

M e m o r a n d u m

Exhibit A

To : Larry Nelson, Chief

Date : February 11, 1992

via Keith Pfeifer, Senior Toxicologist

Place : Sacramento, CA

From : Department of Pesticide Regulation Lori O. Lim
Staff Toxicologist

Subject : Methyl Bromide- Preliminary risk assessment for inhalation exposure in structural fumigation

INTRODUCTION

Methyl bromide is used in structural, soil, and commodity fumigation. In 1991, more than 60 products as technical material or formulations were registered in California. The major registrants are Ameribrom, TriCal, Soil Chemical Corp., Ethyl Corp., and Great Lakes Chemical Corp. The use of methyl bromide has been increasing in the last 5 years. The amount applied doubled from 10 million pounds in 1986 to over 20 million pounds in 1991.

The current label for the use of methyl bromide in domestic dwellings specifies re-entry at an air concentration below 5 ppm. However, there were two Section 24 (c) SLN issued in 1990 for scale broom roots in buildings (CA-900038 and CA-900045) where the re-entry level should not exceed 30 ppb. This level was recommended by Worker Health & Safety Branch based on the NOEL of 3 ppm from the rat reproductive study to achieve a Margin of Safety (MOS) of 100.

Since its use commercially, worker illnesses have been reported as early as 1899 (von Oettingen, 1946). Dermal exposure to high concentrations of methyl bromide results in vesication and swelling of the skin (Butler, *et al.*, 1945 and Jordi, 1953). Signs and symptoms of methyl bromide from inhalation exposure are dependent on the amount and duration of exposure (Greenberg, 1971; Gehring, *et al.*, 1991). Mild and chronic exposure results in polyneuropathy which may be reversible. Acute exposure to high concentrations results in: malaise, headache, visual disturbances, nausea, and vomiting. There is a delayed onset of symptoms indicative of central nervous system involvement: numbness, ataxia, tremor, convulsion, and coma. Death is usually due to pulmonary edema leading to respiratory failure or cardiovascular collapse.

In a study of workers in a repackaging plant where the methyl bromide was estimated to be less than 35 ppm (or approximately 12 mg/kg-day), clinical symptoms of anorexia, nausea, headache, vertigo, abnormal sleepiness were reported (Watrous, 1942).

ACUTE EXPOSURE

In animal studies, acute exposure to methyl bromide resulted in central nervous system depression and loss of righting reflex (Honma, *et al.*, 1985) and decreased body weight gain (Honma, *et al.*, 1985; Alexeeff and Kilgore, 1985). At higher concentrations, there were decrease in body temperature, lethargy (Honma, *et al.*, 1985; Alexeeff and Kilgore, 1985), excitability (Irish, *et al.*, 1940), and paralysis (Irish, *et al.*, 1940). The alteration in body temperature, anorexia resulting in lower body weight gain, and inactivity has been attributed to methyl bromide inhibition of tyrosine hydroxylase activity (Honma, *et al.*, 1991). Developmental toxicity studies indicate that methyl bromide is a developmental toxin in the rat and rabbit (Breslin, *et al.*, 1990; Sikov, *et al.*, 1981).

SURNAME

Lim

Pfeifer

The lowest acute NOEL was 40 ppm (155 mg/m³) from the rabbit teratology study (Breslin, *et al.*, 1990). The endpoints (80 ppm, or 310 mg/m³) (in the fetus) were omphalocele, hemorrhaging with or without hydrops, retroesophageal right subclavian artery, gall bladder agenesis, fused sternbrae and decreased fetal body weights. The duration adjusted dosage (amortized over 24 hrs exposure, 7 days per week, and respiration rate of ~~960~~ ⁵⁴⁰ L/kg/day) for the NOEL is 21 mg/kg-day.

