

SUMMARY OF EPISODES ASSIGNED PRIORITY
INVESTIGATION STATUS IN 1989

By

Bernardo Hernandez, Environmental Research Scientist

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California Environmental Protection Agency
Department of Pesticide Regulation
Worker Health and Safety Branch
1220 N Street, P.O. Box 942871
Sacramento, California 94271-0001

ABSTRACT

In 1989, the California Department of Food and Agriculture now the Department of Pesticide Regulation (DPR) designated 105 episodes alleged to have been related to pesticide exposure as initially meeting priority investigation criteria. The types of pesticides involved most often were organophosphate insecticides (30 episodes), the antimicrobials (13 episodes), and the fumigants (17 episodes). Eight environmental episodes qualified as priority investigations. Two because of heavy crop loss, four because of the killing of non-target animals and two because air pollution required evacuations involving more than 25 people. Eleven deaths were attributed to pesticide exposure. Four were suicides. Four resulted from intruders illegally entering structures under fumigation and two when intruders entered fumigated rail cars. One applicator of liquid nitrogen as a termiticide collapsed and died from oxygen deprivation when he entered a confined space contiguous with the wall he was treating. This under scores the necessity of circumspection when dealing with any pesticide.

INTRODUCTION

The California Environmental Protection Agency, Department of Pesticide Regulation, as the State agency responsible for registering and regulating pesticides, receives and catalogs reports of incidents in which pesticides appear to have caused harm. Most of these incidents, (those that do not fall under OSHA jurisdiction), are investigated by staff members of the Agriculture Commissioner's office. The most serious incidents are determined by meeting or exceeding explicit criteria and are assigned to in-depth investigation.

Priority investigation conditions occur when one or more of three categories is met: (1) Human Effects (2) Environmental Effects and (3) Property Loss.

Human Effects criteria consist of death, hospitalization for 24 hours or more with treatment rendered, or five or more symptomatic people seeking medical treatment.

Environmental criteria consist of the following: Air contamination- when 25 or more people are evacuated. Water contamination- when the drinking water supply of ten households are affected. Soil contamination- the cost of clean-up or decontamination exceeds \$50,000. Priority investigations based on the killing of non-target wildlife are instituted when 50 or more migratory birds or 500 or more birds die, when 500 or more game fish or 5000 or more other fish die, when 5 or more game or fur bearing animals die, or when one member of an endangered vertebrate species is found dead.

Loss of Property (crops or livestock)- Priority investigation is triggered when the value of the loss exceeds \$50,000.

CASE SUMMARIES

One hundred and five episodes were assigned priority investigation cases for the year 1989. A summary of the findings follow:

1-LA-89

JANUARY 1989

Human Effects (DEATH)

Methyl Bromide/Chloropicrin

A man died after having broken into a house that was under fumigation with methyl bromide. The victim was observed in the front yard of the house "yelling and convulsing." He was transported to a hospital where he died a few hours later. Investigation by the County Agricultural Commissioner's office revealed that the victim had eaten food that had been bagged before application. The structure was properly tarped, properly posted and appropriate secondary locks were in use. No violations of pesticide use laws or regulations were uncovered.

2-NEV-89

SEPTEMBER 1988

Human Effects (DEATH)

Diquat

A male was found dead after knowingly having ingested the herbicide diquat. A one-quart container of Ortho "Tag" (diquat 35.3%) was found in the cabin along with a glass containing a dark liquid mixed with what looked like milk. The coroner determined the death a suicide. The County Agricultural Commissioner only became aware of the incident when the Sheriff's Department contacted them to find out how to dispose of the chemical.

3-LA-89

JANUARY 1989

**Human Effects (DEATH)
Sulfuryl Fluoride/Chloropicrin**

An individual was found dead inside an Amtrak rail car that had been recently fumigated with sulfuryl fluoride. Investigation revealed that the five fumigated railroad cars were tape sealed, posted with warning signs and secured with heavy chains and padlocks. Smoke alarms, in all five cars, were sounding before the time of aeration due to the presence of the fumigant. Force had been used on the secondary lock of the car where the body was found. The warning signs and the sounding of the smoke alarm plus the chloropicrin should have warned the individual not to enter. The Coroner's report states the cause of death was "ethanol and fluoride intoxication." The investigative staff showed that the pest control company had used appropriate warning signs, seals and secondary locks. No violations of pesticide use laws were found.

4-LA-89

JANUARY 1989

**Human Effects (SERIOUS ILLNESS)
Methyl Bromide/Chloropicrin**

An intruder broke into a tarped house that was under fumigation with methyl bromide. The homeowner discovered the break-in and called police. The intruder was found by the police and taken to a hospital where he was hospitalized for three days. Investigation showed that the structure was properly posted and appropriate secondary locks were in use. Physicians noted exposure to methyl bromide and acute alcohol intoxication. No violations were uncovered.

5-LA-89

SEPTEMBER 1988

**Human Effects (GROUP ILLNESS)
Chlorine**

Five people were exposed and sought treatment at a hospital after a chlorine line broke at a water treatment plant. A chlorine gas cloud drifted throughout the industrial park. Of the five people affected, four experienced breathing difficulty, coughing, gagging, burning of eyes and nose and headaches. They were treated and released. The fifth individual was diagnosed as having blepharitis. He was hospitalized for two days resulting in two days off work. Investigation by county inspectors did not reveal any violations of the California Code of Regulations (CCR).

6-SD-89

FEBRUARY 1989

**Human Effects (DEATH)
Methyl Bromide/Chloropicrin**

An intruder entered one of two apartment buildings undergoing fumigation. He was seen staggering in an ally by a neighbor who called the Police. Arriving, the Police found the man suffering from convulsions. He was transported to a hospital where he died two days later. Investigation showed that the buildings had been properly posted, tarped and sealed. Spring clamps of one building had been removed during the break in. Secondary locks used on all doors of the apartment building were not a deterrent as the doors were kicked in. The Agricultural Commissioner uncovered no violations of pesticide use laws or regulations.

7-ALA-89

AUGUST

1989

Human Effects (GROUP ILLNESS)

Diazinon

A mother forced her two children (ages 7 and 9) to ingest sleeping pills, antihistamine and some diluted diazinon. She then ingested the very same chemicals. Six ounces of 25% diazinon concentrate was consumed by the three. The seven-year old experienced general weakness, drowsiness, drooling and a slow heartbeat. The nine year old experienced symptoms of vomiting, diarrhea, tearing intermittent muscle twitching and a slow heartbeat. The mother's symptoms included drowsiness, crying, general weakness, vomiting, diarrhea and drooling. The woman and her two sons were transported to the hospital by the woman's mother who discovered them. Both children were hospitalized for four days and the mother for three days. Though there is obvious misuse of the insecticide, due to the circumstances no action has been taken.

8-SCL-89

DECEMBER

1989

Human Effects (SERIOUS ILLNESS)

Sodium Hypochlorite

A maintenance worker repairing equipment at a water treatment facility suffered chest pains and breathing difficulty after exposure to chlorine gas. He was replacing a valve on the chlorine gas line. When he removed the valve, chlorine gas hit him in the face. Apparently, gauges that indicate the presence of chlorine in the lines showed them to be clear. This equipment malfunction led to the exposure. He was not wearing the required safety equipment (i.e., goggles or face shield, rubber gloves) as required by label at the time of the incident. He was hospitalized for two days resulting in two work days lost. A notice of violation was issued to the City of San Jose for not reviewing and ensuring that all label safety information is followed.

9-IMP-89

MARCH

1988

This priority investigation is a duplicate of 94-IMP-88. See HS Report-1620, case 94-IMP-88 for further information.

10-MON-89

FEBRUARY

1989

Human Effects (SERIOUS ILLNESS)

Unrelated to Pesticides

While preparing a calcium nitrate fertilizer solution, a flower nursery employee developed symptoms of nausea, diarrhea and weakness. He took himself to a physician where he was

hospitalized for four days and was treated for occupational asthma. The fertilizer the worker was using states "Material is a nuisance dust" and that an approved "dust" respirator should be worn when the material is being handled. He was not wearing a respirator or a dust mask while handling the fertilizer. The Agricultural Commissioner discovered that no pesticides were involved in this episode. No further enforcement action was taken.

11-MON-89

NOVEMBER 1989

Human Effects (SERIOUS ILLNESS)

Unrelated to Pesticides

A celery cutter became ill during harvest. Symptoms included diarrhea, abdominal cramping, nausea and later weakness and numbness of the arms and legs. The worker was hospitalized for six days and diagnosed as having Guillain-Barre syndrome. Upon release, he left his temporary home in Watsonville and returned to his home in Brawley. The worker had no further abdominal symptoms but continued to have difficulty with weakness in his hands, arms and legs. He saw a neurologist for follow-up of his previous hospitalization. The Agricultural Commissioner found no reentry violations however, one pre-harvest violation was discovered. Oxamyl had been applied to the celery block and the celery was harvested six days after the application instead of seven as required by label. This incident occurred 10 days before the worker's onset of his symptoms. A notice of violation was issued to the farming company for harvesting one day before the expiration of the preharvest interval.

12-SCL-89

MARCH 1989

Human Effects (GROUP ILLNESS)

Ethylene Oxide

Contractual workers were working on a sterilization unit when they accidentally released some ethylene oxide into the sterilization room. The automatic alarm sounded alerting the eight hospital employees to evacuate the room. The two service workmen remained in the room to complete their job. They were wearing no safety equipment. A hand held gas detector did not register any gas in the room. The two workmen did not report any symptoms of exposure, nor did they seek medical attention. Of the eight hospital employees who sought medical aid, three reported no symptoms and five experienced headaches, stinging eyes, swollen throat and tongue, and blurred vision. The hospital notified Cal/OSHA about the incident. No violations were uncovered by this investigation.

13-TUL-89

MARCH 1989

Human Effects (SERIOUS ILLNESS)

Ziram

A mixer/loader working with the fungicide ziram experienced pain and inflammation of his eyes with some mild respiratory distress. He indicates that sweat started getting into his eyes and he rubbed them. Dust may have also entered through the side vents of his goggles. He was given the job of holding the bags of ziram down while the helicopters landed. He was seen leaving the work site driving erratically. A co-worker stopped him and contacted the employer's office and was instructed to take the employee to the doctor's office. The mixer/loader was hospitalized for 48 hours where he was treated for bronchitis and extremely

inflamed eyes. Blood for cholinesterase tests was taken; and cholinesterase found to be within the normal ranges. The employee was provided with and was wearing the proper safety equipment. The investigative staff found that all label directions were followed and no violations were found.

14-LA-89

MARCH 1989

Human Effects (GROUP ILLNESS)

Malathion

A convenience store customer dropped and broke a pint bottle of "Ortho" Malathion 50. Vapors from the broken bottle of pesticide resulted in three store employees being taken to the hospital. The fire department responded to the incident and ordered an evacuation of the store. All three experienced symptoms that included coughing, sore throat, burning of the eyes, upset stomach and shortness of breath. All were treated and released the same day. Two missed their scheduled work shifts and one missed two days work. It was suggested that a "clean-up" policy be adopted to handle future accidents. Investigation showed that this and other pesticides offered for sale in the store are handled properly thus no regulatory action was taken.

