPR uses data for methyl bromide as a surrogate. Methyl bromide data shows no difference in emissions with depth.***	38
208	The emission controls only apply from May 1st through October 31st. Controls to reduce use need to be in place all year around because, although our ozone is only a problem in the summer, we would also see benefits from reduced use in pesticides all year, especially with toxic exposure to local communities. ***The proposed VOC regulations apply to the May 1 to October 31 period because they are implementing the pesticide element of the 1994 1-hour Ozone SIP. That SIP is based on seasonal inventories. Under that SIP, as approved by EPA, VOC reductions are, and always have been, measured over the six-month ozone season. Likewise the VOC reduction goals of the pesticide element of that SIP apply, and always have been applied, to that time period. The VOC reduction measures of the 1-hour ozone SIP are seasonal so that the reductions needed during the peak ozone season are required.***	T8p, T10p, T11p
209	DPR proposes to cap fumigant emissions based on total use times the emission potential (EP) of the fumigant times the fraction of the total number of pounds of fumigant pesticides applied that DPR estimates are released to the air basin after the application (the Application Method Adjustment Factors [AMAF]); however, the proposed caps are meaningless if the AMAFs do not reduce emissions as DPR predicts, indicating that the regulation will not succeed in bringing DPR into compliance with the Court Order and the SIP for pesticide VOCs. ***The proposed caps are not meaningless, but would be different if there are errors in the application method adjustment factors. DPR staff has included in this analysis those studies that have been reviewed and accepted as sufficient quality to provide reliable results. The studies were conducted at a variety of locations under a variety of meteorological conditions and over the entire year. The variety of locations, application methods, and meteorological conditions are varied in large part due to the diverse nature of agriculture in California. The current set of studies used in this analysis is the database available.***	46
210	The AMAFs were calculated from field fumigation experiments conducted by the regulated industry primarily under weather and temperature conditions that are unrepresentative of prevailing conditions in California. Our primary concerns center around use of studies conducted at low soil temperatures and use of studies with improper sampler placement.	46, T7p

	DPR staff agrees in concept that temperature is important. However, DPR's work with methyl bromide applications throughout the year found that winter applications can show high flux, high emissions, and high air concentrations. In fact, analysis of the relationship between Julian date of the application (as a surrogate for temperature) and the percentage of emissions (emission ratio) for monitored applications shows no significant relationship between emissions and day of application. A measurable temperature effect should be clearly discernable by a regression analysis. Thus, a simple, clear relationship between temperature and flux is not supported by the DPR methyl bromide database. More likely many factors act together and, thus, the more global approach that DPR has taken to estimating the AMAF's is more appropriate.	
211	Natural variability in flux rates is large, but unaccounted for by DPR emission estimates. The inherent variability in flux rate (the rate at which the fumigant escapes from the soil) is large, thus a *single* study--or even several studies--will not provide an accurate estimate of actual emissions. It is not uncommon for flux rates for different field fumigation studies, even those conducted under very similar application conditions, to vary by a factor of two to four. ***DPR agrees that the variability in flux rates (emissions) between applications is large. For fumigants and application methods with multiple studies, the standard deviations of the emissions are approximately 50 percent. DPR has chosen to use the average flux rates to estimate emissions for three reasons. First, the emission inventory represents the aggregate emissions from all agricultural and structural pesticide applications within a region over several months. The average flux rates represent the most accurate estimate of aggregate emissions. Second, all pesticide applications included in DPR's inventory represent its most accurate and consistent estimate of emissions, for both the base year and subsequent years. Using a consistent method to estimate emissions is essential for making relative comparisons and determining compliance with the SIP commitments. Using the most accurate estimates for some applications and high-end estimates for other applications would skew the inventory and make relative comparisons unreliable. Third, even if DPR were to use high-end emission estimates, they would affect both current emissions and emissions for the 1991 base year. Estimates of the 1991 base year emissions are generally more uncertain than current emissions. DPR would likely apply a larger uncertainty factor to the 1991 base year than current emissions, and the emission reductions achieved would be larger than currently estimated using the average flux rates.***	46
212	DPR is using 24-hour flux rates to estimate emissions; however, nighttime field emissions are not exposed to sunlight, a necessary catalyst for most ozone-forming reactions. Thus, a 24-hour average flux rate will underestimate peak ozone-forming potential during the day. Because ozone exceedances are determined for 1-hour and 8-hour time periods, the studies should be reevaluated for shorter time periods. One-hour data is not available for most studies, but it would be possible to do 4-hour and 8-hour averages to obtain a more realistic estimate of peak flux during the daytime. ***DPR lacks the data for all but a few pesticides to determine 4-hour or 8-hour peak emissions. Using a consistent method to estimate emissions is essential for making relative comparisons and determining compliance with the SIP commitments. Using peak emissions for some, but not all applications would skew the inventory and make relative comparisons unreliable.***	46

213	DPR's approach of using a limited number of industry-conducted studies with low emission rates as representative of emissions from all applications of that fumigant is unscientific and results in reduction estimates that are greater than actual reductions. Instead of waiting until the calculations are re-done with more representative field studies, DPR should remove the AMAF from the calculation of fumigant emissions reductions and require 20 percent reduction in use from 1991 use instead. ***DPR does not rely solely on industry-conducted studies to estimate emission rates. DPR also uses academic, government, and its own studies to estimate emissions. DPR disagrees that its estimates are unscientific and result in greater than actual reductions. The April 6 and September 29, 2007 memo by Barry, Spurlock, and Segawa describe several dozen studies that measured emissions from commercial applications. DPR believes that these studies provide a reliable estimate of emissions. The U.S. Environmental Protection Agency reviewed these same studies and included them in their risk assessments. The April 6 memo was peer-reviewed, and the comments led to the changes reflected in the September 29 memo. The described studies conclusively demonstrate that different application methods have different emission rates.***	46, T7p
214	DPR has not presented any evidence supporting its estimates of historical application methods used for fumigant applications, nor has it made public the details of the process by which this information was obtained. ***DPR provided a detailed explanation of its method for determining the frequency of use of historical fumigant application methods in its memorandum from Barry, Spurlock, and Segawa to Sanders, dated April 6, 2007 and September 29, 2007.***	46
215	If these purported low-emission methods are truly reducing emissions, then a reduced application rate should suffice to fumigate the soil; therefore, for any "low-emission" methods, DPR should reduce the maximum allowable application rates substantially, to the minimum rate required for efficacy. ***The minimum rate for efficacy is not known because it was not measured for many of the studies. Growers already have incentive to use the minimum application rates because of the higher cost associated with higher application rates. This regulation will provide growers greater incentive to use the minimum application rates in order to maximize the number of acres that can be fumigated.***	46
216	Why hasn't DPR considered reactivity in calculating the resulting ozone from VOC emissions? ***See response to comment #7.***	45, T17p
217	Metam sodium and metam potassium applications assume a 100 percent conversion to methyl isothiocyanate (MITC). The basis for VOC emissions came from methyl isothiocyanate percentage produced. DPR assumes 100 percent [potential] conversion of metam to MITC. DPR fails to consider the reaction from metam sodium to MITC is rarely 100 percent. DPR has created single emission values for both metam sodium and metam potassium. Yet, these products have different	45

	potentials for MITC emissions. Interestingly, there has been no research on metam potassium. Despite this, DPR is regulating its use. ***DPR assumes 100 percent conversion from metam-sodium to MITC to make the emissions accounting simpler and more transparent. DPR assumes 100 percent conversion for all applications, including those in the 1991 base year. Since DPR must reduce VOC emissions by a relative amount of 20 percent from 1991 levels, the assumption of percent conversion has no effect on the emission ratings.*** ***DPR lacks the data to determine if metam-sodium and metam-potassium as well as certain application methods have different emissions. DPR used its best judgment to combine data or use surrogate data to determine the emission ratings. DPR will update the emission ratings each year as new data becomes available.***	
218	We hereby incorporate testimony by reference that growers in Ventura have already adopted the lowest emission methods available - reducing emissions per acre by over 80 percent compared to 1991; and that the regulations impact of requiring over 33 percent of the fumigated acreage in Ventura to stop using fumigation will result in the inability of those growers to convert to alternative crops and instead will force that land to be converted to urban development. ***Data available to DPR indicates that most, but not all growers, have adopted the lowest emission methods available. DPR acknowledges that additional VOC reductions will be necessary even when all growers adopt the lowest emission methods available, possibly leading to a decrease in fumigated acreage.***	47
219	When the 1994 SIP was approved, the most common fumigation technology resulted in 74 percent emissions. Projects showed that drip technology could both reduce the amount of fumigant needed to be used, and that the drip technology also reduced the emissions from 74 percent down to 22 percent. Compared to the standard technology used in 1994, the new drip technology is at least 80 percent cleaner. Over 95 percent of the strawberry acreage in Ventura now use the lowest emission methods identified by DPR for each fumigant applied ***See response to comment #218.***	47
220	Relative to Metam Sodium or Potassium, there are no studies available that have measured VOC emissions from a metam application. ***DPR lists several studies in the April 6 and September 29, 2007 memos by Barry, Spurlock, and Segawa.***	43
221	It is not necessary to go through the process of obtaining a research authorization if a new method of application is to be trialed provided that there is a limit on the acreage involved (similar approach to that of the 10 acre limit for exploratory trials involving new formulations or crops under federal regulations). ***This comment seems to refer to a Federal experimental use permit rather than a California research authorization. These regulations specify the allowed application methods. A research authorization is required for any application that***	43