Based on the NOEL of 21 mg/kg-day and the exposure at the re-entry level of 5 ppm, the margin of safety for human exposure is 4 and is inadequate. Generally, when animal data is used, an MOS of 100 is considered adequate. Although teratogenic endpoints are only relevant for women of child-bearing age, the assumption that all other population subgroups are as sensitive results in MOSs that protect the health of other population subgroups.

| <u>Subgroup</u> | <u>Breathing rate</u> <u>m³/kg-day</u> | <u>Human equivalent</u> <u>NOEL (ppm)</u> | <u>MOS</u> |
|-----------------|--|--|------------|
| Adult | 0.26 | 21 | 4 |

830 ppb
210 ppb
1 ppb - 3.75 ppb

SUBCHRONIC EXPOSURE

After structural fumigation, the residents of the houses can potentially be exposed to methyl bromide for a short term as it is released from the structure and furnishings.

In animal studies, inhalation exposure to methyl bromide subchronically resulted in tissue degeneration (Hurtt, *et al.*, 1987), lung lesions (Irish, *et al.*, 1940), decreased body and organ weights (American Biogenics Corp., 1986), reduced fertility (American Biogenics Corp., 1986), fetal variations (Sikov, *et al.*, 1981; Breslin, *et al.*, 1990), and neurotoxicity and convulsions (Irish, *et al.*, 1940; Breslin, *et al.*, 1990; Sikov, *et al.*, 1981; NTP, 1990).

The lowest NOEL was 20 ppm (78 mg/m³, adjusted dosage of 12 mg/kg-day) for neurotoxicity (convulsion, paresis, and death) observed in rabbits exposed to methyl bromide for more than 1 week (Sikov, *et al.*, 1981). Neurotoxicity after methyl bromide exposure has also been reported in the monkey (NOEL of 13 mg/kg-day), mouse (NOEL of 31 mg/kg-day), and in another rabbit study (NOEL of 21 mg/kg-day).

The reproductive study used previously in the SLN application is not used in this assessment because the effects were not observed until after more than 100 days of treatment. The re-entry level is evaluated based on a shorter duration of exposure for normal fumigation as compared to subfloor methyl bromide injection which demonstrated air levels > 30 ppb for up to 21 days post treatment.

Based on the NOEL of 12 mg/kg-day and the exposure at the re-entry level of 5 ppm, the margins of safety for human exposure are inadequate. Again, an MOS of 100 is generally considered adequate.

| <u>Subgroups</u> | <u>Breathing rate</u> <u>m³/kg-day</u> | <u>Human equivalent</u> <u>NOEL (ppm)</u> | <u>MOS</u> |
|------------------|--|--|------------|
| Adult | 0.26 | 12 | 2 |
| Child | 0.46 | 7 | 1 |

RECOMMENDATION

As indicated in this preliminary assessment, the current re-entry level of 5 ppm does not provide adequate margins of safety. Based on the subchronic exposure of children, the highest potential exposure population subgroup, an air concentration not to exceed 60 ppb in 24 hours is needed to provide an MOS of 100.

Memorandum

To : Larry Nelson, Chief
Medical Toxicology Branch

Date : February 11, 1992

via Keith Pfeifer, Senior Toxicologist
Health Assessment Section

Place : Sacramento



Nu-may Reed
Nu-may R. Reed
Staff Toxicologist

From : Department of Pesticide Regulation

Subject : Acute exposures to airborne Methyl Bromide

The potential health effects of airborne methyl bromide was re-evaluated.

Background Information

A report documenting air monitoring data by the Air Resources Board (ARB) under the mandate of AB1807 was received by Medical Toxicology Branch in November, 1990. Using these data, a preliminary risk assessment was initially conducted in December, 1990. Based on the toxicological data available at the time, an interim NOEL of 90 ppm (6 hr/day; 5 days) established in a rat subchronic study (DPR Vol.123-109) was used in the assessment. The margin of safety (MOS) ranged from 104 (child) to 185 (adult). The toxicological database has since been updated.