15-ORA-89

JANUARY 1989

Human Effects (SERIOUS ILLNESS)

Chlorine

A community college employee was hospitalized for three days, losing two work days, after having been exposed to chlorine gas. The County Agricultural Commissioner discovered that the employee was disconnecting a hose from a chlorine tank cylinder. The pressure remaining in the cylinder forced chlorine gas onto his face. This exposure caused him to experience breathing difficulties. Paramedics were called and transported him to the hospital. The investigation revealed that the pressure in the line resulted from the line being clogged. In addition, it appears that the indicator attached to the cylinder was not functioning properly, the employee had not been trained, and was not wearing the required safety equipment. Notice of violations were issued to the community college. No further action was taken due to the type of industry and that the scope of the Worker Health and Safety Regulations had recently been expanded. Follow-up inspections conducted by the county showed that the non-compliance had been corrected.

16-ALA-89

MARCH 1989

Human Effects (GROUP ILLNESS)

2,4-D

Six employees of a windmill repair firm were exposed to 2,4-D drift. The herbicide was being applied by air. Shortly after the exposure, they all complained to their foreman of headaches, nausea, watery eyes and throat irritation. They were taken to a local hospital examined and released. The County Agricultural Commissioner's investigation uncovered two violations: (1) application of restricted material in conflict with the Director's regulation and

(2) use of a pesticide in conflict with labeling. A \$300 fine was paid by the aerial pesticide company.

17-COL-89

MARCH 1989

Human Effects (DEATH)

Aluminum Phosphide

A male body was found when a rice car was opened at a rice plant in California. It was estimated that he had been dead about 12 days. The rail car originated out of Houston, Texas. Investigation discovered that the car of milled rice was fumigated with aluminum phosphide and was sealed with plastic and placard. Rips in the plastic used to seal the compartment in which the body was found indicate that he had entered the rail car after the fumigation was completed. The coroner could not determine with certainty whether the cause of death was from suffocation or possibly fumigant poisoning. That investigation uncovered no violations concerning pesticide use.

18-SAC-89

MARCH 1989

Human Effects (DEATH & ILLNESS)

Calcium Polysulfide

A female was admitted to a local hospital after having ingested large amounts of a pesticide with calcium polysulfide as its active ingredient. She died shortly thereafter. She was found in her room by her sister in an unconscious state and was transported to the hospital. At the hospital, an emergency response nurse while doing chest compression on the victim came in contact with victim's skin. This caused the nurse to experience symptoms of nausea, hot and light headedness. She was seen in the emergency room, treated and sent home. She lost no work days as she was on her days off. County authorities classified the death as a suicide. The coroner's report confirmed it. No violations were uncovered other than the victim's misuse of the product.

19-YOL-89

APRIL 1989

Environmental Effects (CROP LOSS)

Paraquat

The County Agricultural Commissioner's office received a call from a grower stating that he had serious spotting on several of his crops. Samples were taken and analyzed. The results were positive for paraquat. Further investigation revealed that the paraquat residue was caused by drift from an application three days earlier. Total crop loss amounted to \$20,000. A priority number was assigned early in the investigation because several other large wheat crops showed damage but they outgrew the symptoms and no crop loss reports were filed. Thus this episode does not meet priority criteria. A notice of violation was issued to the aerial spray company for allowing substantial drift to non-target areas and having an application made when there is a reasonable possibility of damage to non-target crops, animals of other public or private property.

20-IMP-89

MARCH 1989

Human Effects (GROUP ILLNESS)

Sulfur

A citrus work crew experienced symptoms of eye irritation, skin rashes, throat irritation, headaches and diarrhea. Twenty-seven workers were examined by a doctor. All the workers noticed a lessening of the symptoms after not working in the orchard. All were released to return to work. The work crew wore leather gloves for protection from thorns, but no other protective clothing or equipment. The Agricultural Commissioner discovered that dusting sulfur had been applied in late March because of the heavy build-up of thrips. The one day reentry interval had expired before workers entering the orchard. Leaf samples from the orchard indicated the presence of sulfur. Spray records indicate that the material was applied according to label, applicable laws and regulations. No further enforcement action was taken.

21-LA-89

FEBRUARY 1989

Human Effects (SERIOUS ILLNESS)

Unrelated to Pesticides

A retirement home housekeeper poured chlorine and Lime-a-Way[®] down the drain to facilitate cleaning the drain. This combination produced noxious fumes that she inhaled. Her symptoms included dizziness, dyspnea and an ill feeling. She sought medical attention and was diagnosed as suffering from chlorine inhalation. She was hospitalized for two days and lost two days of work. These products were not being used as pesticides but as cleaning agents. It was not considered to meet priority episode criteria when first reported. It has since been upgraded to a priority episode because of the length of hospitalization involved. However, since the causative agents were not being used as pesticides, this episode cannot be considered pesticide related. The Agricultural Commissioner found no violations. Exposure was accidental. No further action was taken.

22-MON-89

FEBRUARY 1989

Human Effects (SERIOUS ILLNESS)

Chlorine

An irrigation district supervisor, while disconnecting a chlorine gas cylinder became exposed to the chlorine vapors pressure built-up in the hose. He developed shortness of breath and burning eyes. He continued his work until his symptoms worsened, then drove himself to the main office. The plant superintendent transported him to the nearest fire station where he was then transported to the hospital. He was hospitalized for five days and treated for acute lung injury from chlorine exposure. A notice of violation was issued to the irrigation district for (1) lack of training, (2) safety equipment not worn, though provided and (3) using chlorine gas in conflict with the label and chlorine manual.

23-MON-88

AUGUST 1988

Human Effects (GROUP ILLNESS)

Lindane

The housekeeping department for a local hospital shampooed the carpet in the medical records department with dog dip shampoo to control fleas. The following morning, 13

employees reported to work and smelled a strong pesticide odor. Thirty minutes later, 5 employees sought medical attention after developing symptoms resulting from the odor. Symptoms included chest pains, nausea, coughing, headaches, throat irritation and breathing difficulties. A violation was issued for use of a pesticide in conflict with the label. The hospital was also warned that if any similar incidents occurred in the future, civil penalty action would be levied.

24-TUL-89

APRIL

1989

Human Effects (GROUP ILLNESS)

Chlorpyrifos

Two harvesting crews, in two separate blocks, were drifted on by an aerial application of chlorpyrifos to a third adjacent orange grove. The crews notified their respective foremen that the pesticide drift was raining down on them. Forty-one workers were seen by physicians. Symptoms consisted of the following: nausea, vomiting, headaches, diarrhea, abdominal pains, bloody nose, tearing and coughing. Not one member of either work crew required hospitalization or lost work days. Investigation revealed that the application occurred even though the work crews had been identified and a slight breeze in the direction of the two crews had been observed. Department of Pesticide Regulation employees, along with the County Agricultural Commissioner collected foliage samples from the application and drift sites. Fruit samples were also collected. The CDFA laboratory analysis of the leaf samples were positive for chlorpyrifos. Fruit samples were found to contain chlorpyrifos below established tolerance levels. The Agricultural Commissioner found the pest control company to be in violation of Food and Agricultural Code Sections 12972 & 12973, (making a pesticide application when a "reasonable possibility of contamination of non-target areas, public or private property exists" and making an application when a "reasonable hazard of contamination of bodies (persons) not involved in the application process exists." The pest control company was fined \$1600 for these violations.

25-SD-89

APRIL

1989

Human Effects (Serious Illness)

Unavailable Information to Determine

An individual was making a pesticide application for a friend and soon afterwards fell ill. He was wearing shorts, T-shirt, tennis shoes and a dust mask during the application. This inappropriate clothing resulted in symptoms of eye irritation, chest tightness and breathing difficulty. He drove himself to the hospital. He was hospitalized and released four days later. County Agricultural investigators could not uncover information as to the pesticides used, rates or the location. He would not cooperate with the investigation. The Agricultural Commissioner made numerous attempts to obtain this information. Since cooperation can not be obtained and medical information is not released, no further enforcement action can be taken.

26-VEN-89

APRIL

1989

Human Effects (Serious Illness)

Methyl Bromide/Chloropicrin

Three occupants of a fumigated home went to the hospital after noticing a strange odor in the house and experiencing symptoms of nasal and throat irritation, burning sensation to the eyes, coughing, headaches and dizziness. The odor continued to increase in strength even after the house had been cleared for re-entry. The County Agricultural biologist investigating the incident was unable to remain inside the home for more than a few minutes due to the strong odor. It is believed that a chemical reaction between the methyl bromide and various rubber products in the home at the time of fumigation, including carpet padding and furniture padding, was the cause. Though the label recommends removing these types of rubber products before fumigation, it does not require their removal. The Agricultural Commissioner believes these statements are not enforceable. Therefore, no civil action was initiated. Although the initial report indicated one person was hospitalized, it was later determined that none of the occupants were hospitalized.

27-ORA-88

APRIL

1988

Human Effects (SERIOUS ILLNESS)

Ammonium Fluosilicate

A known asthmatic, who suffers frequent attacks, was exposed to ammonia fluosilicate. While applying the material, his respirator malfunctioned, forcing him to inhale some of the ammonia fluosilicate. He developed coughing spasms, headache, fever and wheezing. He was hospitalized for 48 hours, losing two days of work. His exposure resulted in aggravation of his asthma condition. During this investigation, the Agricultural Commissioner discovered that the pest control company was improperly storing contaminated containers. A violation was issued. Follow-up inspections found that the structural pest control company is now disposing of the contaminated containers through a hazardous waste hauler. No further action was taken.

28-STA-89

MARCH

1989

Human Effects (SERIOUS ILLNESS)

Chlorpyrifos

An aerial applicator had just completed a pass when he banked the plane into a turn. His plane began having problems gaining altitude. Rather than hitting the electrical wires, and possibly hitting the flaggers on the ground, he crashed the plane into an empty field. Upon impact he was drenched with the pesticide formulation of chlorpyrifos that ran out of the hopper through the broken glass. He suffered eye pain, fractured ribs, scattered abrasions and hematoma of the left testicle. Only the eye pain is related to pesticide exposure. He spent 1 1/2 days in the hospital then returned home to continue his recuperation. Days of disability are not known. No violations of the California Code of Regulations were found.