	does not comply with regulations or label requirements.	
222	There is no definition or guidance on what is meant by "comparable method". The "new" method may have higher emissions than say, drip applications, but is for use in situations where drip cannot be used. Unless DPR is saying that no new method can be introduced unless its emission rate is less than the lowest one of the current methodologies, more guidance will be needed. DPR should take into consideration that a "new" methodology may have a higher emission rate than a "comparable method" but it may also be the only one that works in the field. Provided the overall level of emission per NAA is not exceeded there should be provision for this approach. ***DPR has revised the regulations to clarify the criteria to allow use of a fumigation method not described in the regulations. The regulations no longer refer to a "comparable method."***	43
223	The increased fumigant use does not necessarily increase the levels of ozone production. This is true only if one assumes that ozone formation is directly related, without exception, to VOC emissions. ***DPR's legal obligation is to reduce VOC emissions by specified amounts, not reduce ozone by specified amounts.***	43
224	Nontarpaulin/Shallow/Broadcast or Bed is the equivalent of a metam shank application. It appears that DPR used default values instead of good science. The metam emission values for one and three seals are 77 and 21 respectfully. This is a large spread in efficiency. Why hasn't DPR considered [two] water seals as an alternative? ***DPR has revised the regulations to incorporate metam fumigations with two post-fumigation water treatments, based on new data received.***	45
225	With respect to the 1991 baseline emission inventory, it is fatally flawed because it dramatically underestimates nominal demand and use of fumigants (in terms of both pounds emitted and from an economic perspective, acres treated) by the omission of or lack of accounting for the absence of 1,3-D use due to a suspension of permits for this compound at this time. The inherent demand for fumigants in terms of pounds and acres that require treatment on an annual basis are underrepresented in the baseline emission inventory by up to 20 million pounds. This impact is particularly significant in the San Joaquin Valley, where much of the 1,3-D use occurred prior to April of 1990 and occurs again today. DPR and ARB have adjusted the 1991 baseline and inventories to more accurately reflect emissions, but this critical omission related to 1,3-D must be corrected. ***See response to comment #19.***	41
226	The 1991 baseline is further flawed by reliance on unrefined default VOC Emission Potential (EP) values for nonfumigant pesticides. Chlorpyrifos provides just one example of how the 1991 baseline may be underestimated. Following the DPR data call-in for estimated VOC emissions potential for current formulations, DPR retroactively updated the emissions inventory, but only for products with the same US EPA registration number as the data call-in. Many of the Lorsban	41

	emulsifiable concentrate products in 1991 were registered under different registration numbers and consequently were not revised from the default value of 39 percent. The emissions potential (EP) of those products, as determined by the Thermogravimetric Analysis method, would be more similar to the 49-51 percent EPs of current formulations than the 39 percent default values. In this one example, the reliance on a default value likely underestimates the 1991 baseline by approximately 200,000 lbs. This may not be an isolated situation and the baseline inventory may be artificially low for other molecules as well, resulting in an inappropriately low emissions goal for 2004. ***The emission potential for Lorsban products used in 1991 is not known, and it's speculative to assume that the emission potential is 49-51 percent. Without data, DPR uses its standard default value of 39 percent.***	
227	"Pesticide Volatile Organic Compound Emission Adjustments for Field Conditions and Estimated Volatile Organic Compound Reductions - Initial Estimates". April 6, 2007. I feel compelled to respond to several stakeholders' concerns that DPR is rejecting flux chamber data in drafting the new VOC regulations based on a paper I authored (Yates, 2006). In no way did I mean that chambers are inappropriate devices to measure fumigant emissions. ***As presented in a previous response, DPR did not use flux chamber estimates of emissions, such as USDA-ARS, at this time because there are significant technical issues associated with flux chamber estimates. See response to comment #163.***	16
228	While DPR's emissions estimate for bed injections (high or low permeability tarpaulin or no tarpaulin) and shallow injection with low permeability tarpaulin broadcast are credible, DPR's estimates for deep methyl bromide injections, with or without tarpaulin, are inconsistent with their own study data and the available open literature. Contrary to DPR's position that shallow and deep injection emission estimates should be pooled between these two categories due to lack of significant difference, there are sufficient data to distinguish between shallow and deep injection emissions for methyl bromide, and this is clearly visible in the data tables presented by DPR in the April 6 memo. ***There are no field studies measuring the emissions of tarpaulin-deep injection applications of methyl bromide. Numerous field studies comparing tarped and untarped shallow injection shows that untarped applications have significantly higher methyl bromide emissions. Using the shallow injection data as a surrogate for deep injection, DPR believes that prohibiting untarped applications will significantly reduce VOC emissions. DPR did not use flux chamber estimates of emission or column studies because there are significant technical issues associated with these estimates. The regulation has provisions to update and revise the emission estimates if field data for deep-untarped applications becomes available.***	44
229	The proposed mandatory use of tarps would create an unnecessary waste of resources and materials. DPR should reconsider its proposed elimination of this application method given the relatively low contribution to VOC emissions. DPR should also re-evaluate the emission rates of methyl bromide and identify more accurate rates. These rates should be summarized to provide understandable and accurate input data that can be used in subsequent calculations	44

	The data available to DPR shows that tarpaulin fumigations have significantly lower emissions compared to untarped applications.	
230	The Alliance does not agree with all the percentage emission factors given in the table at section 6452.2(b). While recognizing that definitive emission studies are not necessarily available for all listed application methods it is not unreasonable to extrapolate results from one application scenario to another. For instance, if it is accepted that water treatments provide a useful method of reducing emissions and that three water seals reduce the emissions to approx 20 percent, it is difficult to understand why a flood treatment would not give a similar effect. Nonetheless, DPR has defaulted to a figure of 77 percent. The Alliance would also like to point out that the current table makes no mention of the two water treatment options that are detailed in DPR's own mitigation proposals. This omission should be corrected. ***DPR has no data for the flood method. DPR believes that it is inappropriate to use the sprinkler with 3-water treatments as a surrogate. The water treatments contain no fumigant and are used to suppress the VOC emissions. The flood method uses no additional water to suppress emissions.*** ***DPR has revised the regulations to include metam applications with two post-application water treatments based on a recently submitted study.***	43
231	Based on the use of applicable field studies and applying emissions computation methodology developed in consultation with DPR (e.g. incorporating CALPUFF 6.0), the table included in the comments (but not presented here) shows the computed percent loss values of MITC following metam-sodium application as a function of application and sealing methods. ***DPR staff believes that it is premature to use CalPuff-derived emission estimates. DPR does not have all the information needed to complete an in-depth review of either the CalPuff modeling or the calculations used to derive the emission estimates in the table included in the comments.*** ***Several of the studies listed by the commenter are not available to DPR.***	43
232	They seem to not regard the extensive data that the Department has relative to flux emission rates and emission levels, that we have a robust data set with Methyl Bromide. We think both the emission rates and the emission levels are off by significant factors. That's supported in the charts of our written testimony. There's other assumptions such as the assumption that, well, maybe half of the strawberry stuff is bed and half is flat. That's an old assumption. It's nearly a hundred percent flat and tarped in the attainment areas. Use of the singular 2004 and the '90-'91 years as kind of our target years, we certainly concur with the problems of '90-'91 with no 1,3-D. But we don't know this has to use single-targeted years that have problems, given the flexibility or the variability from year to year. We think certain averaging would be far more scientific. ***DPR disagrees with the estimates of emission rates. DPR has revised the regulations to update the fumigant limits each***	T17p

	year based on the most recent data, including frequency of use of the various methods. The regulations give DPR the flexibility to determine the fumigant limits based on a single year or multiple years of data for nonfumigants.	
233	The only way to truly reduce the emissions from fumigants would to be reduce the actual use. There's a lot of things we can do as individuals to reduce air pollution. But since fumigants are the fourth larges contributors to smog here in the valley, the responsible parties should do their part to reduce the pollution that they are creating. ***DPR disagrees that the only way to reduce emissions is to reduce use. Dozens of studies demonstrate different emissions for different fumigants and application methods. Changing to lower emission methods will reduce VOC emissions.***	T11p
234	Emission factors for chloropicrin are not consistent with the existing data. ***DPR disagrees.***	42
235	Another source of underestimation of impact is the reliance on 2004 fumigant data alone. A critical portion of this regulation is the allocation approach described in Section 6452.3. If such a system were to be implemented, the criteria described to be used to determine allocations to registrants are unclear. Given the complexity of the components of this regulation and the negative consequences of their promulgation without proper refinement, the maximum total pounds of emissions from field fumigations should not be established for 2008. More logically, a three-year, or some other appropriate, phase-in period should be incorporated into the regulations in order to refine the 1991 baseline and current nonfumigant emission estimates, as well as incorporation of refined fumigant application methods. ***DPR has revised the regulations to update the fumigant limits each year based on the most recent data. The regulations give DPR the flexibility to determine the fumigant limits based on a single year or multiple years of data for nonfumigants.*** ***DPR has revised the regulations to change from a registrant allowance system to a permittee allowance system.***	41
236	The proposed adjustment of the Pesticide Emission Inventory for application methods substantially overestimates emission reductions since 1991. ***DPR disagrees.***	T10p
237	We're fumigating five feet deep. DPR says you open that lid, one hundred percent is going to come off. If you require moisture here, it doesn’t stay as a seal. These are current requirements that are in trouble already because they're requiring too much moisture here. When it degrades it doesn't move anywhere, you don't get emissions, it's there. Forget this water stuff that's going on and put the product deeper. ***The April 6 and September 29, 2007 memos by Barry, Spurlock, and Segawa describe the data and emissions associated with each application method. The studies included in the estimates include emissions measured over several days, and accounts for emission reductions due to degradation. Only a few methods have emissions of 100 percent. DPR does not***	

	intend for all fumigants and application methods to be viable alternatives in all situations. In cases where the additional water requirements are not viable, tarping or drip application may be viable alternatives.	
238	We're not confident that real world emissions reductions will be as large as those obtained under study conditions and our letter will point out some specific places where we're particularly concerned about that, such as the difference in cool temperature study conditions versus high temperature, actual conditions, which is precisely the circumstances under which ozone formation is most likely to occur. ***See response to comment #210.***	T20
239	The trend from 1990 to 2004, which is the most recent DPR document I have on this, October 26th, 2006, is really actually Ventura is one of the most dramatic way, increasing total pounds per day pesticide emissions. And when you look at another document it looks like 92 percent of all those emissions are from fumigants, the other eight percent being other pesticides like Chlora Peroxide let's say. And again that's a DPR report from April 2005. So anyway, this appearance that's sort of like the best available control technologies is leading towards a better and better situation just doesn't fit with my understanding of the overall trend. ***DPR has revised its emission estimates, as described in the April 6 and September 29, 2007 memos by Barry, Spurlock, and Segawa.***	T20
240	Were concerned about the delegation of the management of emissions caps to registrants and believe that for an accountable and transparent process that should be handled by DPR. ***DPR has revised the regulations so registrants are no longer responsible for allocating or tracking emissions. DPR and county agricultural commissioners are responsible for tracking and ensuring that the fumigant limits are met through allowances issued to permittees.***	T20
241	The Coalition for Clean Air feels that the proposed regulations undermine the Governor's commitment to cut air pollution in half by 2010 and ignore a court order obligation to adopt pesticide regulations. The proposed adjustment to the Pesticide Emission Inventory for application method substantially overestimates emission reductions since 1991. Many studies used to estimate emission levels for different application methods in this proposal were conducted under cool weather conditions, which reduce emissions. Actual emissions are underestimated because staff has used average results from studies for some fumigant application methods and results from single studies for other methods. ***See response to comments #210 and #211.***	T14
242	The draft regulations also include caps on pesticide emissions. We believe this is a positive step towards reducing those emissions. However, we feel that this doesn't go far enough. The limits on pesticide use would be more effective and more enforceable. Additionally, the emission controls only apply from May 1st through October 31st. Controls to reduce use -- the control to reduce the use need to be in place year round.	T14