In a recent evaluation of the potential health hazards associated with the label-approved use for structural fumigation, the staff established an inhalation NOEL to evaluate acute exposure scenarios. Consequently, the potential health hazard associated with the occurrence of methyl bromide in the air was re-assessed.

Air monitoring data

The air monitoring for field application was conducted in Monterey county, at town sites and sites adjacent to the application field (off-site). Air samples were also taken after enclosure fumigation in Stockton. The results are given in the attached Summary table from the ARB report.

Based on this report, the air concentrations of 1.1 ppb (Minimum Detection Limit, MDL) and 450 ppb were used for assessing the exposures for town sites and off-sites, respectively. The 450 ppb was the average air concentration for an approximately 24-hour period (Sept. 12, 9:45 am to Sept. 13, 1:15 pm), based on three 3-hour measurements for site B at Fennell farm (67 meter from the edge of an application site). A summary table (ARB report, Table 8) of the air measurements at this site is also attached. The highest single measurement at the Stockton sites was 1.6 ppb.

Toxicological data

The acute inhalation NOEL was established at 21 ppm for women of child-bearing age. These values were calculated from the NOEL of 21 mg/kg/day (40 ppm; 6 hr/day), for developmental effects established in a rabbit teratology study. Using this NOEL to evaluate the risk of women of child-bearing age will provide the lowest MOS among all population subgroups. The supporting

toxicological database is presented in greater detail in the memo from Lori Lim to Larry Nelson (February 11, 1992) concerning structural fumigation.

Risk Characterization

Based on the human NOEL of 21 ppm and the ARB monitoring data, the margins of safety (MOSs) for the Monterey county town sites (air concentration at the MDL of 1.1 ppb) and sites at Stockton (highest concentration at 1.6 ppb) are at least 13,000 and indicate no potential health concern. The MOS for the acute off-site exposures at 450 ppb is 47. An MOS of 100, based on a NOEL established in animal studies, is generally considered adequate. The off-site air measurement, taken 67 meters from the edge of an application site, represents a realistic exposure scenario, since no buffer zone is currently required for methyl bromide field application.

Recommendation

Reduction of the air levels to an equivalence of 210 ppb for 24 hours would result in an MOS of 100, which is generally considered adequate based on a NOEL established in animal studies.

Attachment

1995 SOILFUME/REVILLA DRIVE COMPLAINT
KAREN LIGHT ILLNESS

On July 10, 1995, at about 2:15 P.M. I received a telephone call from Ms. Karen Light. Ms. Light said the plastic tarp from a Soilfume, Inc. methyl bromide soil fumigation behind her house was ripped and billowing. She said the fumigation took place the day before. She was concerned about her health, that of her neighbors and the workers picking strawberries downwind in an adjacent field. As she was describing the situation, she interrupted herself and exclaimed that a large portion of the tarp had just ripped open. At that point, I told her I would immediately call Soilfume, inform them of the situation and tell them to repair the plastic tarp.

The site of the fumigation is Martin Rubio's Strawberry City Ranch along Meridan Road. Ms. Light's residence is 1 of 12 located on Revilla Drive. Mr. Rubio's Strawberry City Ranch is behind the back yards of the residents living on the east side of Revilla Drive. . .

Previously, Ms. Light had called this office and expressed concern about this very application. Ms. Light recalled the last time this same piece of property was fumigated with methyl bromide. . . During that October 1993 application, unusual southeast winds and warm temperatures combined to cause movement of methyl bromide and chloropicrin to the homes on Revilla Drive. The resulting irritant symptoms prompted the residents to file a complaint with this office. Ms. Light wanted to insure this application was not a repeat of the 1993 application. She wanted to make sure Soilfume complied with the Restricted Materials Permit conditions imposed by this office after the 1993 incident. . .

I immediately (2:20) called Soilfume and spoke with Ms. Dyan Wilcox. I told Ms. Wilcox the location of the ripped tarp and that it needed to be repaired. . . Later at about 3:40 PM Ms. Wilcox called and told me Finn (Jacobsen) took care of it.