29-TUL-89

APRIL

1989

Human Effects (SERIOUS ILLNESS)

Parathion

An irrigator, assisting a pest control operator, was operating the water pump used in a mixing and loading operation. The application was being made to a citrus orchard 1/4 mile from the mix/load site and the water pump was 30 feet from the fill site. The irrigator did not mix, load or apply any of the pesticides. Parathion was the pesticide involved. The irrigator worked the

entire week in various orchard blocks, but did not work in the treated block. One week after operating the pump, he developed a rash, nausea, headaches, dizziness, abdominal pains and vomiting. He was hospitalized for 48 hours causing him to miss two days of work. Blood drawn for cholinesterase testing indicated his plasma cholinesterase was 6.7% depressed and RBC cholinesterase was 15% depressed relative to midpoint of normal range. The County Agricultural Commissioner noted that the irrigator did not wear any safety equipment as none was required since his task only included turning the water pump on and off. No violations were uncovered of California Laws and Regulations during this investigation.

30-LA-89

DECEMBER 1988

Human Effects (SERIOUS ILLNESS)

Unrelated To Pesticides

A janitor mixed ammonia and chlorine together to clean a linoleum floor at the store. He was overcome by the vapors generated by the two products. He developed breathing difficulties, wheezing, coughing and acute bronchospasms. He drove himself to the hospital where he was hospitalized for three days; days off work unknown. The floor area in the store is not typically disinfected and thus the bleach was not being used as a pesticide but as a cleaning agent. It was not considered to meet priority episode criteria when first reported. It has since been upgraded to a priority episode because of the length of hospitalization involved. However, since the causative agents were not being used as pesticides, this episode cannot be considered pesticide related.

31-LA-89

DECEMBER 1987

Human Effects (SERIOUS ILLNESS)

Sodium Hypochlorite

An employee was disinfecting a trash receptacle with a bleach solution. She apparently inhaled vapors from this bleach solution and experienced shortness of breath. She was taken to the hospital emergency room. She was admitted, treated and released 24 hours later, no additional time off work was necessary. No enforcement action was taken.

32-SD-89

DECEMBER 1987

Human Effects (SERIOUS ILLNESS)

Sodium Hypochlorite

A dishwasher was cleaning and disinfecting the hood area, the kitchen ceiling, and the kitchen with bleach and water. After 20 minutes, she noticed a strong odor and developed breathing difficulty and a burning in her lungs. She continued working the final hour of her shift. The next day, she saw a doctor who treated her for asthmatic bronchitis. Not responding to treatment, she was hospitalized for three days. She was off work for 49 days. The Agricultural Commissioner uncovered no violations during this investigation.

33-VEN-89

FEBRUARY 1988

Human Effects (GROUP ILLNESS)

Methamidophos

An aerial spray application of methamidophos was made to a broccoli field approximately 120 yards west of a California Youth Authority School. Eleven instructors at the school

complained of the odor and reported the following symptoms: headaches, congestion, nausea, dizziness and eye, nose and throat irritation. All sought medical attention, though no treatment was rendered by the nurse. Investigators checked with the weather monitoring station located 1.5 miles west of the California Youth Authority School and found that the wind direction and speed (nine miles per hour from the North) on the day and time of application would have carried any drift away from the school. Presence of odor was confirmed by management. Swab samples collected were apparently lost prior to CDFA laboratory analysis. After reviewing all available information at time of application, no violations could be found.

34-SD-89

JUNE

1988

**Human Effects (GROUP ILLNESS)
Sodium Hypochlorite**

Three kitchen workers, after having mixed bleach and Lime-a-Way[®] to clean the kitchen floor experienced severe coughing. One aggravated his asthmatic condition. The three were taken to the hospital suffering from chlorine inhalation. Two employees were treated and released and allowed to returned to work the next day. The third individual was hospitalized for 40 hours, due to complications from his asthmatic condition. The Agricultural Commissioner found no violations of pesticide use laws or regulations. No further enforcement action was taken.

35-LA-89

OCTOBER

1988

**Human Effects (GROUP ILLNESS)
Unrelated To Pesticides**

Ten days after an "insecticide fogger" was used in their work area, five employees sought medical attention. Their symptoms included nausea, sore throat, dizziness, headache, eye irritation and swollen lips. Blood cholinesterase test, urine tests, and heart and liver exams were given. None were hospitalized for their symptoms and no additional time off work was warranted. In the Physician's opinion a virus was the most likely the cause of these symptoms and it was "running its course" throughout the office personnel. The County Agricultural Commissioner noted that the air conditioner filters had been changed four days after the "fogger" had been used and that there was no evidence to indicate a possible pesticide exposure. No enforcement action was taken.

36-LA-89

NOVEMBER

1988

**Human Effects (GROUP ILLNESS)
Insufficient Information To Determine**

Six employees saw a physician after allegedly having been exposed to ethylene oxide gas. The ethylene oxide gas was being used in a sterilizing unit at the hospital. This incident was referred to Cal-OSHA. Investigations of such incidents fall within their jurisdiction. Information on symptoms, treatment, days off work and hospitalization is not available.

37-SD-89

JUNE

1988

Human Effects (GROUP ILLNESS)
Monocrotophos & Methomyl

Five firefighters responding to a fire at the home of a flower nursery grower exhibited symptoms of pesticide exposure that included weakness, nausea, vomiting and headaches. One of the buildings to burn down was a storage shed which housed monocrotophos and methomyl. All five were treated by a physician and released. Blood cholinesterase levels of the fire fighters were within laboratory normal range. Three of the five firemen lost no time off work and two took one day off each. No violations were discovered.

38-SBD-89

MAY

1989

Human Effects (SERIOUS ILLNESS)
Unknown

A three-year old child was hospitalized for five days after possibly being exposed to pesticides around her home (mobile home). Her parents live on the grounds of an open-air market where her father is responsible for the ground maintenance. Numerous poisons and containers were found in and around the home. one of which appeared to be an organophosphate. Her symptoms included uncontrolled seizures, increased salivation, marked miosis and weakness. Diagnostic studies performed included a urine drug screen that was negative and a blood cholinesterase test that was reported as slightly elevated instead of depressed as expected with organophosphate poisoning. The Agricultural Commissioner did a thorough investigation of the area. Foliage sample were sent in for analysis of possible pesticide residue. These results were negative. Evidence available was inconclusive that the child was poisoned by organophosphates. No violations of pesticide misuse was found. No further enforcement action was taken

39-VEN-89

MAY

1989

Human Effects (GROUP ILLNESS)
Unrelated To Pesticides

A volunteer fire department responded to a fire at a retail nursery. Due to the various chemicals stored in the building and the potential for toxic fumes from these chemicals, they did not try to control the fire. With the aid of the sheriff's office, approximately 5,000 residents were evacuated from the surrounding areas. Those treated at the hospital and released included two sheriff cadets who went door-to-door alerting residents to evacuate were treated for smoke inhalation, and a youth, with a history of allergies and suffering breathing difficulties. A volunteer firefighter exhibiting symptoms of coughing, runny nose, and chest congestion was hospitalized for 36 hours due to possible chemical inhalation. Blood tests were negative for the presence of chlorinated hydrocarbons, arsenic and heavy metals. His condition was diagnosed by a physician as non-infectious hepatitis and low arterial blood oxygen. Investigation by the Agricultural Commissioner did not reveal any violations of the California Food and Agricultural Code.

40-SJ-89

MARCH

1989

Human Effects (SERIOUS ILLNESS)
Linuron

After mixing and loading linuron into his spray rig, the applicator removed his goggles and was carrying the measuring container to a rinse area when it slipped from his grip. Upon striking the ground, droplets of the herbicide concentrate flew up from the container splashing him on the eyelid. He flushed the eye with water and returned to work thinking nothing of it. The next day, he developed swelling of the eye area and saw a physician. He was diagnosed with chemical conjunctivitis. He was referred to an eye specialist who admitted him to the hospital for six days. He was off work for 10 days. He was treated for a staphylococcus infection of his left eye and has had no further problems. The Agricultural Commissioner discovered no violations.

41-GLE-89

MAY 1989

Human Effects (GROUP ILLNESS)

Unrelated To Pesticides

An eighteen member weeding field crew experienced symptoms that included itchiness, severe rashes and blistering. All sought medical attention. The physician's diagnosis was allergic contact dermatitis. The field spray history indicated that no pesticides had been applied to the field within the last six months. Foliage samples taken revealed no pesticide residues. Field conditions were extremely weedy. Weed samples sent in for analysis were identified as mayweed (dog fennel) prickly lettuce, mustard, cocklebur and thistle. These are known skin irritants. Seventy per cent of the weeds in the field were mayweed. It is known that mayweed (dog fennel) does cause skin dermatitis and blistering in humans and animals (O'Malley and Barba, 1990). No violations were found. No further enforcement action was taken.

42-RIV-89

MAY 1989

Human Effects (SERIOUS ILLNESS)

Mevinphos, Dimethoate, Permethrin, Methomyl, Methamidophos & Endosulfan

A mixer/loader replaced a faulty pump on a nurse rig early that morning. Throughout the day he loaded oxamyl and dicofol. That evening he felt run-down and nauseated. During the next four days, he worked with permethrin, dimethoate, mevinphos, methomyl, methamidophos and endosulfan. He continued to feel run-down and nauseated. He told his supervisor who took him to a physician. He was diagnosed as having a reaction to the pesticides he was working with and depressed cholinesterase levels. He was hospitalized for two days and treated with atropine. The month before, his baseline cholinesterase level was considered normal. Cholinesterase testing done after his illness indicated a 44% RBC depression and a 42% plasma depression. The Agricultural Commissioner found that a respirator, safety goggles, coverall, rubber boots and rubber gloves had been worn and that he was properly trained. No violations were found.

43-DN-89

NOVEMBER

1988

**Human Effect (SERIOUS ILLNESS)
Chlorine Gas**

Two electricians were installing a chlorine detector unit. One of the electricians noticed a chlorine leak and alerted his co-worker. Both workers ran out of the room and notified a city employee who turned off the chlorine supply line and repaired the leak. The electrician's supervisor was notified and took the men to the hospital as a precaution. One electrician reported no ill effects. The other experienced shortness of breath, chest pains and eye irritation. Both men were examined and released. The leak was caused by a gouged gasket on the chlorine tank's regulator. The investigation revealed that the exposure occurred as a result of an unforeseeable accident. The electrician who suffered ill effects has been in and out of the hospital since then. The amount of time he has spent in the hospital could not be determined. He is on disability and has not worked since the incident. County Agricultural personnel could not detect any violations of the Food and Agricultural Code. No enforcement action was required.

44-SJ-89

JANUARY 1989

**Human Effects (DEATH)
Unrelated to Pesticides**

A man allegedly ingested a nicotine-based pesticide product. He apparently went on a shooting spree and then shot himself. Due to police investigation and involvement further information was unavailable. No violations of pesticide laws or regulations were uncovered.

45-RIV-89

APRIL 1989

**Effects (SERIOUS ILLNESS)
Diazinon & Malathion**

A structural PCO was treating the perimeter of a house with diazinon and malathion when the hose behind him blew off. In an attempt to move the hose away from the swimming pool, he tripped and fell, knocking his goggles off and getting some pesticide into his eyes. He was treated at the site by a physician. Later he received additional treatment by an eye specialist. This treatment hospitalized him for two days, losing two days of work with vision loss and pain. Investigation uncovered no apparent violations. No enforcement action was taken.