	Dozens of studies demonstrate different emissions for different fumigants and application methods. Changing to lower emission methods will reduce VOC emissions. Controls are only needed during May – October to reduce ozone.	
243	The only guaranteed way to reduce small farm emissions from pesticides and to protect public health is to reduce pesticide use. We acknowledge growers concerns, but we are also concerned about public health, especially workers who are on direct contact with pesticides on a daily basis. DPR's regulations to reduce pesticide release must also take place year round, like I said earlier, and not just during smog season. ***DPR disagrees that the only guaranteed way to reduce emissions is to reduce use. Studies show that changing application methods will also reduce emissions.***	T14
244	You are looking at six to seven fumigants when there are many, many more pesticides out there that have been, had reduction since 1991. It's crucial that you look at, through the use of IPM and other technologies, the ability that we have been able to reduce our pesticide use, and that needs to be reflected in your proposed regulation and it is not. ***DPR estimates VOC emissions using pesticide use data, and this accounts for IPM and other technologies that result in lower use.***	T17
245	Take every opportunity to use new science that is available to you, to the registrants, since 1991. If your scientists that have put together the regulations don't have this data in front of them, I do request that you ask the registrants for it. There is new data, there's new emission testing methodology for fumigants, and they're not reflected in your proposed regulations. ***DPR has revised the regulations to update the emission ratings each year based on the most recent data.***	T17, T19
246	The listed application methods do not necessarily reflect all of the needed applications by growers throughout the state. While we understand the desire and the mandate on DPR to lower emission methods or lower emissions, we would like consideration and flexibility for some of the higher emission methods at low application rates. ***The revised regulations provide a process to approve other application methods, if emissions are no greater than the methods described in the regulations.***	T19

Allocation

247	We ask that any system which limits the availability of certain products be done in manner that is equitable for all commodities and growers in California. The proposed allocation method is not clear and growers will not be able to determine when or if a fumigant will be available to them when they need it, if the correct fumigant for the specific infestation will be available, nor will they be able to determine what application method must be used. Instead, we believe that the proposed allocation method will result in market manipulation and artificial scarcity. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system.***	25

	Permittees will have the ability to select the fumigant(s) of their choice. The permittee allowance will not be a first-come, first-served system. If necessary, all requests to use fumigants will be reduced by the same proportional amount. See response to comment #166.	
248	The allocation system that is described in section 6452.3 will have a negative effect on smaller or entry-level growers. They will be at a competitive disadvantage in comparison to larger growers with higher volume and purchase power. Allocating a certain measure of fumigants to be used by individual growers during a May-October window is like telling California drivers that they can only purchase gas for their cars until June 15 of each year. ***See response to comment #247.***	31, T21p
249	If allocation is based on a menu of methods, the practical application methods should be taken into account when defining the menu options. Our concern is that growers will be limited to just "low emission" methods. Regional differences, crop diversity and the practical application of methods in the field need to be taken into consideration when determining what methods are available to registrants for allocation. ***DPR does not intend for all fumigants and application methods to be viable alternatives in all situations. These application methods were developed by registrants, the U.S Department of Agriculture, and University of California with consideration for regional differences.***	31
250	We are asking for more details to the allocation proposal and its impact on small and entry-level growers; pest pressures that may require additional product one year that was not necessary the previous year; an increase in product costs; and new products entering the marketplace. These impacts should be analyzed and known before an allocation system is set in motion. ***See response to comment #247.***	31, T21p
251	Registrants of new fumigants will have to obtain new allocation credits for their products once ready for the marketplace. For a new fumigant to be registered and used, the allocation volume for one or more existing fumigants would have to be reduced since DPR will be placing absolute caps on the total allowable VOC emissions in each NAA. How will DPR decide how much of a market share the new products should receive? How will DPR decide which existing fumigants should be forced to give up allocation volume to make way for new fumigants? ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system, so market share is no longer a consideration. However, any new fumigant will require a regulation change in order to be used within NAAs.***	32
252	TriCal, and likely all applicators, plan our field activities months or even a year in advance. If allocation credits will be revised on an annual basis with a final decision made available only in November of each year, as DPR proposes, then this would be a major impediment to how we plan our activities. Will growers simply have to accept the fact that the registrant of their preferred fumigant may end up not getting a large enough allocation to treat their fields.	32

	See response to comment #247.	
253	A registrant-based allocation system creates a "highest-bidder" solution to who receives the limited amount of fumigant available. A grower could be willing to pay double any other grower offer and demand a high emission method. In this case, the effect of an allocation system on reducing VOC emissions is circumvented by financial decisions. ***See response to comment #247.***	32
254	If DPR does instate a registrant-based allocation system, registrants should be allowed to trade allocation credits among themselves in order to account for the natural variability between years in fumigation activities. It is also unclear from DPR's proposal if a company like TriCal, who has multiple active ingredient registrations, will even be allowed to trade allocation credits within our own company for different fumigants for which we have registrations. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system.***	32
255	As proposed, DPR's allocation system has serious anti-trust issues, including an obligation for registrants to release market share information (Confidential Business Information). This has potential legal ramifications. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system.***	32, 44
256	Not all commodities that require fumigation for profitable yields have an official "commodity group" that represents them or their crop. Therefore, a commodity group-based allocation system could leave out specialty crops and smaller, often minority, growers. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system.***	32
257	Growers who treat their fields in fall could be at the mercy of early-season growers and how much fumigant they choose to leave for later-season growers ***See response to comment #247.***	32
258	The ability of a grower to expand their operation would be subject to their allocation. John Smith may have the potential to add 10,000 new acres of almonds, but if he cannot fumigate due to the size of his allocation, his operation would suffer from a missed opportunity. ***Growers can still expand their operations, but they may be limited in the amount of fumigants they can use in the same proportion for which fumigation is sought pursuant to the permittee allowance system.***	32
259	Specialty crops, small growers, and minority growers would be at a severe disadvantage compared to large growers or powerful commodity groups. ***See response to comment #247.***	32

260	The fumigant emission allocation guidelines presented are broad and ill defined and place not weight on the individual criteria. The selection criteria are open to subjective evaluation and not necessarily based on objective information. Criteria should be added that give weight to new registrations, developing products, or new uses of current products. Alternative products will be held at a severe disadvantage compared to fumigants already in wide use should past or current market share become established as a criterion for allocation. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system, so market share is no longer a consideration. However, any new fumigant will require a regulation change in order to be used within NAAs.***	36
261	DPR provides no significant guidance as to how the air basin emissions cap will be enforced. There is no mechanism for assuring that a running tally of fumigant emissions is kept or a mechanism for DPR to stop further fumigations once the caps are approached. This is not an effective method of reducing emissions. Instead, it would be more effective if each source of pollution is regulated individually, at the time permits for fumigant use are issued instead of collectively. Additionally, since it is impossible to measure actual emissions for the entire air basin, DPR should be regulating *use* of pesticides rather than emissions. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. Each permittee will be regulated under this system. DPR believes it is possible to accurately estimate emissions based on methods of application.***	46
262	The whole proposal to allocate material to the registrants based on historical sales is simply unworkable. It is not clear how allocating material based on historical use to the registrants will be flexible enough to deal with changing patterns due to the phase-out of methyl bromide, the township caps on Telone, the potential for new registrations, changes in planting patterns and/or changes in pest pressures. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system.***	38
263	The allocation system embodied in this section is unworkable and detrimental to production agriculture for a number of reasons. The factors for determining fumigant emission allocations [6452.3(b)(1)(A)] are not well defined and there is no indication of how the criteria will be utilized in the decision-making process. Some of the factors are highly subjective and open to interpretation and as a result, will create confusion for those affected by the regulation. The allocation plan will be noticed for 30 days but there is no indication that the process will be governed by any particular procedure such as the Administrative Procedures Act. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system.***	39, 48, T20p
264	Fumigant registrants must "ensure that the emission limits are not exceeded," yet they lack the authority to do so. According to the DPR memorandum dated April 6, 2007, DPR can meet emission reduction goals, at least in two of the NAAs, if all fumigants are applied using "low emission" methods. Presumably, fumigant registrants will determine the amount of	48

	product they can sell in an NAA based on the assumption that growers will use the "low emission" methods. However, registrants do not have enforcement authority and cannot control what method each grower or applicator uses. Registrants and DPR will only know after the fact if the lowest emission method was used. This problem is exacerbated by the fact that certain low emission methods, for example the three water treatment methods, are in most cases impractical or impossible due to the cost and logistics of water delivery and in addition are not efficacious. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. DPR does not intend for all fumigants and application methods to be viable alternatives in all situations. In cases where there is an insufficient quantity of water, tarping or drip application may be viable alternatives. DPR is not obligated to reduce the impact of this or any proposed regulation to ensure efficacy.***	
265	Many fumigation strategies employ combinations of fumigants either as mixtures or as sequential applications. Often, more than one registrant's products are used. Growers who wish to make sequential applications of metam sodium and chloropicrin, for example, could find that the allocation for one or the other has been exceeded and be left with half of a fumigation. ***See response to comment #247.***	48
266	The artificial manipulation of the fumigant marketplace by regulating the supply of crop protection tool to growers is ill defined, unmanageable and exceeds DPR's authority. ***See response to comment #247.***	48
267	Even if an allocation system is workable, this section should be amended to delete the maximum total pounds of VOC emissions from field fumigations from May 1 to October 31 in the NAAs, or to provide some flexibility in the emissions limitations to allow "credit" for emission reductions achieved by reformulation or reduced use of nonfumigant pesticides. Under the current language, emissions from field fumigation are capped in perpetuity, even if the overall emissions from pesticide use are reduced well below the 20 percent goal. ***DPR has revised the proposed regulations to update the fumigant limits each year, based on the most recent emissions from nonfumigant pesticides. The revised regulations include provisions for a trigger, so fumigant limits can be dropped if overall pesticide emissions are less than 80 percent of the SIP obligation.***	48
268	The scientific basis for fumigant emission factors is still unsettled and will benefit from a more inclusive use of available data as well as additional data development. The implementation of the fumigant emission limits in the regulation should be phased-in to allow for a more refined assessment of emission factors. ***The September 29, 2007 memo by Barry, Spurlock, and Segawa updates the technical analysis of emission factors. These factors are unlikely to change unless DPR receives new data. The revised regulations contain provisions to update the emission factors and fumigant limits each year, based on new data.***	48

