NEW Fumigant Labels

SOIL FUMIGANTS

8-9 pages

• Vapam® HL: (a.i. 42% metam sodium)

• Inline®: emulsifiable Telone C-35 (a.i. 65% 1,3-dichloropropene (1,3-D)+35% chloropicrin).

40-50 page booklets

Coming December 2010

http://www.epa.gov/oppsrrd1/reregistration/soil_fumigants##buffer
<table>
<thead>
<tr>
<th>Risk Mitigation Measure</th>
<th>Currently</th>
<th>2010</th>
<th>2011</th>
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<tbody>
<tr>
<td>Restricted Use</td>
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<td>New Good Agricultural Practices</td>
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<td>Rate reductions</td>
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<td>Use site limitations</td>
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<td>New handler protections</td>
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<td>Tarp cutting and removal restrictions</td>
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<td>Extended worker reentry restrictions</td>
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<td>Training information for workers</td>
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<td>Fumigant Management Plans</td>
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<td>First responder and community outreach</td>
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<td>Applicator training</td>
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<td>Compliance assistance and assurance measures</td>
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<td>Restrictions on applications near sensitive areas</td>
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<td>Buffer zones around all occupied sites</td>
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<td>Buffer credits for best practices</td>
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<td>Buffer posting</td>
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<td>Buffer overlap prohibitions</td>
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<tr>
<td>Emergency preparedness measures</td>
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○ = under development
● = adopt completely

Buffer Zones Will Become a New Requirement in 2011

Buffer Zones are areas surrounding the application block, extending outward in all directions from the treated field, a specified distance, where workers or bystanders must be excluded during the buffer zone period, except for people in transit.
Mandatory Training Certifications

Valid Certified Pesticide Applicator and if Commercial Applicator, Soil Fumigation License

Current Product Stewardship Training Certification obtained from Registrant or State Approved Training program @ 3 years

2 handlers with additional Worker Protection Training, respirator fit testing and medical Certifications.

Certified Applicators delivering Registrant Training Info to Handlers regarding Fumigant safety, worker risks and reporting
A nice, firm, moist, compact bed to minimize emissions, improve efficacy, utilize buffer zone reducing credit.

Mandatory Good Agricultural Practices:

EPA has determined that Certified Applicators must record and report soil conditions present at the time of application. EPA has also set minimum standards of temperature and moisture which must be present before fumigation can proceed.
Good Agricultural Practices
Mandatory Components

Weather Conditions
- Prior to fumigation the weather forecast for the day of application and the 48-hr period following must be checked to ensure favorable fumigating conditions will exist.
- Fumigants may not be applied if ground-level winds are 2 mph at the start of application or are not forecasted to reach 5 mph during the application.

Soil Moisture
The soil shall contain at the time of application enough moisture at 9 inches below the surface or it must be adjusted. Soil moisture must either be measured at ≥ 70% with an instrument (e.g., tensiometer), or meet the specific criteria defined in the USDA Feel and Appearance method for estimating soil moisture as appropriate for the soil texture.

Soil Temperature
- The maximum soil temperature at the depth of injection shall not exceed 90°F degrees F at the beginning of the application.
- If air temperatures have been above 100 degrees F for more than three hours in any of the three days prior to application, then soil temperature shall be measured and recorded in the FMP.

Soil Preparation
- The area to fumigated shall be tilled to a depth of 5 to 8 inches.
- Crop residue and field trash must be properly managed.
- Any trash pulled by the shanks to the ends of the field must be covered with tarp, or soil, depending on application method, before making the turn for the next pass.
With the New Labels: New Grower Responsibilities

Fumigant Management Plans

Site Specific Fumigant Management Plans

Fumigant users must prepare a written, site specific plan before each day’s fumigation begins

COMPONENTS & TIMETABLE of the 2010 FUMIGANT MANAGEMENT PLAN

Site Fumigant Management Plan  The Daily Checklist  Post Application Summary

Completed Prior to Daily Fumigation Activity  Completed Prior to Daily Fumigation Activity  Completed / Archived Within 30 days of a daily Fumigation Activity
Site Specific Fumigant Management Plan

Effective 2010

Composed of 18 Sections:
- Certified Applicator Info
- General Site Information
- General Application Information
- Tarps / Tarp Repair methods
- Soil Conditions
- Weather Conditions
- Buffer Zone Calculations
- PPE for Handlers
- Emergency Response Plan
- Posting Signs
- Site Specific Response & Management
- Notice to State Tribal Agencies
- Communication with Handlers
- Detailed Site Map
- Handler Info / Dates of Certification
- Air Monitoring Plan of Buffer Zones
- Handlers w/o Respiratory Protection
- Handlers with Respirator Protection
# Site-Specific Fumigant Management Plan

## Certified Applicator Information
- License(s)
- Product Stewardship Training

## General Site Information
- Field Address, Owner/Operator, etc.

## General Application Information
- Fumigant, rate, application method

## Tarps & Repair Plan
- Manufacturer, lot no., type, thickness
- Persons responsible for repair
- Timetable for checking, repairing
- Max. size of tear tolerable

## Soil Conditions
- Soil Texture and Moisture Level
### Site-Specific Fumigant Management Plan

**Weather Conditions**

- Summary of the weather forecast for the day of the application and the 48-hour period following the fumigant application including predicted wind speed, inversion conditions, and air-stagnation advisories (may attach a copy of printed forecast to PAM).