46-ALA-89

MARCH 1988

**Environmental (EVACUATION)
Chlorflurenol**

A chlorflurenol application was made to ornamentals around the outside of two county office buildings that morning. Ten minutes later, 34 employees left the buildings because the odor was very strong entering the building through the ventilation system. Employees of both buildings experienced burning eyes, nausea, headaches, mouth irritation, and diarrhea. The Agricultural Commissioner found that none of the employees sought medical aid. All returned to work that afternoon. The product was used according to label directions. No violations were found.

47-KER-89

MAY 1989

**Environmental (BIRD KILL)
Insufficient Information To Determine**

Kern County Agricultural Biologists, conducting a sodium fluoroacetate (1080) post treatment survey, found 58 raven carcasses and one blackbird carcass over a seven day period. The sodium fluoroacetate was applied to rangeland bordering agriculture crops. The carcasses were disposed of according to guidelines found in the Department of Pesticide Regulation (DPR) and the California Department of Fish and Game (CDFG) Memorandum of Understanding. CDFG examined and analyzed four ravens and one blackbird and was unable to detect sodium fluoroacetate residue. Cause of death was not determined. No violations of State laws and regulations were found.

48-KER-89

MAY

1989

**Environmental (ANIMAL KILL)
Insufficient Information To Determine**

While conducting a sodium fluoroacetate (1080) post treatment survey, Kern County Biologists found 12 cottontail rabbit carcasses. The CDFG laboratory examined and analyzed two rabbit carcasses. Sodium fluoroacetate or anticoagulants were not detected, although the carcasses exhibited signs of bleeding and hemorrhaging. CDFG was unable to determine cause of death. Joint investigation by DPR, CDFG and the County Agricultural Commissioner's office uncovered no violations. No enforcement action was taken.

49-SD-89

APRIL

1989

**Human Effects (SERIOUS ILLNESS)
Sodium Hypochlorite**

A janitor mixed phosphoric acid and bleach together to disinfect the cafeteria floor. Vapors from the mixture affected eight people in the kitchen area plus the janitor. The nine saw a physician for their symptoms of headaches, nausea, breathing difficulty and eye irritation. None required hospitalization or lost additional work time. The Agricultural Commissioner did not discover any violations of the Food and Agricultural Code. No further enforcement action was taken.

50-SD-89

MARCH

1989

**Human Effects (GROUP ILLNESS)
Unrelated to Pesticides**

During the reorganization at a grocery store, certain commodities were grouped together for redistribution. The pool chemicals were all put on one pallet. One of the boxes containing the pool chemicals was knocked over. The box contained gallon jugs of muriatic acid. One of the jugs broke open spilling its contents and creating vapors. Eight employees who were taking inventory were affected by the vapors. Symptoms included the following: nausea, chest tightness and burning throat. The employees were taken to the emergency room, treated and released. None were hospitalized or lost additional work time. Investigation found no violations in the Food and Agricultural Code. No enforcement action was taken.

51-VEN-89

APRIL

1989

Human Effects (GROUP ILLNESS)**Malathion**

Ten, one-pint bottles of malathion fell from a shelf and broke in the store room of a retail store. The spill was discovered by the crew manager, subsequent to the complaints of the smell by five stockroom employees who were entering the area continuously. The five employees also experienced the following symptoms: dizziness and a burning sensation of the eyes and nose. The five stockroom employees and the crew manager were taken to the hospital. The six were treated and released a few hours later. The spill was contained with kitty litter. The Fire Department and Environmental Health Department were notified. The fire department cleaned up and contained the spill in drums and disposed of them properly. An Environmental Health representative required that all open, exposed food be thrown out. The store was evacuated at 11:00 a.m. when the spill was discovered and cleared for re-entry four hours later. County investigators uncovered no violations of pesticide laws and regulations. No further action was taken.

52-MON-89**APRIL****1989****Human Effects (GROUP ILLNESS)****Unrelated to Pesticide**

A pesticide application of oxydemeton-methyl and dimethoate was made to a broccoli field about 1/2 mile east of a field where a work crew of 25 was weeding. The weather was very foggy and damp, a 3-5 mph breeze was out of the Northwest. Several crew members noticed the lights of the helicopter. A few workers complained of a strong skunk-like odor. Four workers experienced symptoms that included: nausea, headaches, blurred vision, eye irritation, stomach cramps and vomiting. The labor foreman notified his supervisor and was told to take the entire work crew to the hospital. The workers were examined. Blood was drawn for cholinesterase tests. The cholinesterase test results were all within laboratory normal range. All were released to return to work. Four days later, six crew members returned to the hospital because they were still not feeling well. Cholinesterase test results from this day were also within laboratory range. During this investigation, County Agricultural Inspectors collected foliage samples for residue testing. No pesticide residues were detected. While collecting these samples, the inspectors discovered a mushroom compost pile on the northeast side of the field. It was noted that the odor from the compost pile was very strong and unpleasant. No violations of pesticide use laws or regulations were uncovered. No further action was initiated.

53-TEH-89**MAY****1989****Human Effects (SERIOUS ILLNESS)****Unrelated to Pesticides**

A worker was mowing weeds in an almond orchard that he strip-sprayed with paraquat ten days before the incident. He was mowing under extremely dusty conditions and was not wearing any respiratory protection. Around midnight, he began experiencing shortness of breath and chest pains which continued to worsen. He was taken to the hospital where he was placed on oxygen and treated with Cardiazem and nitroglycerin. He was hospitalized for one day and was off work for two. The Agricultural Commissioner discovered no violations of pesticide use laws or regulations. The Doctor concluded illness could have been caused by

pulmonary insufficiency, alcoholism or allergic reaction to dust. No further enforcement action was taken.

54-KER-89

JUNE

1989

Human Effects (GROUP ILLNESS)

Sulfur & Propargite

A crew of 30 was thinning grape bunches. Next to the vineyard, in an almond orchard a propargite application was in progress. The application took place about 60 feet from the workers. No one reported being sprayed or complained of odors coming from the application site. Two days later, 13 workers from the crew experienced symptoms that included nausea, skin rashes around the neck, chest and forearms, sore throat and diarrhea. They felt that their symptoms were a result of the application being made to the almond orchard. The Agricultural Commissioner discovered that dusting sulfur and propargite had been applied five and three days before the work crew entered the vineyard. Samples collected, from the area the crew was in, included whole leaves, leaf punches and grapes were submitted for analysis. The laboratory did not detect any propargite residue in the samples but did find sulfur residues on the whole leaf (180 ppm) and leaf punches (82 mg/cm²). Also discovered was that a representative from the spray company had informed the crew foreman and the workers to move their vehicles from the orchard because they were about to spray. He advised them not to enter the treated orchard as signs had been posted. Six of the 13 workers who sought medical treatment admitted sitting under the treated almonds during their lunch break. No violations were found.

55-SOL-89

JUNE

1989

Human Effects (GROUP ILLNESS)

Chloropicrin

Two individuals found an ammunition box (presumed empty) behind a pest control building. The ammo box was taken home where they opened it in their garage exposing themselves to an unknown substance that irritated their eyes and throat. They sought treatment at the hospital emergency room, taking the ammo box with them. At the hospital, the ammo box was placed in a supply closet where a janitor accidentally kicked the box open, exposing 11 others (eight hospital staff personnel and 3 out-going patients). All experienced symptoms similar to those caused by tear gas. All were treated. The County Environmental Health Unit took the ammo box, washed it out and aerated it. The Agricultural Commissioner found that the container had been left unattended. The ammo box container was not properly identified as to its contents and was not stored in a locked enclosure. A violation was issued to the pest control company.

56-SD-89

MAY

1989

Human Effects (SERIOUS ILLNESS)

Methyl Bromide/Chloropicrin

A burglary suspect broke into a tarped fumigated house by cutting the tarp. A neighbor witnessed the burglary and notified police. The police apprehended the suspect in the house and took him to the local hospital where he was admitted with symptoms of vomiting and

rapid heart rate. He was hospitalized for 28 hours. The two police officers who apprehended the suspect were also examined. Both officers were released 14 hours later with no debilitating factors noted. The Agricultural Commissioner found that fumigation of methyl bromide and chloropicrin had been completed according to label, that the house had been properly sealed and posted. No violations were noted during this investigation. No further enforcement action was taken.

57-ORA-89

JUNE

1989

Environmental Effect (SERIOUS ILLNESS)

Unknown

On the last day of school, as a prank, a student mixed together chlorine tablets and brake fluid in a trash can. This mixture caused an evacuation of about one half of the high school campus, approximately 1145 people. A school official moved the material and the trash can from inside the school and placed them outside. He experienced breathing difficulty and chest tightness. The vice principal was treated with oxygen then released. The Fire Department Paramedics and the Agricultural Commissioner determined that the cause of smoke was the mixture of brake fluid and chlorine tablets. The chlorine tablets were obtained by an unknown student off campus. No violations were found. No further enforcement action is planned

58-SAC-89

JUNE

1989

Human Effects (SERIOUS ILLNESS)

Methyl Bromide/Chloropicrin

A complaint regarding a house under fumigation was received by the County. Within one hour of the complaint, the Agricultural County Commissioner was at the site. A thorough inspection of the premises was done. No violations of the Food and Agricultural Code were discovered. The fumigated home was approximately three houses down from the complainant's home. After learning of the fumigation, the complainant called his doctor. He left his home 1 1/2 hours after the fumigation and checked himself into the hospital suffering from malaise and headaches. He was hospitalized for two days and treated for pesticide hypersensitivity, according to the victim's claim. No Doctor's First Report was ever received. Notice of hospitalization was phoned into the Agricultural Commissioner's office by the victim one day after his release. The complainant refused to cooperate. At the request of the County Agricultural Commissioner, DPR has assumed this investigation because of the legal action being taken against the County by the victim.

59-LA-89

MAY

1989

Human Effects (SERIOUS ILLNESS)

Chlorine Gas

A swimming pool service employee was exposed to chlorine gas. He was hospitalized for two days and lost two days of work. His symptoms included shortness of breath and wheezing. The County Agricultural Commissioner discovered that the swimming pool serviceman failed to uncoil the hose between the cylinder of chlorine gas and the diffuser that goes to the bottom of the pool. Apparently when the diffuser is under 8 to 10 feet of water,

static pressure build-up of water on the diffuser causes the coiled hose to blow off the cylinder. This forced gas and water to spray back up into his face. Though respiratory equipment was available it is not required that a mask be worn unless a hazardous situation develops. Records indicated that the employee had received training in handling chlorine gas. This accident took place before an application was made. This was a new employee who apparently failed to understand how much pressure eight feet of water can produce. No violations of pesticide use laws were noted.