269	DPR's proposed allocation scheme cannot be easily understood nor implemented by those who will be significantly impacted by the regulations. There is no way for a grower to know how the cap will impact his ability to use fumigants or the economic costs. Here the growers, who according to DPR's own statements will be directly impacted, cannot determine how they may use a fumigant. The lack of clarity and the incomplete nature of the proposed allocation procedure render the regulations inconsistent with the basic due process requirements of notice and opportunity to be heard. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system.***	47, 42
270	The emission allocation use (caps) aspect of the regulations is very troublesome for both agriculture and the crop protection industry. It would be an onerous and untenable program to implement for both sectors. There are numerous, complex legal and economic implications that have not been vetted by DPR. Accordingly, WPHA cannot support this program. Approximately 10,000 acres of trees & vines and 30,000 acres of carrots are annually treated in the SJV between May and October. Requiring registrants or growers to annually submit their fumigation allocation plans for the May-October timeframe that will be subject to annual review and DPR's determination for grower priority for usage will result in a catastrophic disruption to agriculture. DPR's scope of legal authority to require the so-called "low-emission" application methods to be enforced by registrants or growers is highly questionable. DPR presumes that registrants will determine the fumigant amount they can sell within NAAs based on the assumption that growers will in fact use "low emission" methods. There is no credible fumigant-user surveyed data to support this conclusion, especially with the NAAs. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. The revisions enforce low-emission methods through regulations and permit conditions.***	35, T12
271	Many fumigation strategies use a combination of fumigants either as mixtures or as sequential applications. This would often mean that more than one registrant's product is being used. Growers would be placed at a severe disadvantage to eradicate soil-borne diseases and pests because it had been determined that the use allocation for one or the other product had been exceeded. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. Permittees can select any combination of fumigants of their choice.***	35
272	DPR is trying to implement a blanket-approach, which would regulate several different materials, when each material operates differently. A single protocol cannot effectively address each material. We encourage the rule language to be flexible and allow for the introduction of new methods in the future. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system, so market share is no longer a consideration. However, any new fumigant will require a regulation change in order to be used within NAAs.***	34
273	The issue that arises with registrant tracking of use is that there may be a substantial gap between the time a pesticide is sold and the time its use is reported. Pursuant to section 6452.2(d), the annual report from the registrant for the 2008 year	49

	does not have to be filed with DPR until March 1, 2009. It is easy to envision a situation in which a registrant sells a quantity of fumigant that will certainly exceed the cap *before* all the use reports come in. By the time a registrant, not to mention DPR, knows that the cap is going to be exceeded, it will be too late to prevent these emissions. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system enforced by DPR and CACs.***	
274	The regulations do not contain any sanctions for a registrant that fails to comply with the self-reporting requirements. It is not clear what penalties, if any, a registrant who failed to track air emissions as required by 6452.2 and/or failed to limit VOC emissions as required by 6452.3 would face. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system enforced by DPR and CACs.***	49
275	We propose that DPR be in charge of monitoring and keeping records on the use of pesticides instead of registrants. This could be done effectively and efficiently through a monthly tally of the PUR reports. In addition, instead of the self-monitoring and self-regulating approach set forth in the current proposed regulations, the regulations need to limit the use of fumigants by allocating a limited amount of the fumigants to each permit holder during the pesticide use permitting process. There are many mechanisms that DPR could adopt under its current authority, including pre-determined allotments of fumigants per permittee assigned at 20 percent below average use in several recent years. Such an approach would allow DPR to truly enforce the regulation to ensure compliance with the Court Order. Growers who choose not to use their allocation must not be allowed to trade allocations as this would create an incentive for maintaining fumigant use. Instead, regulations should specify that unused allocations must be turned in and in turn granted to applicants on a waiting list. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system enforced by DPR and CACs.***	49
276	DPR must determine the relationship between amount of each pesticide applied and amount of emissions from that application. Using these results, DPR should set sales caps for each of the pesticide registrants, depending on the quantity of emissions resulting from use of each individual registrant's products. In order for the regulations to be effective in reducing emissions, they must be enforced, monitored, and the resulting emission reductions recorded by DPR or a third party. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system enforced by DPR and CACs.***	49
277	The yearly allocation scheme envisioned by section 6452.3(a) needs to be deferred. As a practical matter, the timing proposed in these regulations is untenable. If growers cannot plan, or even know what crops can be planted, on more than a yearly basis, then the allocation scheme itself will contribute to the pressure to convert agricultural land into developed land.	41

	Growers will be able to estimate their future needs based on historical allowances and emissions.	
278	Section 6452.3(a) should be amended to read: The Director shall establish field fumigant volatile organic compound (VOC) emission allocations pursuant to subsections (b) or (c) for each of the San Joaquin Valley, Southeast Desert, and Ventura ozone NAAs for so long as such area remains out of compliance with federal ozone standards. The sum of such VOC emission allocations shall not exceed the emissions listed below during the May 1 through October 31 time period." It is not necessary to establish fumigant VOC emission allocations in areas that are in compliance with federal ozone standards. Requiring allocations of fumigant VOC emissions where there is no exceedance of federal ozone standards is unjustified. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system and establish a trigger for implementing the allowances. The revised regulations establish a total pesticide (fumigant and nonfumigant) VOC emissions benchmark for each nonattainment area. DPR is not required to implement a fumigant limit and permittee allowances unless total pesticide emissions exceed 80 percentage of the benchmark.***	41
279	Criteria in 6452.3(b)(1) are subjective and unclear. Criteria need to be transparent and interpretable. It is unclear how DPR will calculate each factor or how DPR will use the factors to determine allocations. If these factors are used to determine allocations, then the regulations should include the methodology for calculating each of the factors as well as the methodology used for determining allocations based on those factors. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system.***	41
280	In section 6452.3(b), May 1, 2008 is too late for growers to plan and should be changed to no later than February 1, 2008. Growers typically plan their season by February 1 and begin applying for permits at that time. A May 1, 2008 deadline for announcing allocations does not allow enough time for planning. Allocations may not be fair and equitable for all growers. If a first come first served system is adopted, it will penalize those who need fumigant in the September-October time period when allocation limits will be met and also those who are unable to delay fumigations until after the allocation timeframe. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. Also, see response to comment #247.***	41
281	Assigning a final allocation factor for 2009 by November 1, 2008 is too soon and should be changed to January 15, 2009. Reports documenting fumigant use from October are not due until November 10th. Assigning final allocations before that date does not allow the Director time to review fumigant needs from the current year as required in 6452.3(c)(1). Criteria such as 6452.3(c) (1) C-H are subjective and unclear. Criteria must be objective, clear and interpretable. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. The regulations do not specify a date to assign allowances. The regulations provide DPR and the CAC the flexibility to establish different dates for different nonattainment areas based on various cropping patterns in the nonattainment areas.***	41

282	The proposed regulations do not establish how new active ingredients will be regulated during their initial season of use. Registrations of new products can be and are approved at any time of the year by DPR, including during the Spring and Summer. The proposed regulations are designed to establish Fumigant Allocations once a year in a process (with the exception of the first year) that starts in May and ends in November of each year for allocations to be used during the following year's growing season. Products containing a new active ingredient would not be able to fit into this process during their initial season of use. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system, so market share is no longer a consideration. However, any new fumigant will require a regulation change in order to be used within NAAs.***	40
283	We propose language that establishes interim Fumigant Allocations for the first year of products containing new fumigant active ingredients. We propose to make the allocations a simple 10 percent of the total allocations for the NAAs. This simple formula is proposed for the reasons enumerated above (i.e., the limited acreage for new products in the first year, the swapping of acreage with existing products in the first year, the difficulties of predicting market penetration in the first year of use, and the advantages of timely introduction of new products). A public comment period is not proposed for the Interim Allocation due to the simplicity of the default allocations for these first-year fumigant products. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system. A new fumigant that is a VOC must be a restricted material in order to establish allowances. A new regulation is needed to make a pesticide a restricted material.***	40
284	The proposal to limit the amount of fumigant by giving each registrant an allocation is fraught with difficulties. ***DPR has revised the regulations to change from a registrant allocation system to a permittee allowance system. Permittees will have the flexibility to select the fumigant of their choice. All permittees will have an equal opportunity to request an emission allowance, regardless of the planned date of fumigation; the system is not first-come, first-served. See response to comment #247.***	43
285	It is impossible for the registrants to "ensure that the emission limits are not exceeded" because the most they can know is what the grower says he/she is going to do in the NOI. ***DPR has revised the regulations so that registrants are no longer responsible for tracking emissions.***	43
286	It is not clear from the wording that a registrant would be allowed to sell product in excess of the allocation during the control period, provided that it was not used until after the control period had finished. This would allow growers to have stock on hand and not create a logistical nightmare for growers and manufacturers at the end of the control period. ***DPR has revised the regulations to change from a registrant allocation system to a permittee allowance system. See response to comment #247.***	43
287	For allocations to be finalized 1 May with a 30 day comment period following the initial allocation, and a similar time	43

	period for DPR to consider the comments means that the initial allocation proposal would have to be made around the end of February at the latest. It is difficult to see how some of the factors indicted in the list could be known in that time period for 1 May – 31 Oct. How is the Director going to decide on the allocation for the new registrant? ***DPR has revised the regulations to change from a registrant allocation system to a permittee allowance system. Permittees will have the flexibility to select the fumigant of their choice depend on their specific needs. All permittees will have an equal opportunity to request an emission allowance; this will not be a first-come, first-served system. However, a regulation change will be needed to allow use of a new fumigant in areas where emission allowances are required.***	
288	We're concerned with the allocation structure with the registrants that has the potential to significantly alter the relationship between the grower, the applicator, and the registrant, especially if a licensed pest control business is required for application. ***DPR has revised the regulation to change from a registrant allocation system to a permittee allowance system. A licensed pest control business is no longer required to make the application.***	T19
289	The emission caps also depend entirely on the assumed emission rates coming from each application method. There is an incentive to underestimate the emissions from each method to allow more use. Also, industries in charge of tracking their own compliance with these caps would feel that it is up to state regulators to be in charge of tracking and enforcing emissions in that industry, especially because certain companies have a financial incentive to under-report use and emissions. ***DPR has revised the regulations to so registrants are no longer responsible for allocating or tracking emissions.***	T14