**Buffer Zones**

- Distance: How Calculated
- Credits used

**Personal Protective Equipment**

- For Handlers:
  - Handler Task
  - Clothing
  - Respirator Type, Filter Cartridge
  - Type and Change-out Schedule
  - Eye Protection
  - Gloves
  - Other

**Emergency Response Plan**

- Description of emergency credits:
  - Locations of telephones:
  - Contact information for first responders:
  - Local state federal contacts:
  - Other contact information:

- Emergency procedures responsibilities in case of an incident, equipment/tarp seal failure, complete loss of air concentration levels outside buffer zone suggesting potential problems, or other emergencies:

**Posting Treated Area/Buffers**

- A single day's fumigation activity

- Location of posting signs:

- Procedures for posting and sign removal:

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**Page 2**
### Site-Specific Response and Management

If Site Monitoring NOT elected

### Notice to State Lead Tribal Agency

Communication with Handlers

Describe Plan and All People Involved

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**A single day’s fumigation activity**
Required In 2011:
Fumigant Management Plan
Site Map

Detailing the:
Application Block
Buffer Zone perimeter
Property Lines
Roads, Rights of Way
Bus stops, walkways
Schools, Nursing homes
Clinics, Day Care
Nearby Application Blocks

Map extends 660 ft from property line to
Confirm proximities of
‘Hard to Evacuate Structures’
## Handler Information

<table>
<thead>
<tr>
<th>Handler Name, Address, and Phone Number</th>
<th>Employer Name, Address, and Phone Number</th>
<th>Tasks They are Trained and Authorized to Perform</th>
<th>Date of Medical Qualification to Wear a Respirator</th>
<th>Date of Fit Testing for Respirator</th>
<th>Date of PPE Training</th>
</tr>
</thead>
</table>

PRIOR to each day's fumigation activity

To be compliant:

- Names of Handlers
- Addresses
- Phone No’s
- Task Trained for
- Dates of:
  - Medical
  - Fit Testing
  - PPE Training

Prepared by J.W. Noling
# Fumigant Management Plan

## Air Monitoring Plan

### For Buffer Zone Monitoring: (check here if section is not applicable)

<table>
<thead>
<tr>
<th>Name of handler performing monitoring activities</th>
<th>Handler address</th>
<th>Handler phone number</th>
<th>Location of monitoring</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Areas between buffer zone perimeter and adjacent houses and businesses</td>
<td>1 hr before sunset, Once during night, 1 hr after sunrise, Once during day</td>
</tr>
</tbody>
</table>

### Fumigation Site Monitoring

From the beginning of the fumigant application until the buffer zone period expires, a certified applicator or someone under his/her supervision must:

- Monitor for air concentrations of chloropicrin in areas between the buffer zone perimeter and the areas (such as residences and businesses) that trigger this requirement.

- Monitoring the air concentration levels must begin the evening on the day of application and continue until the buffer zone period expires with a minimum of at least 8 samples during the buffer zone period, including these periods:
  - once, 1 hour before sunset,
  - once, during the night,
  - once, at 1 hour after sunrise, and
  - once, during the day.

4 times/day for **Duration of Buffer zone**

If at any time the person monitoring the air concentrations experiences sensory irritation, then the emergency response plan stated in the FMP must be immediately implemented. If other problems occur, such as a tarp coming loose, then the appropriate control plan must be activated. The location and results of the air monitoring must be recorded in the post-application summary report.
### The Daily Checklist

**Purpose:**
To verify that the site-specific FMP reflects current site conditions and product label directions **before beginning each days fumigation.**

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### General Site Information

- **Weather Conditions:** Before using a fumigation:
  - Check the weather.
  - Raincheck if conditions are not suitable.

- **Application:**
  - The applicator has been trained and instructed to ensure that positive pressure is maintained on the monitoring devices.
  - The applicator has also been trained in the use of the equipment provided.

### Hot Gas Applications

- **Paper bags:**
  - Paper bags with holes should be used.
  - Each injection point will be at least 6 inches from the nearest final spray orifice.

### Skunk Applications

- **Injection Points:**
  - Each injection point will be at least 12 inches from the nearest final spray orifice.
  - Each injection line shall be connected to a check valve located as close as possible to the final injection point, or the applicator will document the distance from the point of injection to the check valve.