60-SIS-89

JUNE

1989

Effects (GROUP ILLNESS)

Ethoprop

A 145 acre field was treated with ethoprop on June 1 through June 8. Ten residents, from a town 1/4 to 1/2 mile from the application, sought medical attention for various symptoms including headaches, upset stomach, breathing problems, diarrhea and eye irritation. A strong pungent odor was noted by many and was thought to be the agent making them ill. County investigation showed that the field took about 15 days to irrigate after the material was incorporated into the first four inches of soil. The geography of the area may have caused the normal breakdown of ethoprop to be trapped for an extended time (Ames and Stratton, 1991). The following California pesticide laws and regulation violations were noted: (1) posting of storage areas and (2) container labeling requirement. Agricultural civil penalties of \$300 were levied against the grower for the above violations.

61-SJ-89

JUNE

1989

Human Effects (SERIOUS ILLNESS)

Chlorpyrifos & Propargite

A 15-year old girl was hospitalized for four days after being exposed to smoke from burning pesticide bags. The Agricultural Commissioner discovered that propargite and chlorpyrifos had been applied to a walnut orchard next to the victim's property. The pest control operator admitted burning the empty bags when the application was finished, approximately 200 feet from the victim's home. She was sleeping at the time and the wind carried the smoke through the opened bedroom window. She awoke in the morning experiencing breathing problems. She was taken to the doctor for treatment and was hospitalized and treated for chemical pneumonia. A fine of \$500.00 was levied against the pest control operator for improperly disposing of pesticide containers. The fine was uncontested and paid.

62-KER-89

MAY

1989

Human Effects (SERIOUS ILLNESS)

Paraquat

A pesticide applicator was hospitalized for five days, losing five days of work. He was operating a spray tank mounted vehicle and using a hand wand to apply the herbicide. Throughout the work day, the hand wand would become clogged and he would unclog the wand with his bare hands getting some of the material on his hands and face. While applying he was not provided with nor was he wearing safety protective material, nor was he informed of the hazards of the material. Toward the end of the work day he developed symptoms of nausea, severe abdominal pains and cramping and vomiting. The abdominal pains worsened

and he fainted. The foreman took him to the hospital. The applicator lost a total of five days of work. County Agricultural investigators uncovered the following violations of the California Code of Regulations: (1) no permit for possession and use; (2) Notice of Intent not submitted to the Commissioner 24 hours prior use; (3) failure to submit a Pesticide Use Report to the Commissioner within seven days after use of a restricted material; (4) pesticide safety information series not available to employees; (5) no documentation of training was available for the employee handling pesticide; and (6) employee not provided with proper safety equipment. The grower paid an \$800 fine.

63-SJ-89

JUNE

1989

Human Effects (SERIOUS ILLNESS)

Dimethoate, Fenbutatin-Oxide & Mevinphos

A pesticide applicator was hospitalized for eight days after having applied dimethoate, fenbutatin-oxide and mevinphos to a watermelon field. His symptoms included nausea, abdominal pains, muscular twitching and cramping. Cholinesterase blood tests performed indicated his RBC cholinesterase was depressed by 75% and plasma cholinesterase was 90% depressed relative to his baseline. County investigators noted that during the spray application, the spray nozzles became plugged several times. The applicator made several repairs while wearing his own work clothes when emerging from the enclosed cab. He was exposed often by getting the pesticides on his hands. He gradually became ill as the day wore on. He asked permission to go home, without stating that he was ill and was sent home by his employer. Later that evening he was taken to the hospital by a friend. Fines were levied for the following violations of the California Code of Regulations: (1) a closed system not available when using Category One pesticides; (2) did not ensure that employees wore clean clothes daily and (3) employer did not provide eye, hand, and respiratory protection. A \$1,100.00 a fine was paid by the grower.

64-CAL-89

JANUARY

1989

Human Effects (SERIOUS ILLNESS)

Parathion

A homeowner was hospitalized for two days after developing severe symptoms of organophosphate poisoning. He was treating the yard, the eaves and foundation of his home for spiders and insects. A hand-held sprayer containing parathion was used. The Agricultural Commissioner found out that the parathion used had been in the storage barn since the 1950's. The can appeared to be quite old and had no E.P.A. registration numbers on it. He stated most of the application was conducted while wearing jeans, T-shirt, and tennis shoes and that he did make one application wearing only shorts, no shoes and no shirt. Later that afternoon, he became ill experiencing stomach problems, foaming mouth and respiratory difficulty. He was taken to the hospital where he was decontaminated and treated. The following violations of the California Code of Regulations were uncovered: (1) use of an unregistered product; (2) use of a restricted material without a permit and (3) use of pesticide in conflict with label. A notice of violation was issued and he was cautioned to always read and follow label directions.

65-SCL-89

JULY

1989

Human Effects (GROUP ILLNESS)

Chlorine Gas

A chlorine gas leak at a community swimming pool required the evacuation of 18 people from the pool area. Of the 18 people evacuated, eight, sought medical attention at the local hospital. Their symptoms included coughing and breathing difficulty. Four of the eight were admitted for overnight observation and released the next day, while the other four were treated and released the same day. The County Agricultural Commissioner discovered that a faulty valve allowed build-up of chlorine gas that was released all at once into the pool causing the exposure. Investigation of this episode was unable to demonstrate any violations of the California Code of Regulations or the Food and Agriculture Code. No further action was warranted.

66-SOL-89

MAY

1989

Human Effects (SERIOUS ILLNESS)

Chlorine Gas

A waste management employee was hospitalized four and one half days and lost 14 days of work after inhaling chlorine gas. The employee was changing a hose from one chlorine gas tank to another when a leak occurred through the yoke connection that had been improperly installed. His symptoms included frequent coughing attacks, wheezing and respiratory problems. No protective equipment such as goggles, gloves or respiratory protection was worn at the time of the incident. No protective equipment is required to be worn by the label, only that it needs to be present on site. The only violation noted during this investigation was conflict with labeling (Section 12973 of the Food and Agriculture Code). The statement "Do not breathe air containing this gas" was violated. The employer has since required the use of self-contained breathing apparatus (SCBA) when handling this chemical to prevent future exposures.

67-ORA-89

JULY

1989

Human Effects (GROUP ILLNESS)

Diazinon

More than one hundred persons were evacuated from an office building after the employees complained of pesticide odor and feeling ill. The Agricultural Commissioner discovered that a structural pest control company had applied diazinon to the inside an office building over the weekend. The air conditioning system was in normal operation all day Saturday but was off on Sunday. Employees complained of the pesticidal odor upon entering the building at 8:00 A.M., Monday morning. One hour later, one complaint of a stomach ache was noted and many more that the odor was getting "really bad." At 12:30 P.M., the Police and Fire departments were summoned. At 1:00 P.M., they ordered the evacuation of the building. Seven employees developed symptoms that included dizziness, headaches, shortness of breath, eye and throat irritation and nausea. Two of the seven were hospitalized; one for irregular heartbeat, the other for an allergic reaction to the medication received at the hospital. Both were released 24 hours later. It was determined that the structural pest control operator

violated section 8538 of the Structural Pest Control Code (failure to provide a written notice of pesticide use and failure to give information on pesticide caution). A fine of \$50 was paid.

68-YOL-89

JULY

1989

**Human Effect (SERIOUS ILLNESS)
Unrelated To Pesticides**

A worker from a weeding crew of 25 was hospitalized experiencing symptoms of excessive salivation, breathing difficulty, weakness and diarrhea. Hospitalization has been 60 days plus and days of disability are many. An interview with the patient could not be conducted since he was on a ventilator and could not talk. The spray history of the tomatoe field indicated that trifluralin had been applied 30 days before. The Agricultural Commissioner's investigation found out that no other members of the weeding crew had sought medical attention. The attending physician diagnosed Guillain Barre Syndrome. No violations were uncovered.

69-LA-89

JUNE

1989

**Human Effects (GROUP ILLNESS)
Methyl Bromide/Chloropicrin**

Two alleged burglary suspects entered a house under fumigation. Neighbors called police to report voices coming from inside the tarped home. The Police arrived and surrounded the house. One of the burglary suspects emerged from the structure and was arrested. The fumigation company was called and sent a crew to the site. When the crew arrived, they found the tarps in place but rolled up in one location. Warning signs and secondary locks were still in place. These facts were documented by the Police Department. The fumigation crew donned their SCBA safety gear and entered where they found the second suspect. One suspect was hospitalized for 27 1/2 hours and the second suspect for 28 1/2 hours, both for inhalation of a toxic substance. Investigation revealed that the suspects pried open two windows to gain entry. No violations of pesticide use laws or regulations by the fumigation company were uncovered.

70-MON-89

JUNE

1989

**Human Effects (SERIOUS ILLNESS)
Mevinphos**

A farm worker was performing harvesting duties as a broccoli cutter. During the cutting process he consumed raw broccoli in the field. After eating his lunch around 1300 hours, he developed symptoms that included headaches, slurred speech, chest pains, abdominal cramps, nausea and vomiting. His employer took him to the hospital where he was examined and hospitalized for 2 days and was off work for 9 days. No one else on the harvesting crew became ill though others also ate broccoli. The Agricultural Commissioner discovered that the last application of mevinphos was made 15 days before harvest. All pesticides were applied at label rates and no pre-harvest intervals were violated. The field workers wear rubber gloves, rubber boots and rubber pants while harvesting. Blood cholinesterase tests were conducted and all were within laboratory normal range. The physician diagnosed bradycardia. No violations were uncovered.

71-TUL-89

AUGUST 1989

Human Effects (SERIOUS ILLNESS)

Mevinphos

A worker was applying mevinphos to a vineyard became ill. During the five day period he was performing his job he had not been provided with the proper safety equipment, (i.e., rubber gloves, waterproof protective clothing, goggles or face shield and a respirator). On the fifth day, he began experiencing nausea and a headache. Four hours later, he experienced breathing difficulty and vomiting. He tried to inform his employer but could not find him. He was taken to the hospital by his brother where he was hospitalized for four days and was off work for 30 days. His plasma cholinesterase was 30% depressed and his RBC cholinesterase was 27% depressed relative to midpoint of laboratory normal range. There was no baseline established. The final physician's diagnosis was "organophosphate poisoning." The Agricultural Commissioner found numerous violations of the California Code of Regulations (CCR) and the Food and Agricultural Code. This included CCR section 6724,- no employee training; CCR sections 6726 & 6728,- no emergency medical care posting or medical supervision; CCR sections 6736 & 6738,- no work clothing or safety equipment provided and Food and Agricultural Code section 11791,- no use of a closed system. A fine for \$231 was paid.

72-SAC-89

JULY 1989

Human Effects (GROUP ILLNESS)

Malathion

A one-quart bottle of Malathion 50 Insect Spray was dropped on the floor while doing inventory. Five store employees came in contact with the pesticide during the cleanup. They were taken to the hospital experiencing the following symptoms: headaches, dizziness, nausea, and coughing. All were treated and released. Vapors from the spill were pulled up into the ventilation system and distributed throughout the building. The Fire Department evacuated customers from the store and assisted in the cleanup and venting of the building. No violations of label requirements or California pesticide laws and regulations were uncovered regarding this episode.

