



**PESTICIDE REGISTRATION  
AND EVALUATION COMMITTEE (PREC)  
Meeting Minutes – May 15, 2020**

**Committee Members/Alternates in Attendance:**

Amalia Neidhardt – Department of Industrial Relations (DIR)  
Brian Larimore – Department of Resources Recycling and Recovery (CalRecycle)  
Dave Tamayo – Structural Pest Control Board (SPCB)  
Jaime Rudd – Department of Fish and Wildlife (DFW)  
Jeff Fowles – Department of Public Health (DPH)  
Karen Morrison – Department of Pesticide Regulation (DPR)  
Katherine Sutherland-Ashley – Office of Environmental Health Hazard Assessment (OEHHA)  
Kevi Mace – California Department of Food and Agriculture (CDFA)  
Lynn Baker – Air Resources Board (ARB)  
Matt Hengel – University of California, IR-4 Program  
Rich Breuer – State Water Resources Control Board (SWRCB)  
Ruben Arroyo – CA Agricultural Commissioners and Sealers Association (CACASA)  
Valerie Hanley – Department of Toxic Substances Control (DTSC)

**Visitors in Attendance:**

*Note: Only attendees who identified themselves using their full name are listed below*

Anne Katten – California Rural Legal Assistance Foundation  
Ben Sacher  
Chris Morales  
Dave Lawson – Western Plant Health Association  
James Nakashima – Office of Environmental Health Hazard Assessment (OEHHA)  
Jane Sellen  
Joe Grant  
Joel Schulman – Poison Free Malibu  
Jonathan Evans – Center for Biological Diversity  
Kylli Paavola  
Laurie Riggs  
Michael Zeiss  
Ouahiba Laribi – Office of Environmental Health Hazard Assessment (OEHHA)  
Rebecca Dmytryk – Humane Wildlife Control Association  
Stella McMillin – Department of Fish and Wildlife (DFW)

**DPR Staff in Attendance:**

Alexander Kolosovich – Pesticide Evaluation Branch  
Aron Lindgren – Pesticide Registration Branch  
Brenna McNabb – Pesticide Registration Branch  
Brittanie Clendenin – Pesticide Registration Branch

**DPR Staff in Attendance continued:**

Denise Alder – Pesticide Registration Branch  
Edgar Vidrio – Environmental Monitoring Branch  
Justin Kroes – Environmental Monitoring Branch  
Kara James – Pesticide Registration Branch  
Ken Everett – Pesticide Programs Division  
Laura Benn – Pesticide Registration Branch  
Marilyn Palmer-Townsend – Pesticide Programs Division  
Maziar Kandelous – Environmental Monitoring Branch  
Michelle Robbins – Pesticide Evaluation Branch  
Minh Pham – Environmental Monitoring Branch  
Nan Singhasemanon – Pesticide Programs Division  
Shelley DuTeaux – Human Health Assessment Branch  
Shelley Lopez – Pesticide Registration Branch

**1. Introductions and Committee Business – Karen Morrison, Chair, DPR**

- a. Approximately forty-five (45) people attended the meeting.
- b. DPR has added a COVID-19 landing page with resources and updates on DPR activities.
- c. The public health exemption regulation became effective April 2020.
- d. The field fumigation post regulation is anticipated to be effective October 1, 2020.
- e. The expansion of restricted materials to include the active ingredient carbaryl will be effective August 1, 2020.

**2. 1,3-D Mitigation and Pilot Studies – Edgar Vidrio, DPR**

1,3-Dichloropropene (1,3-D) is a pre-plant fumigant used to control nematodes, insects, and disease organisms in the soil. As a fumigant, growers inject 1,3-D into the ground, as opposed to aerial or foliar application. Mitigation efforts are focused on keeping 1,3-D in the ground and preventing air emissions, which will in turn reduce air concentrations, leading to fewer acute exposures. Major uses of this fumigant in California include crops such as fruit and nut trees, strawberries, grapes, carrots, and other row crops. Because this product is listed as a restricted material, it may only be applied by a licensed pest control applicator under a permit from the County Agricultural Commissioner's office.