### Buffer Zones

- **Buffer Zones:**
  - These zones are designated to prevent the spread of fumigant.
  - The applicator has been trained and instructed to ensure that positive pressure is maintained on the monitoring devices.
  - The applicator has also been trained in the use of the equipment provided.

### Protective Equipment for Handlers

- **Protective Equipment:**
  - The applicator has been trained and instructed to ensure that positive pressure is maintained on the monitoring devices.
  - The applicator has also been instructed in the use of the equipment provided.
Post Application Summary

Currently
Composed of 13 Sections:
- General Application Information
- Tarp Damage, Repair, Removal
- Soil Conditions
- Weather Conditions
- Complaints
- Emergency Response Measures
- Description of Incidents
- Elevated Air Concentrations
- Posting Signs
- Other
- When Respirator Protection Not in Use: was Sensory Irritation Experienced (Did you Cease operations or use Respirators)
- When Respiratory Protection is in Use: (Provide Direct Instrument Air Monitoring Results)
- Sign and Date

Completed / Archived
Within 30 days of a day’s Fumigation Activity

A single day’s fumigation activity
Focusing on ‘Deviations from FMP’

Prepared by: J.M. Notting
**Post Application Summary**

### General Application Information

- **Application date and time**
- **Application rate**
- **Size of application block**

### Weather Conditions

- **Summary of the weather on the day of the application**
- **Summary of the weather during the 48-hour period following the fumigant application**

### Soil Conditions

- **(check here if section is not applicable)**

### Tarp Damage and Repair

- **Location and type of tarp damage**
- **Description of tarp seal/tarp equipment failure**
- **Date and time of tarp repair**
- **Additional comments or other deviations from FMP (if applicable)**

### Tarp Removal

- **Date tarp was cut**
- **Date tarp was removed**

### Complaints

- **(check here if section is not applicable)**
- **On-site? Off-site?**
- **Describe Actions**

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A single day's fumigation activity

**Page 1**

Prepared by J.W. Noling
# Post Application Summary

<table>
<thead>
<tr>
<th>Description of Incidents</th>
<th>Elevated Air Concentration Levels</th>
<th>Posting Signs – Treated Area and Buffer Zone</th>
<th>Additional Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of incident, equipment failure, or other emergency:</td>
<td>Check here if section is not applicable:</td>
<td>On-site or Outside buffer zone</td>
<td></td>
</tr>
<tr>
<td>Date and time:</td>
<td>Location of elevated air concentration levels:</td>
<td>Date and time:</td>
<td>Other</td>
</tr>
<tr>
<td>Description of emergency procedures followed:</td>
<td>Date and time:</td>
<td>Description of elevated air concentration levels:</td>
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<tr>
<td>Additional comments:</td>
<td></td>
<td>Description of control measures or emergency procedures followed:</td>
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<tr>
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<td></td>
<td>Description of deviations from FMP (if applicable):</td>
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</tbody>
</table>

A single day’s fumigation activity

Page 2
### Post Application Summary

#### Air Monitoring Results

**When Respirators not in Use -**

<table>
<thead>
<tr>
<th>Date and Time</th>
<th>Handler Task/Activity</th>
<th>Sensory Irritation Experienced</th>
</tr>
</thead>
<tbody>
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</table>

- Check here if section is not applicable □

**When Respirators in Use -**

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Sample Number</th>
<th>Sample Date/Time</th>
<th>Task/Activity</th>
<th>Handler Location/Structure Location</th>
<th>Air Concentration</th>
<th>Sampling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL Area</td>
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<tr>
<td>CB Breathing Zone</td>
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<tr>
<td>CB Area</td>
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<tr>
<td>CB Breathing Zone</td>
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</tr>
</tbody>
</table>

- Any Handler Complaints? Sensory Irritation Experienced?

#### Compilation of Direct Read Instrument Air Monitoring Results:

- Date
- Location
- Method of sampling
- Air Concentration

**Signature & Date**

- Archive 2 years
The Future of Fumigant Use:

TO THE FARM:

A Broader Respect / Recognition and Need of:

• Updating of Overall Farm Organization and Management (record keepers)

• Increased use of Computer and Data management Systems and Software

• Expedited System of Documenting, Training, and Certifying New Workers

• Increased focus on Clerical and Communication Skills by Farm Personnel
The Future of Fumigant Use

TO CERTIFIED APPLICATORS:

A Broader Respect, Recognition and or Need For:

• Observance of Good Agricultural Practices GAP’s

• Broader and Stricter Adherence of Pesticide Label Language and Requirement

• People and Land Areas Surrounding Fields

• Observance of and Participation in Newly Required Product Stewardship and Worker Safety Certification Programs