73-KER-89

AUGUST 1989

Human Effects (SERIOUS ILLNESS)

Chlorpyrifos & Carbaryl

A loader, for an aerial spray company, experienced symptoms of blurred vision, headache, excessive salivation, shortness of breath, nausea and weakness while working with chlorpyrifos and carbaryl. Because he recognized the possibility of poisoning, paramedics were called and he was transported to the hospital. He was hospitalized for five days. He lost a total of eight work days. The work history furnished indicated he had worked 206 hours with organophosphates and carbamates. Blood drawn for cholinesterase testing showed his plasma was depressed by 33% and RBC cholinesterase was 61.3% depressed relative to his baseline. He was provided with and was wearing all required safety equipment but felt the wettable powder dust may have come in contact with the exposed skin on his face and neck. Noting that dust is generally a problem while emptying the bags into the mix tank and when the helicopter land or takes off. No violations were found during this investigation.

74-KIN-89

JULY

1989

Human Effects (Serious Illness)

Chlorpyrifos, Propargite, Profenofos, Cypermethrin & Oxydemeton-Methyl

A water truck driver experienced symptoms of nausea, headaches, abdominal pains, vomiting and diarrhea after handling various pesticide containers. Investigation revealed that some of his duties also included assisting the loaders by opening the pesticide containers. He did not mix or load any of the materials, but only removed the tops of the containers. The protective items he wore included cloth coveralls, rubber gloves, rubber boots, goggles and a respirator. He states he did not spill any of the material onto himself but began feeling ill while driving home. At home, he took a shower and laid down feeling quite ill. Paramedics were summoned and he was transported to the hospital. He was hospitalized for three days and was treated for possible pesticide poisoning and severe gastroenteritis. He was off work for 14 days. Blood cholinesterase tests done were within laboratory normal range. A violation was issued for training records, which though available, were not pesticide specific.

75-MON-89

AUGUST

1989

Human Effects (GROUP ILLNESS)

Permethrin & Diazinon

An aerial application to a celery field resulted in five non-agricultural employees developing symptoms of headache, nausea, and weakness. The five men were working in a trailer storage area separated from the celery field by a road, railroad tracks and an area of unused ground. Three men were making repairs underneath truck trailers and two were welding. The helicopter pilot did not notice the men working when he first surveyed the area for field workers. Soon after the application began, an odor was detected and the above symptoms experienced. No mist was detected by the men. The five were advised to seek medical attention and to change their clothing. The pilot submitted a written statement describing the event of that morning and stating he did not see any people until after he finished the application. County Agricultural Inspectors took swab samples of the area where the men were working. Laboratory analysis found no permethrin and only 0.96 micrograms of diazinon per square foot. There was not enough evidence to support a violation of pesticide use laws and regulations.

76-ALA-89

JUNE

1989

Human Effects (SERIOUS ILLNESS)

Diazinon

A 16-month old child was left unattended in the backyard of a grandparent's home. When the grandmother returned the child was acting "strange." She could detect a chemical odor. She then found an opened bottle of diazinon that had been taken from an unlocked cabinet used to store garden sprays. She called the child's mother and 911. The child was taken to the hospital emergency room and treated for organophosphate poisoning. The child was hospitalized for 48 hours. The Agricultural Commissioner discovered that the bottle of diazinon was disposed of by hospital personnel and that the exposure was accidental. The importance of keeping pesticides out of the reach of children was emphasized in a discussion with the child's mother.

77-LA-89

AUGUST 1989

Human Effects (GROUP ILLNESS)

Propetamphos

An application of propetamphos was made to the carpet (2944 square feet), for flea control. The following day, numerous people complained of a "strong odor" that gradually increased as afternoon temperatures outside rose. Office workers left work early experiencing symptoms of upset stomach, shortness of breath, dizziness, headache, muscle weakness, disorientation and memory loss. Nineteen employees sought medical attention. Seventeen employees experienced the symptoms mentioned and two had no symptoms. Thirteen employees lost one day of work, three lost two days, two lost three days and one with pre-existing health problems (heart murmur) lost eight work days. County Agricultural Inspectors took sample wipes of 51 work stations in the treated work area. Laboratory analysis showed a trace of propetamphos. The application was made according to label directions. No violations were found.

78-MON-89

AUGUST 1989

Human Effects (GROUP ILLNESS)

Maneb

An aerial application of maneb was made to a lettuce field. A 27 member harvesting crew was harvesting cauliflower in the adjacent field. The workers observed a helicopter making the application. Some workers complained of a pesticidal odor. Six workers experienced symptoms of burning eyes, headache, nausea and numbness of the mouth and were taken to the hospital after reporting their symptoms. At the hospital, blood samples were collected for cholinesterase testing. The results were all within laboratory normal range. Not one worker required any additional time off work. A ground spotter for the aerial spray company was used. He states the application did not take place until the harvesting crew was a quarter mile upwind from the lettuce field. The spotter stood between the field being sprayed and the cauliflower field. The wind was blowing away at 5-7 m.p.h. from the cauliflower field. The Agricultural Commissioner collected samples of cauliflower and foliage from where the crew had been working. Laboratory analysis detected no pesticide residues. No worker felt or saw the spray. No violations were discovered.

79-FRE-89

AUGUST 1989

Human Effects (SERIOUS ILLNESS)

Phosmet

A woman, fell ill after having bathed her three dogs with flea shampoo.. Her symptoms included chest pains, diarrhea, blurred vision, abdominal cramps. She was hospitalized for two days. She stated that she normally follows label directions but that this time she didn't have any safety equipment handy (i.e. elbow length rubber gloves, waterproof apron) so she did not use any. County Agricultural Inspectors discovered she used the product in a poorly ventilated area, also against label instructions. A violation was issued to her. This investigation prompted the Pesticide Enforcement Branch to conduct inspections at a number of retail locations. Several quarantines were issued to various retail outlets for misbranding

because the labeling did not conform to the registered labeling on file in Sacramento. The Registrant was held responsible for violations of labeling requirements.

80-SD-89

JUNE

1989

Human Effects (DEATH)

Malathion

A man committed suicide by ingesting a mixture of drugs, alcohol and malathion. He was found by his wife who called 911. Upon arrival, paramedics attempted to revive the victim. By then, the victim was in cardiac arrest. He was transported to the hospital where he expired. The room where the victim was found had a strong pesticidal odor. A sample was taken from a drinking glass found next to the victim. Laboratory analysis detected malathion. A container of malathion was found in the garage and believed to be the pesticide ingested. The coroner reported the cause of death as malathion poisoning. The poisoning was self induced. No further action was taken.

81-MER-89

AUGUST

1989

Human effects (SERIOUS ILLNESS)

Mevinphos, Sulfur, Diazinon, Oxamyl & Methomyl

An airplane mechanic became ill and experienced symptoms of nausea, blurred vision, abdominal pains, diarrhea, slurred speech and shakiness. He was hospitalized for four days and lost 15 days of work. Blood cholinesterase tests revealed that his plasma was depressed 10% and RBC 16% depressed relative to his baseline. The Agricultural Commissioner discovered that the mechanic had been working on an airplane that had been used to apply sulfur for the three previous weeks. He also worked as a mixer/loader. The day he fell ill, he was loading mevinphos, oxamyl, diazinon and methomyl. He stated he was wearing all protective equipment and was using a closed system. The mechanic, although provided with protective equipment and trained in its use, was not wearing goggles or gloves while working on an airplane. A violation was issued for not wearing all protective equipment while working with contaminated application equipment.

82-FRE-89

AUGUST

1989

Human Effects (SERIOUS ILLNESS)

Mevinphos & Diazinon

A worker was hospitalized three days and lost 14 days of work. He developed symptoms of vomiting, slurred speech and fainting spells. Blood cholinesterase tests performed showed his plasma was 54% depressed and RBC was 50% depressed relative to his baseline. The Agricultural Commissioner discovered that the worker had been loading mevinphos, methomyl and diazinon. Though the employee had been wearing all the safety equipment issued (i.e., rubber boots, rubber gloves, respirator and coveralls), a closed-system was not used when handling category I material as required by regulation. A violation for failure to use a closed mixing system was issued to the pest control company.

83-VEN-89

SEPTEMBER

1989

Human Effects (SERIOUS ILLNESS)

Mevinphos & Dimethoate

Two workers were hospitalized for two days and lost a total of 14 workdays. Both men had ingested small amounts of pesticide. Their symptoms included headaches, dizziness, nausea, drooling, weakness, breathing problems and excessive sweating. The Agricultural Commissioner discovered that the men were ordered to make the pesticide application at a flower nursery. While loading, one noticed that the spray rig pump was out of fuel. One employee went back to the shed and found a one-gallon plastic container marked "GAS" in handwritten ink. He then poured the contents into the spray rig pump. When the pump did not start they assumed the fuel line was clogged and decided to siphon out the fuel using a rubber tube. While siphoning one worker experienced an extreme burning sensation in his mouth. The second employee was warned not to try siphoning but did anyway and experienced the same burning sensation. A few minutes later, they both experienced headaches, nausea, and dizziness. They reported their symptoms to the owner who told them to return to their quarters, bathe and rest. The daughter of one of the men reported to the owner that her father was sweating, drooling and was very weak. At this time, the owner took them to a drug rehabilitation center. The center refused to admit the men and gave them directions to the local hospital. The physician on duty admitted the men. Samples collected of material siphoned from the spray rig gas tank and from the one gallon plastic container tested positive for dimethoate and mevinphos. Violations of the California Code of Regulations and the California Food and Agricultural Code include the following: (1) failure to train pesticide handling employees or keep training records; (2) failure to provide work clothing or protective equipment to employees; (3) use in conflict with label, [it was discovered the owner had placed mevinphos in an unlabeled container when he treated the area around his home]; (4) use of restricted materials without permit; (5) failure to make prior medical arrangements or post medical information; (6) improper pesticide container and (7) failure to take sick employee to a doctor. A \$2000 fine was paid by the nursery.

84-VEN-89

SEPTEMBER

1989

Human Effects (SERIOUS ILLNESS)

Methyl Bromide/Chloropicrin

Two workers were performing a field fumigation to strawberry beds when the tractor mounted sight gauge burst. The tractor driver was sprayed directly in the face. The other man working as the "tarp man" felt the fumigant on his cheek. Both workers were decontaminated at site and rushed to the hospital. The grower, who was fifty yards from the tractor when the gauge failed, was able to shut off the fumigant, assist in the decontamination procedures and summon the Fire Department. The tarp man was admitted for 24 hours of observation. The tractor driver was admitted for five days suffering from breathing difficulty and first degree burns to both eyelids. The Agricultural Commissioner issued a violation to the grower for failure to have complete training records on the employees.