<u>Recordkeeping / Reporting</u>

290	Although having caps on emissions is a step in the right direction, I'm concerned that industry is in charge of tracking their own compliance with the caps. Instead, state regulators must track emissions and enforce these caps. ***DPR agrees with the concerns about having industry in charge of tracking and has amended the proposal to incorporate a government allocation system.***	Binder 2; 3, 6, 8
291	Prefer that we continue to use our existing systems which already transfer information the CAC offices. Multiple reports going to the registrants, the counties and the state would obviously be redundant and again excessive added costs without being essential to VOC reduction concepts. Suggest that DPR adjust the pesticide use reporting system to incorporate the ability for people to query the PUR system by NAA in addition to the current data based upon counties and geographical regions.	30

	DPR agrees that the current pesticide use reporting system, with minor modifications, is the best vehicle for collection fumigant use information. However, for the 2008 phase in year special temporary procedures will have to be used.	
292	Disagree with the self-regulation in reporting. There needs to be an outside agency to enforce the rules so there could be greater transparency in the oversight of these rules. ***The intent of this comment is not fully clear. Pesticide use reporting is not self regulatory. This requirement is enforced by the CAC's office.***	T11p
293	Section 6452.1 provides that a copy of the pesticide use report submitted to the CAC pursuant to section 6626 can be used to meet the requirements if the fumigation method is appended to the report. The Workgroup applauds DPR for allowing the integration of this new reporting requirement with the existing PUR. However, requiring the reporting party to send this methods information to DPR and the pesticide registrant's designated agent negates the benefit of utilizing the use report because it adds two new locations for reports to be mailed. There is no justification or need for these additional reporting locations. DPR should fully integrate this new reporting requirement with the current use reporting system by requiring the methods report, along with the use report, to be submitted to the CAC. CACs could then forward the information to DPR along with the PUR data. ***DPR agrees with the overall point of this comment but feels that an interim reporting system must be utilized for the first year until changes in the system can be made to facilitate collection of fumigant method information.***	48, 39, 36, T20
294	The method of reporting should be incorporated solely into the existing PUR reporting system without the need for additional mailings. ***DPR agrees and intends to incorporate fumigant reporting into the existing PUR system.***	38
295	DPR proposes that fumigant applicators be required to report the application method used for fumigants by appending the application method to the use report. Yet this approach does not allow the public to ensure that the caps on fumigant use are being enforced because the public has no systematic access to these data. We request that DPR find a way to capture the variety of fumigant application methods in the PUR database, possibly by developing new parameter codes for the Air_Ground_Indicator field or by creating a new field in the PUR database. This step will ensure that these data are available to the public and also part of a larger, comprehensive data set. ***When fully implemented, all use report data will be incorporated into the database and available to the public.***	46
296	The proposed regulations place the responsibility for enforcing emission caps on the pesticide registrants, who must limit the amount of pesticides they sell and report the amount of emissions arising from the amounts used in conjunction with the application methods reported. This self-reporting scheme is prone to abuse because there is no public oversight, nor even any DPR oversight until well after the caps may be exceeded. It is impossible for the public to monitor this self-reporting. Therefore, the emissions limits on pesticide makers are not enforceable.	49

	DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system enforced by DPR and the CACs.	
297	It is not necessary to track fumigant use in areas that are in compliance with federal ozone standards and it is an added unnecessary expense to all. Sacramento Metro and South Coast are in compliance with federal ozone standards. Requiring tracking of air emissions from air basins within federal standards is unjustified. ***The 1994 pesticide SIP element requires DPR to track emissions in five NAAs, including Sacramento Metro and South Coast.***	41
298	The requirement that fumigant use reports be submitted by the 10th day of the month following application is not viable under an allocation program and should be omitted. A real-time system for recording and tracking fumigant use is needed if the Department is going to allocate fumigant use within NAAs and require registrants to restrict use within allocations. Registrants cannot be held responsible for exceeding Department mandated allocations if they don't receive records of fumigant use for a month or more after an application. Further, growers need immediate feedback on whether or not they will be allowed to use a product when they are ready to fumigate. A real time system to provide timely, accurate feedback to both registrants and growers is essential. Errors and discrepancies between records will occur when records are sent to and maintained by more than one entity. ***DPR has revised the proposed regulations to change from a registrant allocation system to a permittee allowance system enforced by DPR and the CACs.***	41
299	Section 6452.2(d): Registrants shall submit an annual field fumigation emissions report to the Director by March 1 of each year for the previous calendar year that summarizes the emissions for each of their products by month within each ozone NAA. Why are areas outside the NAAs in California being required to follow the same strict regulations for VOC reduction statewide? The 1994 SIP specifies that it would ". . . only be implemented in counties located in air districts which have formally adopted a SIP which references VOC reductions from this plan". ***DPR has modified the proposed regulations to apply only to the NAAs.***	45
300.	Why is DPR mandating licensed pest control operators to [track] and [report] fumigant usage [outside] of the May 1st – October 31st period for NAAs? ***The required VOC reductions are for the May 1 through October 31 time period, but DPR is required to track VOC emissions for the entire year.***	45

301	The metam registrants do not currently have the systems in place to track the use rate/methods of application/acreage parameters that would be required under these proposals. ***DPR has revised the regulations so that registrants are no longer required to track emissions. DPR is responsible for tracking emissions.***	43
302	Unacceptable to have a significant amount of the recordkeeping be done by registrants. There is an inherent conflict of interest there in the sense that their profits depend on being able to sell more product. Also, who would report exceedances of any kind of cap if that, too, will interfere with profit by triggering fines? DPR or CACs should conduct all the recordkeeping and tracking where the public can request information and have access to it, and that protects the integrity of the program ***DPR has revised the regulations to so registrants are no longer responsible for tracking emissions.***	T8p
303	We strongly support inclusion of emission or use -- of use caps or limits in the regulation. We think that's a very good step. But also, as previously mentioned, we think that DPR for enforceability and accountability needs to be in charge of keeping track of those limits rather than the registrants. There needs to be some sort of amendment for running monthly total to be kept so that emissions can be stopped before they are exceeded. ***DPR has revised the regulations to so registrants are no longer responsible for tracking emissions.***	T7p
304	We also disagree with the fact that industry is in charge of tracking their own compliance with these caps. State regulators or county officials must be in charge of tracking and enforcing emissions, not the industry themselves, especially because certain companies have a financial incentive to under report use and emissions. ***DPR has revised the regulations to so registrants are no longer responsible for tracking emissions.***	T10p
305	The self-reporting scheme that has been set up for pesticide registrants is prone to abuse and has no public oversight. The DPR does not oversee any of this until the caps are actually met in the proposal. Thus, the emission limits are then unenforceable because until the limit, the cap is reached, then the DPR plans to step in. ***DPR has revised the regulations so registrants are no longer responsible for allocating or tracking emissions. DPR and county agricultural commissioners are responsible for tracking and ensuring that the fumigant limits are met through allowances issued to permittees.***	T5p

Economic Impact

306	DPR proposed regulations to reduce VOCs for the one-hour ozone standard under the old 1994 SIP. DPR estimates that this may force between 4,440-10,000 acres in Ventura to stop conventional farming practices and my put them at risk of closing operations. This may result in an estimated $80 million impact to our local agricultural industry. There appears to	9-11, 10, 19

	be no estimate or analysis of potential adverse economic impacts to those sectors of the local economy which deal with agriculture, although conventional wisdom generally multiplies the above figure by a factor of four or five times. ***The Agency-wide Economic Analysis Unit did not assess the secondary impact of the regulation on the agricultural support industries. The intent of the analysis was to estimate the direct costs to growers of the proposed regulations. Including the secondary impact of the regulation would increase the cost of the regulation.***	
307	Recommend that DPR conduct an extensive analysis of the environmental impact should farmland be converted to residential and commercial use. ***The environmental risk arises from the potential that some landowners who take land out of agricultural production will sell or develop it for residential or commercial uses. Such use might have a greater negative impact on air quality than agricultural use. DPR has noted this risk, but has insufficient evidence to quantify it. DPR has included all measures to mitigate that risk that are within its discretion. However, regardless of the magnitude of the environmental risk, under the court order DPR must adopt regulations by 2008 that require the full reduction in 2008. Moreover, fumigants account for the large majority of pesticide VOC emissions in Ventura, therefore DPR must reduce fumigate emissions to meet the court ordered reductions.***	9-11, 19
308	If the proposed regulations were implemented in their current form, the maximum reduction of VOCs would amount to 3.5 percent. Yet the economic impact to our local farmers could range between $80-120 million dollars. This amount may be significantly higher when one evaluates the indirect economic impact to support industries, such as processing and transportation, as well as those service sectors of our local economy associated with agriculture. ***The Agency-wide Economic Analysis Unit did not assess the secondary impact of the regulation on the agricultural support industries. The analysis was to estimate the cost to businesses directly impacted by the proposed regulations. Given the impact on growers that are directly affected, there will likely be some additional costs incurred as a result of the regulations.***	12
309	We are not confident the full economic impact of these regulations has been robustly explored. Again, if the emissions estimates are changed, so will the inventories on various commodities, dependent upon the specific fumigant being considered. ***See response to comment #308.***	25
310	Ventura County has achieved attainment with current ozone standards; VOC emission reductions are not necessary. We can assume that that the time of the Court order, the Court was unaware that attainment had already been achieved. DPR should not regulate to address a problem that no longer exists. Rather, Ventura County should be exempt from these regulations. ***U.S. EPA has not officially determined that Ventura complies with the federal one-hour ozone standard. Even if the***	28