At home, at about 6:30 PM I received a call from Ms. Light. Ms. Light said nothing had been done to repair the tarp. I told her I would visit the site in the morning.

On July 11, 1995 at 8:40 AM I visited the site. Bruce Kingston of Soilfume and Martin Rubio the grower were at the site. . . There was a portion of fumigation tarp that was ripped on 2 sides and

FRAMEWORK #1: HUMAN EXPOSURE

folded over leaving a triangularly shaped exposed area. I estimated 2 sides of this open area to each be more than 100 feet wide. The rips were along the seams that were glued together. There was a slight breeze (0 to 3 mph) from the area of the fumigation towards Revilla Drive. . .

There was a chemical odor in the air. From my experience as an Agricultural Inspector/Biologist, I recognized the odor as chloropicrin. Chloropicrin is an irritant of mucus membranes (i.e. eyes, throat, nose). It is used as a warning agent in conjunction with the colorless, tasteless, odorless methyl bromide. I felt a slight irritation in my eyes. Mr. Rubio complained of eye irritation. . .

Later that day, I reported back to Robert A. Roach, Deputy Agricultural Commissioner. Mr. Roach called Soilfume and told them to take care of the rips in the tarp.

I returned to the site at about 2:55 PM. . . I estimated a little less than 1 acre to be left exposed.

On July 12, 1995, at about 7:30 A.M. I returned to the site and took some photographs. . . Mr. Kingston said he thought the glue had failed. . . I asked Mr. Kingston about the manner in which the plastic sections were removed from the treatment area the day before. Mr. Kingston said no readings to determine the level of methyl bromide in the treatment area were taken before Soilfume workers entered to remove the sections of tarp. Mr. Kingston said nobody used Self Contained Breathing Apparatus (SCBA) while in the treated area. . .

Also, on July 22, 1995, this office received an illness report by telephone from Dr. Wilken of Doctor's on Duty. According to the report, Ms. Karen Light suffered corneal irritation. The irritation was said to be a result of the escaped methyl bromide/chloropicrin gas. . .

[Valerie Cunningham, a resident of Revilla Drive,] said that while at home on July 8th and 9th she was sneezing a lot and thought she was catching a cold. On July 10th, the day after the applications, her eyes were irritated. Her eyes were burning and felt like they were full of sand. She feels she should have gone to the doctor. . . Her husband, Ron Carson's eyes felt like they were full of sand. There are 11 children living on Revilla Drive and 1 on the way. She expressed concern for their health due to the applications that take place near their homes. . . She said many Revilla residents had left their homes to avoid the fumigation. She said she would like to have a 500 foot buffer zone between the fumigations and the Revilla Drive residences. . .

On July 28, 1995, I interviewed Mary Alice Johnson, [another resident of Revilla Drive]. . . regarding the July 8th and 9th applications. . . Ms. Johnson said she experienced burning eyes and throat. . .

FRAMEWORK #1: HUMAN EXPOSURE

On August 4, 1995, I interviewed by telephone Ms. Chris Sumpter, [another resident of Revilla Drive]. . . Ms. Sumpter and Mike Cepeda were home during the applications of July 8th and 9th. Ms. Sumpter was pregnant at the time. She said the baby, born on July 21, 1995 was fine and normal. She did not recall having any symptoms. Mr. Cepeda had burning eyes. . .

Review of the Notice of Intent to Apply Restricted Materials (NOI) submitted by Soilfume for the July 8th and 9th applications indicate an incorrect Residential Buffer Zone (RBZ) of 50 ft. . .