85-LA-89

SEPTEMBER

1989

Human Effects (DEATH)

Methyl Bromide/Chloropicrin

A man, seeking shelter from the cold, crawled under the tarp of a fumigated home. A neighbor called the Police after noticing movement under the tarp. Paramedics pulled the victim from under the tarp. He died in route to the hospital. The coroner's report stated cause

of death as methyl bromide inhalation. Late notification of death did not allow the Agricultural Commissioner to inspect the fumigation site. However, interviews with personnel who responded to the call state that warning signs were posted. Seals and clips were intact and there was no indication of a forced entry. The Pest Control Company was issued a violation for not notifying the Agricultural Commissioner of death accompanying a fumigation. A \$300 fine was paid.

86-GLE-89

SEPTEMBER

1989

Environmental (FISH KILL)

Endosulfan

Fish and Game biologists investigated a fish kill in a 15 acre pond. Dead were 2,000 carp, 300 bass and 100 bluegill. The investigation noted two applications of endosulfan had taken place in the area. Water samples taken detected low levels (0.1 and 0.2 ppb) of endosulfan. Dissolved oxygen tests were performed which showed oxygen levels low for carp, bass and bluegill. The pond contained large areas of aquatic weed growth, a great deal of decaying weeds and suspended silt due to heavy rains and run-off. Large carp were seen going to the surface to suck air. The Fish and Game biologists concluded the fish kill was due to a combination of factors including oxygen depletion, water silting and pesticide run-off. The Agricultural Commissioner concurred that water silting and oxygen depletion were the most likely factors. No violations of pesticide use laws were uncovered.

87-YOL-89

SEPTEMBER

1989

Human Effects (GROUP ILLNESS)

Formaldehyde

Eight employees of a distributing warehouse were exposed to vapors of formaldehyde from a hose that had come loose. The formaldehyde was being used to fumigate mattresses. None of the employees who were exposed were involved in the application of the material but were exposed incidental to their regular warehouse duties. The eight experienced symptoms of headaches, nausea, dry throat, irritated eyes and dizziness. All went to the hospital for observation. The Agricultural Commissioner uncovered two violations; (1) there was no emergency medical posting at the fumigation site and (2) employees were not taken to the hospital by their employer but were sent. No enforcement action was taken based on the fact that the fumigation facility was subsequently closed and treatments are being carried out by a commercial bedding company.

88-KIN-89

SEPTEMBER

1989

Human Effects (DEATH)

Paraquat

Sheriff deputies responded to a call from a woman claiming her husband, while under the influence of drugs, had ingested paraquat. He was taken to the hospital. He was found to be delirious from PCP. He went into respiratory arrest and finally cardiac arrest. The coroner identified the cause of death to be "multisystem failure due to ingestion of paraquat while intoxicated, drug intoxication and chronic alcohol hepatitis." The Police along with the Agricultural Commissioner discovered that the decedent, after consuming alcohol and PCP, drank from an unmarked gallon jug containing paraquat. The paraquat was stored in the

garage next to the deceased's home. After extensive record review and storage inspections, ownership of the paraquat could not be determined. Contents from the jug were analyzed and confirmed to be paraquat. No violations were found.

89-YOL-89

OCTOBER 1989

Human Effects (SERIOUS ILLNESS)

Methyl Bromide/Chloropicrin

Four, 175 pound methyl bromide cylinders fell off the loading dock and one began to leak. The forklift operator notified the office manager who immediately dialed 911. The Police and Fire Departments evacuated the 16 block industrial area. The County Environmental Health Department was notified. The leak was contained and the restriction lifted. It was determined that 65 pounds of the material were lost from the spill. One member of the entry team was taken to the hospital for evaluation. He was later released. No violations were uncovered.

90-MER-89

AUGUST 1989

Human Effects (SERIOUS ILLNESS)

Unrelated To Pesticides

An applicator had applied several pesticides (azinphos-methyl, propargite, and glyphosate) over a 12 day period. He wore the necessary safety equipment (impervious pants, boots, a coat with a hood, rubber gloves, approved mask and goggles) and he states there were no spills or known exposure. The mixing and loading were done by other employees. A month later, he began experiencing sore throat, headaches, myalgias, night sweats and a fever. He was admitted to the hospital. Blood cholinesterase was within laboratory normal ranges. An elevated white blood cell count was noted indicating some type of infection. Hepatitis was suspected and later confirmed. He was hospitalized four days and treated. All training records and spray records were in order. This illness appears to be unrelated to pesticides and thus this investigation was discontinued.

91-SCL-89

JULY 1989

Human Effects (GROUP ILLNESS)

Malathion

A hospital employee sprayed the sidewalk entrance of a pediatric building to control worms. As hospital employees arrived, a few became ill. Five employees experienced symptoms of headache, dizziness, nausea and nasal irritation. Only one received treatment. The other four were examined and released. No one was hospitalized. Two employees each lost two days of work. To prevent further exposure, the entrance to the pediatric unit was locked and barricaded until later that day. The Agricultural Commissioner discovered that the hospital employee had not received training. He admitted applying the product above the allowed label rate. Two violations of the California Code of Regulations section 6702, (employer--employee responsibilities) and section 6724, (employee training) were issued. The hospital paid a \$800 fine.

92-NEV-89

OCTOBER 1989

Environment Effects (EVACUATION)

Butyric Anhydride

Thirty people were evacuated from an electronics firm after an eight-ounce bottle of bee repellent was set off in the air conditioning system. The material created a noxious odor and the building was evacuated for the remainder of the shift. A maintenance crew came in, cleaned up the system and the building was opened for the next shift. A few people complained of headaches, but none sought medical attention. The Agricultural Commissioner was unable to identify the person responsible for this illegal application. No further enforcement action was taken.

93-SD-89

APRIL

1989

Human Effects (SERIOUS ILLNESS)

Chlorine

A maintenance man was exposed to chlorine vapors while servicing a jacuzzi. He had opened up one of the chlorine tablet canisters from which chlorine is introduced. While looking into the canister to check it for replacement needs, the contents exploded. This caused respiratory problems and burning eyes. He was taken to the hospital where he suffered a heart attack. He was diagnosed as suffering from acute chlorine inhalation. Four days later, he was released. At the conclusion of this investigation, he had not yet returned to full time work. The Agricultural Commissioner discovered that no protective equipment was used other than normal eye glasses and since this was not a use situation none was required. No violations were uncovered.

94-COL-89

OCTOBER

1989

Environmental Effects (BIRD KILL)

Carbofuran

After receiving calls regarding a large number of dead ducks, County Agricultural Inspectors went out to the problem areas. Fifteen hundred dead ducks (97% pintail, 3% green winged teal) were recovered by U.S. Fish and Wildlife Service from three hunting clubs. The ducks were found in flooded unfarmed land used only for the duck hunting clubs. Chemical analysis of the gizzard contents by CDFG detected carbofuran. DPR analysis of mud, water and plant material samples detected no carbofuran. However, some of the mud samples analyzed by the pesticide manufacturer were positive for carbofuran. DPR and Agricultural Inspectors investigated air strips within a five mile area. No evidence was found to implicate any particular application during the rice growing season. No application of carbofuran had been made to the area for several years. Investigators from DPR, U.S. Fish and Wildlife Service and the pesticide manufacturer were unable to determine who was responsible for the carbofuran contamination. As a result of this incident, considerably more stringent use restrictions have been put into the California Code of Regulations to mitigate the hazards to waterfowl. Notice of intent to apply this material is required from pest control operators before application.

95-TUL-89

OCTOBER

1989

Human Effects (SERIOUS ILLNESS)

Copper Hydroxide

A motorist, traveling beside a citrus grove, was sprayed by a ground rig sprayer coming out of the orchard. The motorist was doused with pesticide through the driver's open window. The driver returned home to wash his clothing and took a shower, but began having breathing difficulties. His wife took him to his cardiologist due to a history of heart ailments and asthma. He was admitted to the hospital for three days. The Agricultural Commissioner collected swab samples from the vehicle in question and sent them to the CDFA lab for analysis. The car gave the appearance of having been sprayed. Laboratory analysis confirmed the presence of copper hydroxide. Investigation of the pest control company resulted in issuance of a violation for operating and applying pesticides in an unsafe or hazardous manner and failure to take measures to prevent drift. No further action was taken.

96-CC-89

APRIL 1989

**Environmental Effects(CROP LOSS)
2,4-D**

In October of 1989, eight grape growers in Contra Costa County reported a crop loss of \$310,803 due to herbicide damage in late March or early April. The reported loss was 414 acres, which represented about 45% of the total harvest. Zinfandel and Carignan were the principal varieties affected. The damage was first noticed in April and the Contra Costa County Department of Agriculture began the investigation. Two plant pathologists verified the damage was due to 2,4-D. Mapping of the damage and prevailing wind patterns for the appropriate time indicated the applications were probably made in either Sacramento County or Solano County. Contra Costa County contacted both counties. An investigation was launched to find the source of the 2,4-D contamination. Sacramento County reported two aerial applications during the applicable time frame. Both applications had all proper notices and reports on file. Solano County reported five applications during late March and all were in compliance. Since no source could be positively identified, Contra Costa County was unable to take enforcement action.

97-TUL-89

NOVEMBER 1989

**Human Effects (SERIOUS ILLNESS)
Unrelated To Pesticides**

A school bus was traveling in an agricultural area when the driver and the two student passengers drove through a cloud of dust and smoke. Shortly after the bus left the area, the bus driver experienced symptoms: nausea, watery eyes, headache, blurred vision and breathing difficulty. One student complained of having a headache. The three were transported by ambulance to the hospital and examined. Both students were examined and released. The school bus driver was hospitalized for three days. The County Agricultural Commissioner showed that the driver drove by a grape vineyard when some materials that included Styrofoam, chipboard and cardboard were being burned. No pesticide applications occurred along the bus driver's route. The doctor states that the products of combustion could have caused the symptoms the bus driver experienced. No violations of pesticide laws or regulations discovered.

98-LA-89

AUGUST 1989

Human Effects (GROUP ILLNESS)

Propetamphos

A structural PCO applied propetamphos to the 25,000 sq. foot carpeted work area at 1:00 a.m. Eight hours later, complaints of a strong odor were reported. Throughout the work day, a total of 78 employees left work early. Eleven sought medical attention. No one was hospitalized and six people each required two additional work days off. Symptoms included headaches, nausea, chest pain and sore throat. By the next day the odor had subsided. The carpet was cleaned and shampooed the following week. The County Agricultural Commissioner discovered that the application was made according to the label directions. No violations or pesticide misuse were found. No further enforcement action was taken.