Staff from DPR's Air Program detected 1,3-D at elevated air concentration levels on three separate occasions in two different locations – twice in Parlier and once in Shafter. Due in part to these elevated concentrations, DPR considered the need for additional control measures to mitigate acute exposure to bystanders. DPR used HYDRUS and AERFUM computer models to identify potential mitigation measures. HYDRUS is an industry-standard, used to simulate how the chemical moves within the ground profile. AERFUM is a DPR-created model, which uses the AERMOD modeling engine. DPR's use of these models underwent an intensive external peer review process, coordinated by the University of California. This process confirms that DPR is

using the best available technology to estimate air exposures, emissions, and concentrations of 1,3-D.

There are several options currently available to address acute exposures. One option would be to limit or prohibit 1,3-D applications. This could include a general restriction on all applications, targeted restrictions on specific types of applications, or other restrictions, such as the current prohibition of 1,3-D applications during the month of December. A second option would be to require the use of Totally Impermeable Film (TIF) tarps. TIF tarps are an industry-standard, and are heavily used in the coastal regions, particularly in strawberry production. Although they have been proven to reduce air emissions from fumigants, making their use one of the best tools available, TIF tarps can be difficult to recycle and prohibitively expensive. A third option to reduce 1,3-D exposures would be to increase the buffer zones, or distance between treated field areas and bystanders or occupied structures. With higher emissions, buffer zones would need to increase in order for air concentrations to drop below acceptable levels. DPR could also require more stringent application documentation, including a fumigant management plan, difficult to evacuate site plan, or other emergency preparedness process. Since 1,3-D is injected into the ground, setting a minimum soil moisture content threshold for applications could reduce air emissions, as moist soils help better trap the chemical in the ground. However, soil that is too wet will prevent the chemical from moving throughout the soil and reduce efficacy.

Both U.S. EPA and DPR offer a 60% buffer zone reduction credit when applicators use TIF tarps in certain fumigant applications (i.e., chloropicrin). Computer modeling conducted by DPR shows that a 60% emission reduction equates to at least a 60% buffer zone reduction for most field sizes or application rates. Therefore, for this mitigation effort, DPR aims to reduce 1,3-D emissions by at least 60% compared to the standard 18" deep untarped application. DPR has identified several options that meet or exceed the target 60% reduction in 1,3-D emissions, as compared to untarped fumigations.

Over the last few months, DPR has worked to develop new reduced emission application methods. These methods are based on currently available mitigation options, and combinations thereof, and may provide the desired reduction in 1,3-D exposures. The four main mitigation options include the use of TIF tarps, pre-application soil moisture content, post-application water seals, and deeper fumigant injections. As previously stated, TIF tarps are an extremely effective method for keeping fumigants in the soil, as they create a dense physical barrier. Growers could also utilize pre-application field irrigation to create a barrier of soil moisture at 70% of field capacity in the 3-9" below the soil surface, but the exact irrigation volume required depends on pre-existing soil conditions. Alternatively, growers could utilize a post-application water seal, where irrigation creates a zone of high-moisture near the soil surface, slowing fumigant emissions. While these methods can be effective at reducing emissions, they depend heavily on access to water, which may make them less feasible in some locations. Injecting the fumigant deeper into the soil – at a depth of at least 24" - would increase the time the fumigant spends moving within the soil, leading to lower emissions.

Each application method alone may not be enough to reach the 60% reduction target. Emissions can be further reduced by combining these application methods in various ways. This could mean combining a 24” injection depth with a post-application water seal. Although covering an entire field with TIF tarps may be prohibitively expensive for some crops, covering alternate rows can still substantially reduce emissions, while reducing costs for growers. By combining 50% TIF coverage with the deeper 24” injection method, growers can reduce emissions even further. Similarly, combining the deeper injection method with a pre-application 70% field capacity moisture cap and either 50% TIF tarp coverage or a post-application water seal can yield even greater reductions in emissions. In some remote locations, growers may be able to reduce exposures by expanding buffer zones or reducing application size, even with a more shallow injection depth of 12”. It is important to note that these are not the only options available to growers, and DPR continues to work to refine identified options and to seek input on additional options to explore. DPR has developed a table showing the necessary restrictions for each of the mitigation options across a range of applications rates. Within this table, the code MR refers to the minimum restrictions of application blocks of 80 acres and a 100 foot buffer zone for seven days. Cells that include additional numbers reflect the adjusted allowable application block acreage, with the required increased buffer zone distance shown in parentheses. For more information on identified mitigation options, including the referenced table, visit [https://www.cdpr.ca.gov/docs/risk/rcd/13-d\\_pilot\\_mitigation\\_options\\_march\\_2020.pdf](https://www.cdpr.ca.gov/docs/risk/rcd/13-d_pilot_mitigation_options_march_2020.pdf)