	standard is achieved, the court determined that DPR has a separate legal obligation to reduce VOC emissions from pesticides as described in the SIP.	
311	By imposing additional and unnecessary costs and restrictions only on California growers will increase the likelihood and scope of these types of imports and any potential or consequent risks that accompany it. ***The import of Chinese strawberries in California is in all likelihood will not be a response to the fumigant regulations.***	28
312	There are no estimated private sector costs associated with impact to job or occupations or California competitiveness. There are 10,000 acres of trees and vines and 30,000 acres of carrots treated every year between May-October. Using practical low emission practices, 20-30 percent of these acres may not be able to be treated. There will be significant impact to jobs and competitiveness that are clearly not accounted for. ***See response to comment #308.***	31
313	As proposed, the restricted use or metam sodium would result in a loss of 12,000 acres of carrots, or $54 million, to one commodity in the San Joaquin Valley alone.DPR has stated that a 1.9 tons per day reduction will cause over 4,400 acres, out of a total of 13,280 fumigated acres, to stop being produced in Ventura County. This would eliminate as many as 8,000 jobs and cause an economic loss of as much as $126 million, while Ventura has been in compliance with the 1994 SIP, one-hour ozone standard since 2002. ***See response to comment #308.*** ***The analysis did not assess crop losses in the San Joaquin Valley. The cost analysis, (dated April 18, 2007, revised September 17, 2007) estimates production losses to strawberry growers in Ventura County and the cost to convert to low-VOC methods of fumigant applications for those other areas of the state affected by the fumigant regulation. Carrot and potato growers (outside of Ventura County) would not be prevented from using fumigants (but would incur increased costs of fumigant application) as detailed in the Agency-wide Economic Analysis Unit cost analysis, dated April 18, 2007.*** ***Staff assessed the impact of the increase cost of fumigant application on four crops that have a relatively large number of fumigated acres in the San Joaquin Valley, e.g., almonds, table grapes, potatoes, and fresh carrots, and a crop with small fumigant acreage, cabbage. The analysis centers on the idea that the grower can increase the price of the commodity by the cost of the fumigant application ($240/acre –sprinkler system, or $400/acre –tarping method) and pass this price increase on to the wholesaler.*** ***Table 1 presents the five crops, the cost of fumigant application, crop yield, the price received for the crop in 2006, the crop's price increase if the grower incorporates the increase cost of fumigation into the price of the crop, and the percentage increase in the price of the crop due to the regulation.***	31

Impact of Regulation on Price of Crop
The increase in price ranges from one-half a cent per pound for cabbage to about 15 cents per pound for almonds. The <u>percentage</u> increase in price ranges from 3.8 percent for cabbage and fresh carrots to 8.2 percent for almonds.

As noted above, incorporating the cost of low VOC fumigant methods into the price of the crops will increase the price of cabbage and fresh carrots 3.8 percent and almonds 8.2 percent. It is reasonable to assume that the grower would not absorb the cost increase but would pass these relatively modest price increases forward and continue to grow these crops in the San Joaquin Valley. The farmer's ability to pass the cost along to wholesalers is enhanced by the fact that all farmers would be increasing their prices which would maintain a level playing field and would not erode farmer competitiveness within the State.

Table 1: Impact of Fumigant Cost on Price of Selected San Joaquin Valley Crops

Crop	Cost of Fumigant Application[1] ($/acre)	Yield (lb/acre)	Price per Unit[5] ($/lb) 2006	Increase in Price ($/lb)	percent Increase in Price
Almonds	400	2600[2]	1.87	0.154	8.2 percent
Table Grapes	400	15,200[3]	0.451	0.026	5.8 percent
Fresh Carrots	240	30,500[4]	0.211	0.008	3.8 percent
Potatoes	240	35,900[4]	0.124	0.007	5.4 percent
Cabbage	240	44,000[4]	0.145	0.005	3.8 percent

1. Department of Pesticide Regulation, Cal-EPA, 2007.
2. *Sample Costs to Establish an Almond Orchard and Produce Almonds*, UC Cooperative Extension, 2003.
3. *Sample Costs to Establish and Produce Table Grapes*, UC Cooperative Extension, 2004
4. National Agricultural Statistics Service, U.S. Department of Agriculture, 2007. http://www.nass.usda.gov/Statistics_by_State/California/index.asp#.html
5. National Agricultural Statistics Service, U.S. Department of Agriculture, 2007. http://www.nass.usda.gov/Statistics_by_State/California/index.asp#.html

Other key changes to the regulation will lessen the cost of fumigant application in the San Joaquin Valley. For orchards and vineyards, growers can use normal methods to apply 1, 3-D (deep injection method). This will not increase the cost of fumigant application. However, shallow injection application methods will require water methods. (Source: DPR).

With respect to the cost of supplementary water use, the low emission application method will require about 2 percent

	additional water use (Source: DPR). ***With respect to the cost associated with requiring a licensed operator, the revised regulations no longer stipulated this as a requirement (Source: DPR).***	
314	DPR has not included the costs associated with requiring a licensed operator to be present throughout the water sealing applications. ***DPR modified the text of the proposed regulations deleting the requirement for a qualified applicator to be present at the application site during fumigation handling activities.***	31
315	On July 12, DPR issued the following public statement: Due to a computational error, DPR documents released with proposed regulations to reduce air emissions from fumigants overstated the potential impact on Ventura County.... ...DPR did not release any supporting documentation to explain the nature of the error nor how the new estimate was calculated. Nor did DPR extend the amount of time for comment. We believe that the ARB memo, CDFA assessment, and DPR analysis are all insufficient economic assessments. ***DPR has revised its economic analysis and made it available for a 15-day comment period.***	47
316	The economic impacts of the proposed regulations have not been fully considered. In the Notice of Proposed Regulatory Action, DPR states that the proposed regulations do not have an effect on small business, housing costs, and that it is unlikely the proposed regulatory action will impact the creation of new businesses or the elimination of existing businesses. These conclusions are not consistent with DPR's own statements in the same report. DPR states that there will be significant statewide adverse economic impact directly affecting business and the cost impacts on representative private persons or businesses could be as much as $120 million. The report goes on to say that in Ventura County alone, under the new regulations it is expected that approximately 10,000 out of 35,231 currently fumigated acres would have to go without fumigation. ***Contrary to the comment, DPR did state that the proposed regulation would have an affect on small businesses. This is consistent with our conclusion that there will be a significant statewide adverse economic impact directly affecting businesses. DPR also stated that there will be a significant cost impact on representative private persons or businesses.***	44

<u>SIP</u>

317	Ventura farmers have already implemented the best available control technology (BACT) and Ventura achieved the 1994 SIP, 1-hour ozone standard in 2002. Recommend that DPR seek an amendment of the old 1994 SIP with the State ARB to acknowledge the progress that has been made since the, including a possible reallocation of emission credits from our Court's on-going vehicle control program to assist our farmers in meeting their emission goals.	9-11, 19

	DPR supported an amendment to temporarily substitute VOC reductions from mobile sources for VOC reductions from pesticides. ARB approved this amendment on September 27. The substitution is to be phased out over 5 years, so as not to interfere with the State's plan to implement the 8-hour ozone standard in Ventura. DPR proposed Option 1 in the regulations that would match the substitution phase-out by-phasing-in reductions of fumigant emissions for the Ventura NAA over a five-year period. However, on December 12, 2007, the court ruled that Option 1 did not comply with its order to adopt regulations that require a 20 percent reduction in Ventura in 2008. Therefore, Option 2 requiring the 20 percent reduction in 2008 has been adopted.	
318	We request that pesticide elements of the State Strategy including DPR's proposed SIP commitment and Appendix E and H, not be included in actions that would incorporate DPR's information into the State Strategy until the public has had an opportunity to review and comment on DPR's proposal and DPR has considered the comments. ***Comment is outside the scope of this action.***	31
319	What happens if agriculture succeeds in meeting its duties for reducing fumigant VOCs, but the area remains in nonattainment? Can DPR continue to ask for stricter cuts even because nonattainment of ozone standards caused from other sources? ***DPR's commitment to reduce pesticide VOCs by 20 percent is part of the State's plan to achieve and maintain the ozone standard (SIP) in the five NAAs. However, the goal of DPR's proposed regulations is to fulfill its commitment to produce certain VOC reductions from pesticides, not to achieve the ozone standard. To change DPR's commitment, would require amending the SIP. The Air Resources Board, not DPR, is responsible for the SIP.***	45
320	DPR needs to recognize that Ventura County has achieved the 1994 SIP in 2002 and should be excluded from the regulations. Ventura County has met the 1994 SIP, one-hour ozone standards. ***As discussed above, absent an amendment of the SIP, DPR must reduce pesticide VOCs to meet its SIP commitment in Ventura regardless of that area's attainment or nonattainment status. See response to comment #310.***	T4, T5
321	Ventura satisfied the 1994 SIP and achieved compliance with the federal 1-Hour Ozone Standard in 2002. "Best Air on Record..." reads a December 10, 2004 press release by the Ventura County Air Pollution Control District... We hereby incorporate the December 10, 2004, VCAPCD Press Release by reference. ***See response to comment #310.***	47