CONCLUSIONS

Apparently a drum of contaminated glue was inadvertently used. The contaminated glue failed to hold the sheets on plastic together resulting in breaches, billowing and escape of the methyl bromide and chloropicrin gases. . . This office responded [to Karen Lights phone call] by immediately calling Soilfume about the situation and telling them they needed to repair the plastic. Soilfume's response was that they would take care of it. This office was later informed that the problem was taken care of. Later, Ms. Light called to say nothing was done. It was found that the plastic was not repaired. Soilfume was again told to take care of the torn plastic. Soilfume then sent in a crew of workers into the treated area without checking methyl bromide levels and without required SCBA. The crew cut the loose portions of the plastic and removed it to the outside of the field. In the meantime, some of the residents of Revilla drive became ill. . . [with] symptoms. . . consistent with chloropicrin exposure.

[Both Soilfume and Martin Rubio Farms were found to have violated numerous sections of the CCR and F&A Codes including improper buffer zone between the applications and residences, inadequate response to the torn tarp, worker safety failures, improper worker training, and improper record keeping.]

ENFORCEMENT ACTIONS

Soilfume, Inc. will be issued a Notice of Violation. . .

Martin Rubio Farms will be issued a Notice of Violation. . . and a warning. . .

MEMORANDUM

Exhibit C

To : James W. Wells, Director

Date : July 31, 1997

Place :

From : Department of Pesticide Regulation

- 1020 N Street, Room 100
Sacramento, California 95814-5624

Subject : RESULTS OF METHYL BROMIDE MONITORING IN MONTEREY COUNTY

As part of our continuing evaluation of the effectiveness of restrictions on methyl bromide, we completed the monitoring of the July 28 field fumigation at a strawberry field adjacent to homes on Revilla Drive in Monterey County. The results of the monitoring are summarized below. (A map is also attached.)

- ▶ Levels of methyl bromide were undetectable 200 feet from the edge of the field. The method we used to sample and analyze methyl bromide can detect concentrations as low as 10 parts per billion (ppb). (One ppb is equivalent to one second in 32 years.)
- ▶ The buffer zone for methyl bromide fumigations of this type is normally as little as 30 feet. At a distance of 30 feet from the edge of the field, levels of methyl bromide ranged from nondetectable to 189 ppb, averaged over 24 hours. (One sampler site was located 25 feet from the field, due to topography. At this site, methyl bromide was measured at 230 ppb, or 10 percent above our 210 ppb target exposure level.)
- ▶ These results are consistent with what previous methyl bromide monitoring studies have found, and what would be predicted at these distances.



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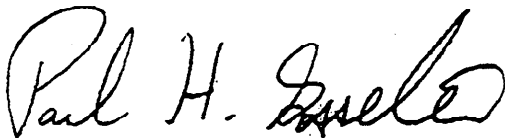
James W. Wells

July 31, 1997

Page 2

- ▶ Detectable traces of methyl bromide were found at 5 of the 13 monitoring stations; all five were downwind from the application. At the other eight monitoring stations, methyl bromide was detected.
- ▶ The target exposure value of 210 ppb incorporates a 100-fold margin of safety, meaning that the level is set 100 times lower than where exposure was considered safe in toxicology tests. This provides an extra measure of protection. At 230 ppb, the highest level found (by a sampler 25 feet from the edge of the field), there would still be a 91-fold margin of safety.

The monitoring confirmed that a 200-foot buffer zone is protective with an exceedingly large margin of safety. Therefore, the second application should be allowed to proceed. It will have a 200-foot buffer zone. Our scientists will monitor this application.