In planning the 1,3-D pilot program, DPR staff took several factors into consideration. 1,3-D is extensively used in California, with an annual average of 12.6 million pounds applied in the years 2011 through 2015. Although there are several alternatives to 1,3-D, none of these options are currently viable on a commercial scale. Additionally, proposed mitigation measures could be costly and may ultimately fall short of the desired emission reduction targets. With these considerations in mind, DPR will conduct a pilot program in selected high-use regions located near DPR air monitoring sites in Shafter, Parlier, and Delhi to test the effectiveness and feasibility of the proposed mitigation options. DPR will work closely with the county agricultural commissioner’s office to ensure that applications of 1,3-D in the selected regions during the pilot program timeframe adhere to the proposed mitigation options. The pilot program is expected to begin in September 2020 and will run for one full year.

There are several objectives of the pilot program and enhanced monitoring efforts. By collecting and evaluating air monitoring data from the new methods, DPR will be able to validate the computer modeling estimates. The pilot program will also help DPR evaluate the feasibility of the proposed mitigation options in the field. Ultimately, DPR will evaluate the effectiveness of the mitigation options, with a goal of reducing air emissions when transitioned to a statewide scale. Throughout the pilot program, DPR will continue the ongoing air monitoring efforts in the selected areas, and also work with different partners to increase ambient air monitoring during the high-use season, either by more frequent monitoring or possibly adding additional stations. DPR is also hoping to get application-site monitoring data by taking samples in the immediate vicinity of applications as they are taking place. This would allow staff to capture the actual emissions data from the field and validate the computer models. For each pilot program area,

DPR is proposing to select four townships surrounding the current air monitoring sites for the proposed mitigation options.

### ***Committee Comments***

Ruben Arroyo asked if applicators participating in the 1,3-D pilot program in the upcoming season will be limited to the proposed mitigation methods discussed in this presentation. Edgar Vidrio responded that DPR will be working closely with the County Agricultural Commissions to develop a final list of mitigation options for applicators to use during the pilot program, which may expand beyond the twelve options mentioned during this presentation.

Lynn Baker suggested that DPR should add additional monitoring stations, specific to each application site, in order to compare actual 1,3-D emissions to the modeled scenarios. Edgar Vidrio responded that site-specific monitoring is very intensive, but DPR plans to work with partners, including the Air Resource Board and registrants, to conduct additional application site monitoring studies.

Dave Tamayo asked how DPR and the County Agricultural Commissions plan to enforce adherence to the proposed 1,3-D mitigation methods. Edgar Vidrio replied that 1,3-D is a restricted material, and therefore applicators must obtain permits for use of the product. Karen Morrison responded that restricted materials in general are subject to substantial oversight, including pre-application inspections of the application site. Karen added that for the pilot program specifically, DPR is working with the County Agricultural Commissioners in the four affected counties to talk about the requirements of the pilot program, appropriate documentation, and ensuring the requirements are being followed. Ruben Arroyo commented that permit conditions will dictate the allowable mitigation options for growers participating in the pilot program.

Dave Tamayo asked for clarification on specific methods of enforcement for the 1,3-D pilot studies and whether that would include field inspection by commissioners or reliance on documentation from the applicators. Ruben Arroyo responded that field inspections are subject to staffing levels and the degree of oversight requested by DPR. Ruben added that the County Agricultural Commissioners would work with DPR to establish guidelines for the specific level of monitoring.

### ***Public Comments***

James Nakashima asked for clarification on the numbers stated in the application table in the 1,3-D presentation, specifically referencing option two at 300 lbs/acre. Edgar Vidrio replied that in order to remain below the 60 percent emission rating, using option two at 300 lbs/acre, the maximum application size would be ten acres. Edgar added that if the buffer zone were increased from 100 feet to 200 feet, as noted in the table, the application block size could be increased to 25 acres.

Anne Katten asked if the County Agricultural Commissioners will be keeping records of methods used in 1,3-D pilot areas, including TIF tarp use. Edgar Vidrio replied that the specifics are still being discussed, but ideally all mitigation methods would be recorded. Edgar added that this data would inform DPR on the feasibility of the mitigation options at scale, as well as preferred mitigation options for specific crops. Ruben Arroyo added that applicators will need to list the specific method and use as part of the restricted use permit conditions.