Legal Issues

322	The court made no requirement as to the content of the proposed regulations, save that they achieve 20 percent reduction in emissions based upon the 1991 Pesticide Use Report baseline, adjusted to 1990. There is no requirement that the	9-11, 19

	regulations achieve this goal all at once. Recommend a phased-in approach to mitigate the impacts on local farmers. ***The regulations are designed to achieve reductions targeted by the 1994 SIP that are now past due, and which are needed for the 8-hour ozone standard. Thus, DPR must achieve these reductions as soon as feasible. It is feasible to achieve these reductions in the San Joaquin Valley and Southeast Desert nonattainment areas in 2008. Achieving the reduction goals all in 2008 in Ventura would most likely result in significant agricultural land being taken out of production. This would impose a risk of harm to the agricultural economy and the environment of Ventura County that are out of proportion to the expected benefits of the regulation. For this reason, DPR proposed the phase-in of reductions in Option 1 that could have significantly mitigated this risk by giving growers and landowners time to plan and implement agricultural uses that do not require fumigation or fumigation practices that emit less VOCs per acre than the currently best available controls or methods. However, on December 12, 2007, the court ruled that the regulations that it ordered DPR to adopt must require the 20 percent reduction in Ventura in 2008. Therefore, Option 2 has been adopted.***	
323	DPR proposes to implement portions of the regulations statewide for "uniformity and enforcement". However, the Court Order which is the basis for the regulations is specific to NAAs and DPR is therefore under no legal obligation to impose these regulations outside those areas. Absent a compelling reason to apply the regulations statewide, they must be limited to the areas of concern to the federal court. ***DPR has revised the regulations to only apply to nonattainment areas.***	32, 47, 42
324	The peak ozone period, as established by the Air Resources Board, is from May to October of each year. During non-peak periods the national ozone standards are not exceeded in these NAAs. Therefore, the proposed regulations should pertain only to the peak ozone period in these NAAs. Nevertheless, DPR is proposing to enforce the proposed regulations on a year round basis. This approach is unreasonable and imposes needless burdens on growers and applicators during periods when exceeding the ozone standard is not an issue. ***The initial proposal was changed. VOC reduction measures in the proposed regulations only apply during the ozone season.***	32
325	After a careful review of the federal court order, it is our interpretation that the government is only required to complete the regulation by January 1, 2008 and has the latitude to propose a phased approach to achieve the goal if it is justified. Because additional time will allow a more refined, accurate and likely less damaging regulation for agriculture and the economy, WPHA contends that the implementation of the fumigant emission limits in the regulation should be progressively phased-in. This would allow DPR to incorporate the appropriate emission factor refinements and further refinements of the nonfumigant emissions, which directly impact the fumigant goals. ***See response to comment #16.***	35
326	The Notice of Proposed Action, Initial Statement of Reasons and Public Report and the Documents Relied Upon, in this	48, 36?

	rulemaking, are not scientifically or legally sufficient to justify the proposed regulation and do not provide sufficient information to make informed comments. For instance, the Workgroup has concluded that the technical document relied upon to quantify field emissions (DPR Memorandum dated April 6, 2007), is inconclusive. The authors of the memorandum state that "[i]t is likely, if not certain, that DPR will revise its application method adjustment factors, methods use fraction estimates, and the proposed regulations based on the peer review and public comment (emphasis added). Thus, the proposed regulations have been noticed prematurely, preceding completion of the scientific document that provides the basis and the rationale for concluding that the proposal is appropriate and necessary, and thereby fails the test of necessity and clarity which is required of all regulations. ***DPR's September 29, 2007 memo by Barry, Spurlock, and Segawa updates the April 6, 2007 memo and revises its adjustment factors and method use fraction estimates. The September 29, 2007 memo was made available for a 15-day comment period and is included in the rulemaking file.***	
327	DPR does not yet have the external review of the science required by Health & Safety Code section 57004. ***Peer reviews have been obtained from University of California and were made available for a 15-day comment period. These documents are included in the rulemaking file.***	47
328	DPR must comply fully with CEQA (Public Resources Code section 21100, et seq.) and must file an environmental impact report. ***The Department disagrees with this comment. When a regulatory program of a state agency requires a plan or other written documentation containing environmental information and the program is certified by the Resources Agency as meeting the requirements of section 21080.5 of the Public Resources Code, complying with the regulatory program is the functional equivalent of an environmental impact report. As discussed below in response to comment #329, these regulations are part of DPR's certified regulatory program.***	49
329	DPR's certified regulatory program does not apply to the decision to adopt the proposed regulations. ***The Department disagrees with this comment. The language of 14 CCR section 15251(i)(3), that describes one of the four areas of the pesticide regulatory program certified as the functional equivalent of an EIR, is not the model of clarity. However, the authorizing statute for this regulation shows that the Legislature intended that DPR's regulation of the use of pesticides to protect public health and mitigate the adverse environmental effects to be a certified program. Chapter 308 of the Statutes of 1978, Section 5, establishing Public Resources Code (PRC) section 21080 that established the program certification process, required DPR (then part of the Department of Food & Agriculture) to submit its procedures for activities in four listed areas to the Resources Agency for a determination of whether or not those procedures met the requirements of PRC section 21080. Number (3) in that list is: "[t]he monitoring and regulation of the use of pesticides in agricultural and urban areas of the state and of human health and environmental effects of pesticides." (emphasis added.) The other areas listed relate to registration, licensing, and permitting by the***	49

	CACs. ***The above quoted language from the implementing statute corresponds to the Agency's follow on regulation subsection (i)(3) of Title 14, CCR section 15251 that lists DPR's program areas covered by the Resources Agency certification. That subsection reads: "(3) The adoption, amendment, or repeal of regulations for standards dealing with the monitoring of pesticides and of the human health and environmental effects of pesticides." To be consistent with the legislative intent, this section must be read to include the adoption of regulations to mitigate the environmental effects of pesticides flowing from DPR's monitoring and evaluation of the environmental effects of the use of the pesticides products it registers. No other interpretation is logical. A DPR decision to pass a regulation dealing with how it "monitors" the effects of pesticides on human health and the environment, but does not include any action based on that monitoring that "may cause either direct physical change in the environment, or a reasonably foreseeable indirect change in the environment" is not a "project" (PRC section 21065) that would need EIR equivalency.*** ***Indeed, the regulations submitted to the Resources Agency describing the program and approved by the Resources Agency as conferring CEQA equivalency applies to situations "[w]hen the Director proposes to amend, adopt, or repeal a standard or regulation of the pesticide regulatory program . . . " (3 CCR section 6110 (a) (emphasis added). The fact that this is the language certified by the Agency as the functional equivalent of an EIR is evidence that the phrase "regulations for standards" in Title 14, CCR section 15251 should have been "regulations or standards". This supports the logical and reasonable interpretation of that subsection as covering "regulations…dealing with …human health and environmental effects of pesticides", that is, regulations on pesticide use that mitigate the adverse effects of that use on human health and the environment.***	
330	DPR has failed to comply with the requirements of its certified regulatory program. ***DPR disagrees with this comment. Under the State's certified pesticide regulatory program, DPR is required to prepare a public report when the Director proposes to adopt, amend, or repeal a regulation of its pesticide regulatory program, and allow 45 days for the public to review each proposal. (Title 3, CCR, section 6110.) Section 6110 implements Public Resources Code (PRC) section 21080.5 (the portion of CEQA addressing certified regulatory programs). The Secretary of the Resources Agency determined that section 6110 satisfies the requirements of PRC section 21080.5 when the pesticide regulatory program was certified. Therefore, the section 6110 report is the document DPR is to use as a substitute for an EIR or negative declaration. In this rulemaking, the public report was combined with the initial statement of reasons and the combined document was identified as "Initial Statement of Reasons and Public Report."*** ***Under section 6110, the report is to include a statement of any significant adverse environmental effect that can reasonably be expected to occur, directly or indirectly, from implementing the proposal. If DPR identifies any significant adverse environmental effect, the report is to include a statement of any reasonable mitigation measures that are available to minimize any significant adverse environmental impact and a statement and discussion of reasonable***	49

	alternatives that would reduce any significant environmental impact. ***Title 14, CCR, section 15252 further clarifies what the certified regulatory program document that substitutes for an EIR must contain. In addition to a description of the proposed activity, it must either discuss alternatives to the activity and mitigation measures to avoid or reduce any significant adverse effects identified or include a statement that the agency's review of the project showed that the project would not have any significant or potentially significant effects on the environment and support "this statement by a checklist or other documentation to show the possible effects that the agency examined in reaching this conclusion." (Title 14, CCR, section 15252 (a) (2) (B).) (emphasis added.) DPR identified and discussed possible effects of the regulations on air quality, water quality, solid waste, and resource/energy use, and also noted and discussed the possibility that the regulations would increase the use of nonfumigant pesticides and might cause acres previously fumigated to be converted to nonagricultural use. DPR concluded that these effects were not significant adverse effects that could reasonably be expected to occur. Further, although this determination removed the need to discuss alternatives, DPR noted that it had not identified any alternatives to these regulations that would lessen any adverse impacts and still make the reductions in volatile organic compound emissions from pesticides necessary to achieve the court-ordered state air quality objectives. The report invited the submission of suggestions.*** ***The report of DPR complied with the both the letter and intent of the certified regulatory program requirements.***	
331	The assumptions on the frequency of use for various application methods and the fumigants being used are incorrect. DPR uses erroneous assumptions on the frequency at which various application methods are or were used by different crops. ***Based on additional information received,DPR has revised its estimates on the frequency of use of the various method as outlined in the September 29, 2007 memo by Barry, Spurlock, and Segawa.***	44
332	DPR accurately describes methyl bromide as being negligibly reactive, but this view is not incorporated in the regulations. ***EPA has not exempted Methyl Bromide as a VOC, therefore DPR is required to include it in the regulations.***	44
333	The use of 2004 as a representative year for comparison to the baseline year is not justified. Much of the regulations, including the severity of the proposed restrictions on allowable methods and limitations on pounds applied, are based on the perceived difference between the "current" year for which a VOC inventory has been calculated (2004) and the baseline year (1990/91). Unlike the baseline year, which DPR is obligated to use as the reference point, the decision to use 2004 as the sole representative year with which to base these regulations is not set in stone. Why this matters is that no single year can or should be viewed as representative of all years. For VOC inventory status and reduction estimates, and for allocation purposes, DPR should consider using average fumigant use patterns across several recent years to better account for between-year variability. It is inappropriate to base reduction goals and set specific VOC limitations based on the data from 2004 alone, or any single year of data.	42, 44