Paul H. Gosselin, Assistant Director
Division of Enforcement, Environmental
Monitoring, and Data Management
(916) 445-3984

Attachment

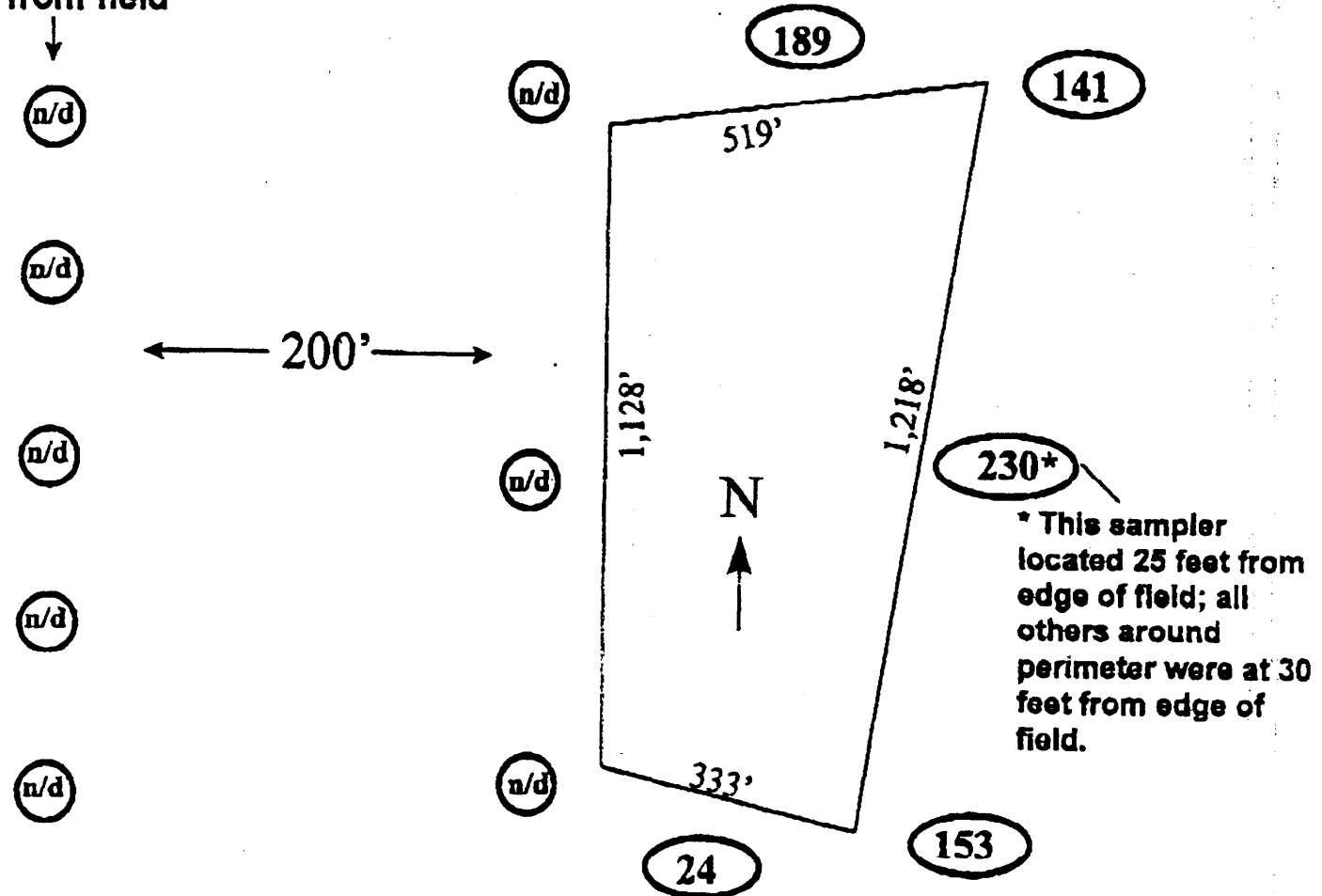
DPR Monitoring Results

Revilla Drive Methyl Bromide Application

July 28, 1997

Samplers

200 feet
from field



- "n/d" = none detected
- All other levels are in parts per billion, 24-hour time-weighted average
- There were eight samplers on the field perimeter, seven of them 30 feet from edge of field and one at 25 feet
- Five samplers were located 200 feet from edge of field

Map not to scale

ENVIRONMENTAL WORKING GROUP

CALIFORNIA OFFICE P.O. BOX 29034 SAN FRANCISCO, CA 94129 (415) 561-6598 FAX (415) 561-6480

August 15, 1997

**Contact: Kert Davies, (202) 667-2082
Bill Walker, (415) 561-6598**

Preliminary Methyl Bromide Monitoring Results Revilla Drive, Castroville, Calif.