An anonymous attendee commented that soil texture and structure have a significant impact on emissions, and the soils in the 1,3-D pilot areas are generally more coarse and dry in September than a large percentage of soils elsewhere in the Central Valley where other crops are grown. The attendee then asked how DPR will reasonably extrapolate results from the pilot areas to these other areas and crops that are prevalent on them. Edgar Vidrio responded that most of the current data is based on HYDRUS modeling, which takes into account the soil texture and moisture levels recorded at application sites the day before application. Edgar added that this pilot program will allow DPR to collect additional data to validate current modeling scenarios. Lynn Baker clarified that the pilot program would collect and analyze data over the course of a year, not only during the month of September.

Michael Zeiss asked if DPR plans to increase current township-level caps on 1,3-D use if the mitigation efforts achieve a 60% reduction in emissions. Karen Morrison replied that while there is overlap between mitigation efforts and the implications for the township-level cap, DPR is separately working on rule-making around the current township cap program in consultation with OEHHA and CARB. Karen added that the results of the pilot program and how it informs statewide action will need to be considered in regards to the township cap program, but at this point it is unclear how the programs will impact each other.

Dave Lawson commented that he would like to see target numbers for 1,3-D emissions. Edgar Vidrio responded that emissions differ from air concentrations, as the concentrations take into account weather patterns, distance from a target, and other factors. Edgar added that while in some situations the emissions and air concentrations may be the same, they are not always the same, so they are not necessarily equivalent.

Dave Lawson asked if the data in the table from the 1,3-D presentation represents requirements or only proposals. Edgar Vidrio replied that the table is not exhaustive and is intended to provide a guiding pattern. Edgar added that the goal is to generally adhere to the rates listed in the table, but there may be situations that are not represented in this data.

Dave Lawson asked if a fumigant management plan is currently required for 1,3-D and if the mitigation options would be incorporated into a fumigant management plan. Edgar Vidrio responded that there is currently no fumigant management plan required for 1,3-D, only applications. Edgar added that the addition of a fumigant management plan would bring requirements for 1,3-D in line with other fumigants.

Dave Lawson asked if growers who wish to switch to a different mitigation option in the 1,3-D pilot program would be required to submit a new notice of intent to the County Agricultural Commission and the time requirements if so. Edgar Vidrio confirmed that growers would need to update the notice of intent to accurately reflect any changes in the planned application option selected.

Anne Katten expressed concern about the acute 1,3-D exposure risk to nearby workers and residents, as well as the cancer risk from emission spikes. Anne urged DPR to move quickly on mitigation measures as well as the associated rule-making process.

### **3. Second-Generation Anticoagulant Rodenticide Reevaluation Update – Brenna McNabb, DPR**

Second-Generation Anticoagulant Rodenticides (SGARs) contain the active ingredients brodifacoum, bromadiolone, difenacoum, and difethialone, and are registered for rodent control. The colored bait products are applied in secure bait boxes with holes for rodent entry. In January 2019, the reevaluation team presented PREC with DPR's investigation of anticoagulant rodenticides on non-target wildlife, which served as the basis for the proposed decision to begin reevaluation of SGARs. The investigation indicated that non-target wildlife exposure to SGARs may be significant due to the chemical characteristics which are known to have properties of high-toxicity, persistence, and bioaccumulation. Since then, DPR has issued notices to the public and to SGAR companies of the final decision to begin reevaluation.

California Food and Agricultural Code §12824 requires DPR to continuously evaluate registered products, which DPR fulfills through the reevaluation program. In accordance with California regulations, DPR is required to investigate reports. If the director finds that a significant adverse impact has occurred, or is likely to occur, the pesticide shall be reevaluated. In this way, an investigation may trigger the reevaluation process. Reevaluation allows DPR to require additional data to characterize the nature and extent of a potential hazard. For the SGAR reevaluation, DPR has initially required submission of all existing relevant data, to set a foundation for additional data requirements. DPR is at the beginning of the reevaluation process for SGARs and has begun the process of collecting enough data to determine if mitigation is necessary. The reevaluation process allows DPR to require and conduct review of representative data to determine if mitigation is needed and possible.