	DPR has revised the proposed regulations to update the fumigant limits each year. The regulations provide flexibility to use the most recent single year or multiple years for nonfumigants.	
334	The proposed regulations do not consider the US EPA regulations for critical use exemptions nor the approved critical users. DPR's proposed regulations have the potential to restrict the amount of methyl bromide used in the non-attainment areas, which undermines the needs of Critical Users which has been determined to be paramount per U.S. EPA and international negotiations. This could result in situations in which growers are granted allocations of Critical Use methyl bromide by the US EPA but are unable to use the allocations because of restrictions in the proposed regulations. ***The U.S. EPA regulations for critical use exemptions allow, but do not require the use of methyl bromide. In fact, the two regulations are complementary in that they both attempt to reduce the use of methyl bromide. This is similar to other California regulations that are more restrictive than label requirements.***	44
335	DPR assumption for current practices assumes that bed fumigation is conducted in Ventura. Due to excessive buffer zones bed fumigation is generally not used. Instead broadcast fumigation or drip fumigation methods are used. ***DPR has revised it estimates on the frequency of use of the various methods, based on additional information received.***	47
336	Proposed regulation arbitrarily failed to apply the well-documented science of reactivity to also calculate the emissions of fumigants. ***See response to comment #19.***	47
337	DPR has failed to properly assess the environmental impact of the proposed regulation. ***See response to comment #328.***	42, 47
338	The imposition of the restrictions statewide would place a significant burden on growers and is not necessary to effectuate the court decision. ***DPR has revised the regulations to apply only to nonattainment areas.***	47
339	Fumigants are the only source of ozone production that are being addressed in these regulations. Numerous other chemicals that cause increased levels of ozone production, including nonfumigant pesticides, are not being addressed. As a consequence, the major economic and regulatory impact of these proposed regulations is being born by a very small segment of the community. ***DPR has initiated a regulatory action to address VOC emissions from nonfumigant pesticides through reformulation. However, this action will take several years to complete, too long to comply with the court order. However, once VOC emissions from nonfumigants are reduced, the regulations provide flexibility to allow a corresponding increase in fumigant emissions.***	43
340	We question where the risk assessment and modeling and risk management starts and stops. For example, the design of	45

	flux emission research does not include many of the proposed risk management regulations. Therefore, DPR did not consider their influence on reducing MITC off gassing. How practical are these emission values? ***The proposed risk management mitigation measures are consistent with the proposed regulations.***	
341	The proposed regulations compound this inherent baseline problem by the method chosen to calculate the Maximum Total Pounds of VOC Emissions from Field Fumigations from May 1 to October 31, described in Section 6452.3. The derivation of the limits is more thoroughly described in the memo Barry et al. to Sanders, April 6, 2007 (Methods Document). Limits are the difference of 20 percent below the represented total pesticide emissions from 1991 and the 2004 inventory of nonfumigant pesticide emissions. The resulting limits developed from two annual snapshots, one of which is not representative of nominal fumigant demands or nonfumigant emissions in 1991, and another that is not substantiated as a nominal nonfumigant emission characterization in 2004, will present ongoing restrictions that are likely not necessary or justified. ***DPR has revised the regulations to update the fumigant limits each year, based on the most recent data for nonfumigants.***	41
342	DPR should refine the nonfumigant inventory more fully before establishing it as a basis for ongoing restrictions. Once refined, using a representative multiyear average as an inventory would minimize the impacts of single year aberrant conditions. ***DPR has revised the regulations to update the fumigant limits each year, based on the most recent data for nonfumigants. The regulations give DPR the flexibility to determine the fumigant limits based on a single year or multiple years of data for nonfumigants.***	41
343	The Methods Document presents a scenario for the San Joaquin Valley where 98 percent of 1,3-D users switch from the current deep placement method to a triple water seal method currently not used for commercial 1,3-D treatments. Between the projected emission reductions for 1,3-D and similar projections for low emission methods for all other fumigants, the 2004 low emissions estimate (Table 23) is similar to the 1991 Goal. This scenario is unrealistic. A grower in the San Joaquin Valley would not to use a method that costs hundreds of dollars per acre, uses scarce surface water or groundwater and requires additional activities on the treated field after fumigation, yet provides no economic or environmental benefit. The result is that under the proposed regulation, up to 38 percent of the tree, vine and carrot acres would go untreated. The economic and environmental ramifications of this scenario and alternatives have not been assessed in the current proposal. ***DPR disagrees that the application method changes will not provide an environmental benefit. DPR has made efforts to reduce the economic impact of the regulations to the extent possible. The additional water required by post-fumigation water treatments is less than two percent of the total water need for most crops. DPR has revised the regulations to allow use of the current deep injection method of 1,3-D.***	41
344	DPR uses erroneous assumptions regarding application methods used is not consistent with the data.	42

	DPR disagrees.	
345	DPR should consider government and academic research. ***DPR has included government and academic field studies in its estimates of emission ratings.***	42
346	Just tell each county to reduce 20 percent, let the county do the paperwork, and I think you'll find it works out pretty good. ***County agricultural commissioners lack the information and expertise to determine the emissions from various application methods. This would also create a large workload for county agricultural commissioners.***	T9p
347	The only guaranteed way to reduce smog-forming emissions from pesticides and to protect public health is to reduce pesticide use. DPR must implement strong regulations that reduce the use of smog-forming fumigant pesticides instead of focusing regulations on unproven technical fixes to reduce predicted emissions. ***DPR disagrees that the only way to reduce emissions is to reduce use. Dozens of studies demonstrate different emissions for different fumigants and application methods. Changing to lower emission methods will reduce VOC emissions.***	T10p
348	Applications of pesticide fumigants should not be allowed on Spare the Air Days and No-Burn Days. ***Since fumigants continue to volatilize for several days, the efficacy of this measure is questionable. In addition, the specific days of application within the May-October period have no effect on DPR's SIP commitment or compliance with the court order.***	T8p, T10p
349	In the initial, I think it was called a Pesticide Air Initiative at the beginning of this process, there was a discussion of having some sort of a requirement for PCA review, you know, requirement of demonstration of need to use fumigant and, you know, we're sorry that that is missing from this proposal. We think it would be an important way to get towards the needed reduction of fumigants. ***Section 6426 requires pest control advisers to evaluate alternatives before making a recommendation to use pesticides, including fumigants.***	T7p
350	We suggest that the state regulators must be in charge of tracking and enforcing the emissions caps. We also feel that there must be language in the regulation to ensure public transparency with complying with the caps. ***DPR has revised the regulations to so registrants are no longer responsible for allocating or tracking emissions.***	T14
351	DPR's estimates of fumigant methods used in 1991 are, therefore, based only on -- are also based on informal surveys of growers and discussions with country agricultural commissions. The process this agency used to obtain a circle use of information is too informal and to say the least unscientific. The public needs to know how those surveys were conducted. ***DPR does not normally use undocumented data. However, in this case the registrants' information and professional***	T14

	judgment are likely more reliable than DPR's, and DPR has employed the suggested method use frequencies. At DPR's request, the registrants have agreed to provide documentation on the method use frequencies.	
352	The proposed regulation is based on obsolete data from 1991 that does not recognize that Ventura County achieved the one-hour ozone standard every year since 2002. DPR stated that the purpose of the proposed regulation is to gain attainment with the 1994 SIP one-hour ozone standard. So where is the confusion? Quote, "Best air on record," reads a December 10th, 2004, press release by Ventura County Air Pollution Control District nothing, quote, "There were no exceedances of the federal one-hour ozone standard and no health advisories." The release further states, quote,"With no exceedances during 2004, two exceedances in 2003, and one in 2002, Ventura County has effectively attained the federal one-hour ozone standard." This is why the regulation does not make sense. This is why it is imperative to either remove Ventura from the regulation or amend the 1994 SIP. If this regulation goes forward it will establish a cap on Ventura farmers that is one point nine tons per day below the current emissions. This, despite the fact that they've already adopted the best available control technology, they've already reduced emissions, and they are using that best available control technology to over 65 percent of all the total necessary reductions. However, there's no other technology currently available to achieve the remaining one point nine ton per day reduction that would be required by this proposed regulation. One point nine tons per day is only one point eight percent of the total emissions in Ventura. This proposed regulation would trade one point eight percent for a county that's already achieved attainment of the one-hour ozone standard to impact, according to DPR Statement of Reasons, over 10-thousand acres, over 20-thousand jobs, over 286-million dollars. That simply does not make sense. We ask DPR to amend the 1994 SIP ***U.S. EPA has not officially determined that Ventura complies with the federal one-hour ozone standard. Even if the standard is achieved, the court has determined that DPR has a separate legal obligation to reduce VOC emissions from pesticides. DPR does not have the authority to amend the SIP.***	T11
353	DPR estimates that between 4,000 to 10,000 acres may be affected by these regulations. It's assumption that such acreage will either convert to organic or some other crops is misplaced. The more likely scenario will be conversation of ag lands to residential or commercial development, resulting in a larger carbon footprint made even larger if international crops are imported into the U.S. Other potential environmental impacts include importation of pests and their impacts on domestic crops and, as well, the positive impacts such as the photosynthesis from green crops and orchards that seemingly is overlooked as part of these analyses. We also believe the DPR has failed to properly analyze feasible alternatives and mitigation measure to avoid significant impacts. Possible alternatives and mitigation measures might include a phase-in period for implementation. The court's order did not indicate when or if or the contents of this particular regulation or when, other than the fact that it has to be implemented by a certain date.	T10

	We think that the DPR should seek an amendment to the '95 SIP to reallocate vehicle emission savings in Ventura County to assist local farmers in achieving the goal ***See response to comment #317.***	
354	The growers in Ventura County are the earlier adopters of this new technology. They've been the leaders in the industry and nationally in adapting emission reduction methods for their fumigation practices. They currently use the best practices in the state for farming with fumigants. They have, through this adoptions, have reduced the rates of fumigants used per acre, they have quit using any of the high emission application methods the majority of the acreage. They also have adapted the applications methods for broadcast application and through drip application through use of improved mulch and improved handling of the fumigation operations to minimize emissions. DPR should continue to support their amendment to adopt a modification of the SIP to shift emission surplus from the auto program to offset, to meet the 20 percent reduction requirement of the SIP Agreement for Ventura County from pesticides. DPR should remove Ventura from the SIP as it is already in attainment of a one-hour danger. ***See response to comments #310 and #317. DPR does not have the authority to remove Ventura from the SIP.***	T4