Summary

Air monitoring by Environmental Working Group after methyl bromide fumigation of a strawberry field near Castroville, Calif., detected peak levels of methyl bromide exceeding the state Department of Pesticide Regulation health standard in the back yards of residents of nearby Revilla Drive.

EWG's measurements, conducted with instruments believed to be more sensitive than DPR's, were consistently higher than the ones released by the agency. They constitute further evidence that DPR's regulations intended to protect residents from methyl bromide exposure are not only inadequate but flawed in principle, as methyl bromide drift appears extremely difficult to control, even when the pesticide is applied under the tightest restrictions.

Round 1: July 28-30, 1997

The first round of fumigation took place on July 28th, 1997. 10 acres were fumigated with 300 pounds of methyl bromide/chloropicrin mixture per acre for a total application of 3,000 pounds of fumigant applied.

Findings by DPR

Three days later, DPR released a summary of their results in a memo from Paul Gosselin of DPR's Enforcement and Monitoring Division to Department Director James Wells. The memo, "Results of Methyl Bromide Monitoring in Monterey County," stated that all measurements found were "consistent with what previous methyl bromide monitoring studies have found, and what would be predicted at these distances."

DPR found no methyl bromide at 200 feet upwind of the field, which was predictable, but found methyl bromide at five stations, north south and east of the field with 24 hour average levels of 24, 141, 153, 189 and 230 parts per billion (see map attached to DPR memo). The 230 ppb finding, although above the state's 210 ppb safety standard, was discounted by DPR because the station was set up at 25 feet from the field instead of the normal 30 foot buffer zone mark. DPR did not monitor at 200 feet downwind (on the east side of the field).

DPR's analysis of these findings was that the release of methyl bromide from the field was as predicted and therefore at safe levels of exposure and the 2nd round of fumigation should be allowed to proceed.

EWG analysis of DPR findings

A significant omission from the DPR memo was that their results were actually just the first 24 hours of results. Nowhere in the memo is this fact mentioned. Nor is it mentioned that they were awaiting more results from their lab and that these results might change when the full data are in. Their 24-hour standard applies to the peak concentration from any 24-hour period. In previous studies where DPR has conducted 48 hours of monitoring, they have reported the peak average of all samples taken, not exclusively the first 24 hours.

DPR conducted 48 hours of monitoring from 6 a.m. July 28 to 6 a.m. July 30. The results they reported on July 31 were an average of three samples taken from 6 a.m. July 28 to 6 a.m. July 29: a 6-hour sample from 6 a.m. to noon, a 6-hour sample from noon to 6 p.m. and a 12-hour sample overnight from 6 p.m. to 6 a.m.

EWG findings

EWG began monitoring the air near the Revilla Drive field at 6 p.m. on the day of the fumigation (July 28) and monitored in two consecutive 12-hour periods for the next 24 hours. Past studies have shown this to be a peak period of off-gassing from fumigated fields. Our monitors were set up side-by-side with DPR 12 hour samples at four of their stations. We monitored with the same charcoal filter method that DPR used at two stations and with stainless steel Summa canisters at all four stations.

Summa canisters are thought to be more reliable than charcoal filters for measuring methyl bromide concentrations in air. One purpose of this part of our study was to compare charcoal and canister monitoring technology.

At three of our stations, upwind of the field (to the west), the equipment also detected no methyl bromide -- consistent with DPR results. However, at our one station downwind of the field -- the station DPR said was 25 feet from the field -- we detected methyl bromide at 390 ppb and 350 ppb in consecutive samples, for an average of 370 ppb over 24 hours. This finding is 60 percent higher than the 230 ppb average DPR reported for this same station, and well above the 210 ppb safety standard.