DPR registers SGAR products for rodent control, specifically against the targeted pests Norway rats, roof rats, and house mice. SGARs were developed to counter emerging rodent resistance to the original first-generation anticoagulant rodenticides. While first-generation anticoagulant rodenticides require multiple doses, second-generation products provide a lethal dose to a target pest in one feeding. However, the mechanism for these pesticides results in a delay between consumption of a lethal dose and rodent death. Although SGARs are lethal to rodents after a single feeding, it takes several days to take effect. Rodents may continue to feed on remaining SGAR product multiple times before dying, which leads to concentrations of SGAR in a rodent

carcass that exceed the lethal dose. Consequently, SGARs can also affect non-target wildlife that may feed on exposed rodents.

The previous reevaluation of brodifacoum closed in 2014. While the reevaluation only included brodifacoum, the adopted regulations designated all four SGAR chemicals as California restricted materials and added use restrictions. As California restricted materials, SGARs can only be sold by licensed dealers and can only be purchased and used under the supervision of certified applicators. SGARs are not for homeowner use in California. After the adoption of regulations, DPR received reports of exposure to SGARs and adverse effects to non-target wildlife. After conducting an investigation of these reports, which included 152 Department of Fish and Wildlife loss reports, 11 peer reviewed scientific publications, and state-wide sales and use reporting data, DPR found that more work was needed and posted the proposed decision to begin reevaluation.

During the public comment period for the proposed decision, DPR received over 17,000 comments, primarily in support of the reevaluation. After the public comment period closed, DPR completed the review of submitted comments and issued California Notice 2019-03, titled Notice of Final Decision to Begin Reevaluation of Second-Generation Anticoagulant Rodenticides. The notice summarized and provided a response to relevant comments. This notice serves as the director's final determination regarding initiation of SGAR reevaluation. DPR notified affected companies of the decision to begin reevaluation, the investigation, and identified the SGAR products subject to the reevaluation. The notification of companies also required submission of compliance proposals and any existing data of SGAR toxicity, exposure, or impacts to non-target wildlife.

By June 2019, 12 out of 15 companies had submitted compliance proposals and existing data on file. Company-submitted data exceeded 100 studies, bringing the total number SGAR studies on file with DPR to over 600, not including chemical formulation or product manufacturing data. Ultimately, these studies will be used to help DPR identify gaps in SGAR knowledge so that DPR can require additional data to fill these gaps. The remaining three companies elected to comply by voluntarily cancelling their three SGAR product registrations, two of which contained the active ingredient difenacoum, and one which contained bromadiolone. After this voluntary cancellation, DPR no longer has any registered products containing difenacoum.

DPR is currently in the process of reviewing the existing data, which exceeds 600 studies. DPR scientists are specifically reviewing to understand impacts to organisms throughout the food chain. Thus far, the focus has been on reviewing mammalian and avian toxicity studies, pharmacokinetic studies, and comprehensive ecological risk assessments. This type of data is providing information on how SGARs move through individual animals and the food chain.

DPR's review of existing data will provide a basis for the requirement of additional data. Additionally, DPR scientists remain actively engaged in current rodenticide dialogue and ongoing studies with both local and international scientists. This dialogue includes how these concerns are being addressed in other areas, such as in the United Kingdom where they have a



robust stewardship program. As such, DPR continues to meet with SGAR researchers and companies to discuss ongoing research that could be relevant to the SGAR reevaluation, such as the research conducted by the University of California's Dr. Niamh Quinn, investigating secondary SGAR exposure as well as best management practices.

After reviewing all existing data and taking into consideration the latest in rodenticide dialogue and research, the next step in this reevaluation would be to notify companies and the public of additional data requirements. DPR is committed to using scientific review to inform next actions and providing transparency, given the wide interest in these products. Additional information is available on DPR's reevaluation website at [www.cdpr.ca.gov/docs/registration/reevaluation/chemicals/sgars.htm](http://www.cdpr.ca.gov/docs/registration/reevaluation/chemicals/sgars.htm)

### ***Committee Comments***

Jaime Rudd asked for clarification on the definition of a significant impact in regards to SGAR reevaluation. Brenna McNabb replied that rather than a strict definition, it is more of a gradient, based on the regulation language that states "significant impact or the potential for a significant impact." Brenna added that the semi-annual report lists potential issues that can trigger reevaluation, due to concerns for human health or the environment.