99-MON-89

OCTOBER

1989

Human Effects (SERIOUS ILLNESS)

Methomyl, Mevinphos, Cypermethrin & Ethephon

A mixer/loader had been working with methomyl, mevinphos and cypermethrin. Later that day, he loaded ethephon, a growth regulator. During the ethephon application, the helicopter had mechanical difficulties and flew back to the airstrip for repairs. During the forty-five minutes the helicopter was gone, the mixer/loader became ill. Symptoms included vomiting, nausea, headache and weakness. When the pilot returned, he observed that the mixer/loader's pupils were "pinpoint." He radioed in. A manager took the worker to the hospital. Blood was drawn for cholinesterase testing. His plasma cholinesterase was 55% depressed and his RBC cholinesterase was 42% depressed relative to his baseline. He was hospitalized for 24 hours, losing six days of work. The Agricultural Commissioner found that all safety gear (respirator, rubber boots and gloves, disposable coveralls and a hard hat with a face shield) was worn for all applications including the ethephon. A closed system was properly used. His training records were in order. No violations of pesticide use laws were uncovered.

100-MON-89

SEPTEMBER

1989

Human Effects (SERIOUS ILLNESS)

Mevinphos

A mixer/loader had been working with mevinphos one week before his illness. He had no cholinesterase baseline established. He developed symptoms of nausea and vomiting. He notified his supervisor and was taken to the company doctor who took a blood sample for cholinesterase testing. He was diagnosed with the flu and sent home. The next morning, he was still vomiting and feeling nauseated. He was taken to the hospital by his mother. He was hospitalized for three days and was off work for 15 days. Blood tests showed plasma cholinesterase was 90% depressed and RBC cholinesterase 74% depressed relative to midpoint of laboratory normal range. The Agricultural Commissioner interviewing the mixer/loader noted that the mixer/loader began to feel queasy so he decided to eat some lunch hoping it would settle his stomach. He also neglected to wash his hands before eating. Further investigation revealed that he was issued and wore the proper safety equipment (respirator, rubber gloves and boots, disposable coveralls and water proof suits) and used a closed system when handling category 1 materials. A violation for not having an established cholinesterase baseline for the applicator before him handling a category 1 pesticide was issued. The company paid a \$200 fine.

101-SD-89

AUGUST 1989

Human Effects (SERIOUS ILLNESS)

Boric acid

A hotel desk clerk became ill after accidentally breaking a bottle of ammonia that was mixed with boric acid. The employee developed breathing difficulty, nausea and dizziness from the resulting vapors. The employee went to the hospital and was examined. Hospitalization was recommended, but refused opting instead to return to work. The following day his condition got worse and he lost consciousness. Paramedics were called. The victim was treated for respiratory failure with secondary pneumonia. Hospitalization was for seven days and days of disability are not known. The County Agricultural Commissioner revealed the boric acid involved was bought by the owner in bulk. It was also not labeled for use as a pesticide. No directions for use were on the label. A violation was issued to the hotel owners for using unregistered boric acid as a pesticide.

102-ALA-89

OCTOBER 1989

Human Effects (GROUP ILLNESS)

Insufficient To Determine

The earthquake in Northern California on October 17, 1989, knocked several cleaning products off shelves and they spilled open. Five employees of the sanitary company sought medical aid. The five experienced symptoms of eye irritation, rash and flu-like symptoms that evening. None of the employees stayed overnight at the hospital. Since the exposure was neither use related nor was the pesticide in possession of the user at the time of the incident, this investigation was referred to the Department of Industrial Relations. No violations were apparent from this incident.

103-SCR-89

DECEMBER 1989

Human Effect (GROUP ILLNESS)

Methyl Bromide/Chloropicrin

A fumigation of methyl bromide and chloropicrin was made to a four acre field. That afternoon, the County Department of Environmental Health informed the County Agricultural Commissioner's office that residents of a nearby trailer court were complaining of eye and respiratory irritation. At the site, the Agricultural Commissioner found several of the grower's employees shoveling loose soil on the tarp in an attempt to stop the fumigant from leaking. There were also small holes in the tarp, probably caused by dogs running over it. No one was evacuated from the trailer court. Six of the residents went to the hospital complaining of eye and throat irritation, nausea and vomiting. The six received treatment and were released. On the basis of the fumigant label and all other information obtained during the investigation, no violations of pesticide use laws or regulations were discovered.

104-LA-89

DECEMBER 1989

Human Effect (DEATH)

Liquid Nitrogen

A Structural Pest Control Operator lost consciousness during a liquid nitrogen application. The applicator was in the closet injecting the material into the wall for termite control. He

was in a confined space without a fan to exhaust the nitrogen gas nor an oxygen monitor in the vicinity as required by law. The resident heard a thump in the closet and found the applicator unresponsive on the floor of the closet. She felt for a pulse and could not find one. A call to 911 was then made. Paramedics transported the applicator to the hospital where he expired several minutes later. The County Coroner's autopsy report listed cause of death as "asphyxiation due to inhalation of nitrogen gas." Department of Pesticide Regulation investigated the incident and published its findings (O'Malley and Gibbons, 1991). The Agricultural Commissioner revealed the following violations by the pest control company: (1) material was used in conflict with the label; (2) employee training records were not complete; (3) employer did not ensure that the employee was wearing label required safety equipment; (4) respiratory equipment did not have any required inspection record; (5) employer did not have a copy of a medical statement from the employee concerning wearing a respirator on file. This incident and noted violations have been referred to the District Attorney and criminal charges have been filed against the pest control company. The District Attorney and the City Attorney after evaluating all available information surmised that there was not sufficient evidence to warrant actions against the pest control company.

105-SJ-89

DECEMBER

1989

Human Effect (GROUP ILLNESS)

Malathion

A man poured malathion on himself and drank a large quantity of the remaining portion. The victim was transported to the hospital in critical condition. The victim survived the attempted suicide. Days of hospitalization and disability are not known. The County Agricultural Commissioner found that the victim was going through divorce and was depressed. A one quart bottle of malathion was found at the scene. Laboratory analysis of the bottle showed the bottle contained 47% malathion. No pesticide use violations were uncovered during the investigation except for the act by the victim himself.

106-LA-89

DECEMBER

1989

Human Effect (DEATH)

Sulfuryl Fluoride/Chloropicrin

A male was seen crawling out from under a tarpaulin. The house had been undergoing fumigation with sulfuryl fluoride/chloropicrin. Neighbors called 911. Police and Paramedics were called. They found the victim delirious, semi-coherent and vomiting. He was rushed to the intensive care unit and later began experiencing breathing difficulties. He expired 26 hours later. The County Coroner listed death as "sulfuryl fluoride exposure." Paramedics confirmed the building was properly posted with warning signs. The Agricultural Commissioner found no violations of pesticide use laws or regulations.

DISCUSSION/CONCLUSION

Priority investigations were conducted of 105 episodes in 1989. Two episodes qualified because of heavy crop losses, four because of killing of non-target animals and three because air pollution required evacuations involving more than 25 people. No people were found to have been injured in any of these nine episodes. Twelve episodes occurred in 1988, but were recognized as meeting priority criteria in 1989. There were 12 episodes, involving one person each, which resulted in death. Some of the most interesting investigations involved episodes

in which pesticides were not implicated. Priority investigation, 41-GEL-89 concerned skin rashes among a sugarbeet weeding crew. Some of the rashes were so severe as to require hospitalization. No pesticides had been applied for six months before the episode, and none could be detected in the field samples taken. The cause of the rash ultimately was determined to be the weeds the workers were removing from the field. Priority investigation 52-MON-89 involved another weeding crew who noticed a foul odor while a helicopter was making a pesticidal application to a field 1/2 mile away. The workers erroneously concluded that they had been drifted upon, but the source of the odor was later identified as a compost pile the crew had approached.

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Table 1

NUMBER OF EPISODES AND ILLNESS CASES ACCORDING TO PESTICIDES

ACTIVE INGREDIENT	AGRICULTURAL		NON-AGRICULTURAL	
	Incidents	Cases	Incidents	Cases
<u>Organophosphate Insecticides</u>				
Chlorpyrifos	2	42	-	-
Ethoprop	1	10	-	-
Diazinon	-	-	3	11
Malathion	-	-	6	30
Methamidophos	1	2	-	-
Parathion	1	1	1	1
Phosmet	-	-	1	1
Propetamphos	-	-	2	30
Mevinphos	3	4	-	-
Multiple Organophosphate	8	12	1	1
<u>Fungicides</u>				
Calcium Polysulfide	-	-	1	2
Copper Sulfate	1	1	-	-
Formaldehyde	-	-	1	8
Maneb	1	6	-	-
Sulfur	1	27	-	-
Ziram	1	1	-	-
<u>Herbicides</u>				
2,4-D	1	6	-	-
Diquat	-	-	1	1
Linuron	1	1	-	-
Paraquat	1	1	1	1
<u>Fumigants</u>				
Aluminum Phosphide	1	1	-	-
Chloropicrin	-	-	1	13
Ethylene Oxide	-	-	1	8
Methyl Bromide/Chloropicrin	2	8	9	12
Sulfuryl Fluoride/Chloropicrin	-	-	2	2
Liquid Nitrogen	-	-	1	1
<u>Antimicrobials</u>				
Chlorine	-	-	8	20
Sodium Hypochlorite	-	-	5	15
<u>Other Insecticides</u>				
Ammonium Fluosilicate	-	-	1	1
Boric Acid	-	-	1	1
Lindane	-	-	1	5
Multiple Insecticides	3	15	1	5
<u>Unrelated to Pesticides</u>	6	48	6	22
<u>Unavailable/Insufficient</u>	1	1	5	14
<u>Total</u>	<u>37</u>	<u>177</u>	<u>60</u>	<u>237</u>

This does not include eight episodes that fall under Environmental and Loss of Property criteria.

Table 2

CIRCUMSTANCES OF PESTICIDE EXPOSURE RESULTING IN HUMAN ILLNESS

AGRICULTURAL			NON-AGRICULTURAL		
Activity	No. of Incidents	No. of Cases	Activity	No. of Incidents	No. of Cases
Applicator	6	7	Applicators	13 ^b	13 ^b
Mix/loader	8	9	Mix/loader	5	8
Drift			Drift		
People not involved with Agriculture	7	40	Non-Agricultural applications	13	67
Field Workers	6	89			
Fumigants			Fumigants		
Sealed Containers	1 ^a	1 ^a	Applications to Buildings	4	42
			Applications to Homes	4	7
Clean/Fix	1	1	entry during fumigation	5 ^c	5 ^c
			Emergency Response	2	6
			Spills/Leaks	2	11
			Suicides/Attempted Suicides	1	3
				4	4

This table represents only those cases which were determined to be pesticide related.

NOTE: a and c resulted in fatalities, b resulted in one fatality

Table 3

HOSPITALIZATION AND DISABILITY RELATED TO PESTICIDE EXPOSURE

<u>AGRICULTURAL</u>				<u>NON-AGRICULTURAL</u>			
No. of Incidents	No. of Cases	Hospital Days	Disability Days	No. of Incidents	No. of Cases	Hospital Days	Disability Days
29	144	67	472	48	165	69	144

This does not includes cases which were unrelated, unavailable or insufficient information to verify.