DPR has yet to release the individual data points from their sampling and has only reported averages, so there is no way yet to compare our Summa to their charcoal samples. Our charcoal samples are still being analyzed by our lab contractor.

Round 2: Aug. 1-2, 1997

On the basis of their results from monitoring the first application, DPR allowed the second round of fumigation to proceed on Aug. 1. DPR conducted charcoal-tube monitoring of this fumigation as well, at 17 sites around the field. Seven samplers were 30 feet from the edge of the field; one sampler was 440 feet east of the field; two samplers were 60 feet west of the field, two were 100 feet west, and five were 200 feet west, at the property line of the Revilla Drive residents.

According to an Aug. 15, 1997 memorandum from Gosselin to DPR Director James Wells,, "None of the results at the 200-foot buffer zone distance exceeded the target volume of 210 ppb. The highest 24-hour time-weighted average detected at the 200-foot buffer zone was 199 ppb. However, at four locations inside the [200-foot] buffer zone, the 210 ppb level was exceeded."

EWG analysis of DPR findings

Again, the summary released by DPR makes a detailed analysis of the agency's second round of monitoring difficult. Although DPR monitored for 48 hours following the application, in segments of two six-hour periods and three 12-hour periods, the summary discloses only the highest 24-hour averages for the 17 samplers. The summary does not specify which 24-hour period was used for the averages, nor what levels were detected during the shorter time segments. Gosselin's memo says DPR "will complete a detailed report on these findings in the next few weeks."

EWG findings

The purpose of this phase of our study was to monitor more intensively the drift of methyl bromide outside the DPR buffer zone into people's backyards. EWG set up monitors (both Summa canisters and charcoal filters) at four stations on the west side of the fumigated field, including two in the back yards of Revilla Drive residents. The fumigation was supposed to be forestalled if wind was blowing toward the homes on Revilla Drive and was delayed two hours for this reason, but then finished the same day.

All samples were taken between the field and the houses on Revilla Drive. The station locations were:

Station 1: 30 feet from the edge of the field at the center along the west side.

Station 2: 30 feet from the edge of the field at the southwest corner.

Station 3: In the backyard of 15053 Revilla Dr., 236 feet due west of field.

Station 4: In the backyard of 15047 Revilla Dr, 248 feet from the southwest corner of the field.

Results (parts per billion):

| Station | 8/1-2/97 6 pm-6 am | 8/2/97 6 am-6 pm | 24 hour avg. |
|----------------|-------------------------------|-----------------------------|---------------------|
| 1 | 480 | 220 | 350 |
| 2 | 180 | no sample | 90 |
| 3 | 490 | no sample | 245 |
| 4 | 290 | 28 | 159 |

Comments

In the backyard of 15053 Revilla Drive (Station 3), EWG's measurement exceeded the 210 ppb 24-hour standard, even though our sample was taken only for 12 hours. The 12-hour sample found 490 ppb. Using DPR's formula, even if no methyl bromide at all was in the air during the other 12 hours, the 24-hour average at this site would be 245 ppb.

At Station 4, in the backyard of 15047 Revilla Drive, we also got a high reading of 290 ppb for the first 12 hours. The 24-hour average for this station was 159 ppb.

At Station 1, at 30 feet, the normal buffer zone distance for this type of fumigation, we detected an average of 480 ppb in the first 12 hours and 350 ppb for the full 24 hours -- 67 percent higher than the state standard.

Interestingly, we detected levels at Station 3 that were higher than Station 1, which was only 30 feet from the field in the same orientation -- something that could be accounted for by the swirling winds that at the site that day.

At station 2, also 30 feet from the field, during the first 12 hours we detected an average of 180 ppb. No EWG sample was taken at this station during the second 12 hours, making the 24-hour average 90 ppb.