### ***Public Comments***

Stella McMillin asked for further detail on the mitigation measures or best management practices that Dr. Niamh Quinn is investigating as it relates to SGAR reevaluation. Brenna McNabb replied that the information from Dr. Quinn is very preliminary, with nothing formal to evaluate, yet. Brenna added that Dr. Quinn has been providing information about procedures, and DPR will be including that information in the review in order to incorporate as much information as possible. Karen Morrison added that DPR will bring additional updates on the SGAR reevaluation to upcoming PREC meetings. Stella urged DPR to include the Department of Fish and Wildlife in continuing efforts and discussions as they relate to SGAR reevaluation.

Joel Schulman commented that recent cases show clearly that first-generation anticoagulant rodenticides are commonly found. Joel then asked why they are not included in the reevaluation. Karen Morrison replied that SGARs had a potential significant adverse effect to the environment, and so met the requirements to put into reevaluation.

Rebecca Dmytryk provided the following comment via email:

Thank you for the opportunity to provide public comment. My name is Rebecca Dmytryk, I am representing the trade association, Humane Wildlife Control Association and speaking as a professional in the pest control industry with over 10 years experience and over 35 years in wildlife rescue and rehabilitation. This is a comment and a question mainly for CALEPA.

Looking back at the original registration process for anticoagulant rodenticides, for example, the 1998 Reregistration Eligibility for brodifacoum, bromodiolone, bromethalin, chlorophacinone and diphacinone, and which appears in all the other records on registration/reregistration that I have found, the EPA presumed - presumed - that the risk of secondary risk to non-target wildlife was not an issue where the poison is placed indoors or immediately against outside walls or buildings. We now know this is not true. Mice and rats live for days after consuming a lethal dose and we have numerous accounts of wildlife consuming these animals and becoming contaminated. Therefore, because of this presumption, EPA did not require and has yet, to the best of my knowledge, required any studies on the impact these secured bait stations pose to non-target wildlife. Therefore, the initial registrations of products containing SGAR's should be considered invalid and the EPA should suspend registration of this products until studies can be conducted.

Brenna McNabb replied that as an employee of DPR she could not speak to decisions made by CalEPA, and that the federal government has a role in registering and reregistering these products prior to California. Brenna added that DPR is concerned that despite the current restrictions, it seems that there are continuing impacts to non-target wildlife. Brenna further stated that the reevaluation allows DPR to do more of an in-depth look at what is going on, beyond what U.S. EPA has registered, to require data to possibly mitigate concerns.

Jonathan Evans asked if there was a timeline for the completion of the SGAR reevaluation process. Brenna McNabb replied that the advantage of the reevaluation process at DPR is a flexible timeline, which allows the department to develop additional data requirements and conduct a very thorough scientific review, which ultimately culminates in the possibility to develop strong mitigation strategies. Brenna added that while DPR is not required to adhere to a specific timeframe, the department plans to notice once the program has determined what data is necessary to advance appropriate mitigation measures. Karen Morrison added that the SGAR reevaluation is a priority for the department, and that while data collection and review may take some time, DPR is looking into shorter term practices or data requirements that can be adopted to move as quickly as possible through the reevaluation, reflecting the best science and information available on these products.

#### **4. Update on Air Monitoring Activities – Minh Pham and Maziar Kandelous, DPR**

California is the only state in the nation that continuously monitors for the presence of agricultural pesticides in the air on a year-round basis, to protect workers, public health, and the environment. Air Program staff are looking deeper into usage trends, changing agricultural practices, and socio-economic drivers that have impacted the current monitoring locations over the past five years. The goal of this review is to ensure that the monitoring locations are in communities which are most representative of California's high-use agricultural conditions. Staff are also reviewing the selection criteria and community ranking system to determine whether Air Monitoring Network (AMN) sites should be relocated.

There are currently eight AMN stations throughout the Central Valley and Central Coast. These areas represent the highest use of fumigants and organophosphates within the state. Within the last year, the stations at Shafter and Santa Maria were relocated. The station in Shafter was moved from the parking lot of Shafter High School to a ground-level site on the grounds of Sequoia Elementary School. The station in Santa Maria was moved from a second floor building to a ground-level site on the grounds of Bonita Elementary School. Both of these sites are closer to, and more surrounded by, agricultural areas and are therefore expected to provide more representative monitoring results. Thus far, the monitoring results at the relocated sites have remained consistent, though staff will continue to monitor and validate the data over time.

DPR's Air Program is expecting a large reduction in resources in the foreseeable future. The expansion of the AMN from three to eight sites was made possible through a budget change proposal several years ago. The two-year temporary funding, which covered both the physical sites and the large analytical costs, is set to expire in June 2020. No new funds were procured for the fiscal year, which will result in a reduction in service and a reduction in the number of air monitoring locations. DPR is looking into ways to restructure the AMN to ensure the core mandate and mission remains intact. Effort will be focused on sustaining three permanent sites, reflecting a similar capacity as was maintained before the AMN expansion took effect. Air program staff are evaluating the potential impacts of eliminating various monitoring locations by considering what the program can achieve with current resources as well as how to get the maximum amount of useful information for monitoring, modeling, and mitigation. Once a recommendation has been developed, the air program will present the proposal to the Pesticide Registration and Evaluation Committee.

In addition to the eight monitoring sites within the AMN, DPR has been operating two monitoring sites in Delhi and Parlier through Study 309, focusing on 1,3-Dichloropropene (1,3-D). DPR has been collaborating with the Air Resources Board (ARB) to maintain five of the AMN sites, with the collaboration scheduled to end in June 2020. However, due to COVID-19, ARB staff were instructed to discontinue field sampling activities at the end of February. Starting in March 2020, DPR assumed responsibility of sampling at all the monitoring locations, though at a reduced scale. The data analysis function of the program has also been affected by these unforeseeable circumstances. The ARB Monitoring and Laboratory Division's Organic Laboratory Section halted pesticide analysis operations and the California Department of Food and Agriculture laboratory continued operation at a reduced capacity. To address these limitations, DPR's Air Program reduced the number of pesticides monitored. Operations were suspended at the sites in Cuyama, Lindsay, Oxnard, San Joaquin, and Chualar. Sites in Shafter, Watsonville, Delhi, and Parlier are monitoring only for 1,3-D, and the site in Santa Maria is continuing to monitor all 36 initial pesticides.

### ***Committee Comments***

Karen Morrison commented that DPR is committed to continuing air monitoring activities and will continue to work closely with partners throughout the state to ensure the protection of public health and the environment.

Lynn Baker clarified that ARB did not only halt pesticide monitoring analysis. Lynn added that due to COVID-19, the ARB laboratory is currently closed, resulting in the suspension of analysis for all programs, except those mandated by the U.S. EPA.

Matt Hengel asked about the typical volume of samples collected for the AMN sites. Minh Pham responded that DPR collects four to five samples per week per site. Matt offered to discuss possible avenues for partnership with the Air Program.

Rich Breuer asked for more information on reduced pesticides analyzed as well as any holding time issues. Minh Pham replied that due to the reduced staffing and analysis capacity, DPR considered the most plausible scenarios for long-term sample holding. Minh explained that canister sampling for 1,3-D offered the longest storage time, with flexible collection schedules. Minh added that travel restrictions played a key role in determining the reduced sampling locations.

### ***Public Comments***

James Nakashima asked if DPR anticipates any effects due to the lower monitoring height at the two relocated AMN sites. Minh Pham replied that no effects are anticipated and the new ground-level locations are in line with the EPA criteria for breathing height. Minh added that the new sites provide a more representative scenario of the public experience, and that by using elementary school grounds, the sites are monitoring within the most sensitive populations. Lynn Baker added that EPA guidelines state that ambient air monitoring heights can range from two meters to 15 meters to represent well-mixed concentrations.

### **5. VOC Inventory – Justin Kroes, DPR**

The Clean Air Act was passed into law in 1963. Through subsequent amendments, the Clean Air Act required U.S. EPA to handle and approve state plans for regulating certain air pollutants, including ground-level ozone. Ground-level ozone, in contrast to ozone in the upper atmosphere, is harmful to human and environmental health. It can exacerbate respiratory illness in individuals with underlying conditions, as well as cause illness in healthy individuals, and severe human health effects include premature death. Ground-level ozone can form in the atmosphere through the interaction of nitrogen oxides and volatile organic compounds (VOCs). Pesticides are an important source of VOCs, and emissions are regulated by both ARB and DPR. As part of DPR's commitment under the Clean Air Act, the Air Program keeps an inventory of VOC emissions from pesticides. This information is released as part of an annual report that summarizes the emissions in several different areas within California.

In 2008, DPR enacted regulations to limit fumigant emissions and enacted further regulations to limit non-fumigant emissions in the San Joaquin Valley in 2013. With the release of the 2018 Draft VOC Emissions Report, the restrictions on non-fumigant use have been extended through 2021. Title 3 of the California Code of Regulations (CCR) outlines several key points relevant to the VOC inventory, including definitions and a list of VOC reductions required in each

nonattainment area. Nonattainment areas are the geographic focus of the VOC inventory, with individual emission limits as well as reductions relative to a baseline year that are required under the state implementation plan for the Clean Air Act. The annual VOC inventory report is mandated through CCR §6881. Regulations require emissions to remain below 20% of 1990 emissions for four nonattainment areas and 12% of 1990 emissions for the fifth nonattainment area in the San Joaquin Valley. Emissions for a given year are somewhat liable to change, due to changes in weather patterns, agricultural economics, and the type of pesticide product being used. To prevent emissions from rising above regulatory limits in future years, the VOC report determines whether a nonattainment area's emissions have risen above 95 percent of a regulatory threshold. If so, certain restrictions are required in the different nonattainment areas. In four of the areas, there are fumigant limits and restrictions on the amount of fumigant applications that can occur. In the San Joaquin Valley nonattainment area, restrictions are placed on the use of high-VOC non-fumigant products.

The four nonattainment areas that currently do not have active restrictions are Sacramento Metro, Southeast Desert, Ventura, and South Coast. The San Joaquin Valley nonattainment area currently has active non-fumigant restrictions. In Sacramento Metro, the regulatory limit is 2.2 tons per day (tpd) of VOC emissions, and the 2018 VOC report shows that emissions in this area were well below the regulatory trigger level of 2.1tpd. In the San Joaquin Valley nonattainment area, the regulatory limit is 18.1tpd and the regulatory trigger level is 17.2tpd. Though 2018 emissions fell below the regulatory trigger level, non-fumigant restrictions were enacted for this area as of 2015, and will remain active through the end of 2021. In the Southeast Desert area, the regulatory limit is 0.92tpd and 2018 emissions fell well below the regulatory trigger level of 0.87tpd. In Ventura, the regulatory limit is 3.0tpd and 2018 emissions were less than half of that limit. In South Coast, 2018 emissions again fell well below the regulatory limit of 8.7tpd.

The public comment period for the 2018 Draft VOC Report was scheduled to end on May 15, 2020, however the deadline was extended to June 1, 2020 in light of the current circumstances surrounding COVID-19.

### ***Committee Comments***

None to report.

### ***Public Comments***

Dave Lawson asked if the term “nonattainment area” could still be considered accurate, given that four of the areas fall below VOC regulatory limits. Justin Kroes clarified that “nonattainment area” is the historical terminology that has developed within the Clean Air Act at the federal level. Minh Pham added that the “nonattainment” label includes emissions other than those from pesticides. Lynn Baker explained that designation as a nonattainment area is determined by federal ambient air quality standards for ozone, not solely pesticide VOC emissions.

Dave Lawson asked for clarification on the factors impacting the decision to maintain restrictions in the San Joaquin Valley nonattainment area, given that VOC emissions have fallen below the trigger value. Minh Pham replied that the decision is based on usage within the area, including how and when products are applied. Minh added that restrictions are automatically mandated for two years when emissions exceed the regulatory trigger level, and further restrictions are based on staff reevaluation of the data to provide recommendations to the director. Dave responded that it is difficult to explain to partners why the restrictions are still in place when the emissions have been below the regulatory trigger level for five years. Minh replied that there may be other factors impacting the decision and that could be discussed offline.

James Nakashima commented that the data seems to show that current VOC emissions are less than 10 percent under the trigger level in the San Joaquin Valley. James asked what the projected VOC emissions due to pesticides would be if the restrictions were removed. Justin Kroes replied that in deciding whether or not to extend restrictions, staff calculate hypothetical emissions based on an equation that takes into consideration the current use of high-VOC non-fumigant active ingredients on seven potential crops to determine an average emissions factor for those products before restrictions were implemented. Dave Lawson added that potential crop changes and weather patterns can have a large impact, and that the cancellation of chlorpyrifos may also have a significant impact on emissions.

#### **6. Agenda Items for Next Meeting**

The next meeting is scheduled for July 17, 2020 at 10:00 a.m. This meeting will be held virtually on the Zoom platform and broadcast live at <<https://video.calepa.ca.gov/>>.

#### **7. Adjourn**