Merced County Agricultural Commissioner's Office
Metam Sodium and Metam Potassium
Application Method 9

Permit Conditions for Sprinkler Applications

Scope

These permit conditions were developed to mitigate hazards of offsite movement of methyl isothiocyanate (MITC) following applications of metam sodium, metam potassium, and dazomet. DPR risk assessment and incident reports identified excess risk to field workers and bystanders near applications of these fumigants.

In contrast, for applications with 1, 2, or 3 post-application water treatments, use the buffer zone tables 1 through 12 within these recommended permit conditions. The buffer zone tables attached to this document have been developed for each product, and are arranged by the percentage of active ingredient.

Additional restrictions for nonattainment areas are listed in the volatile organic compound regulations in Title 3, California Code of Regulations (3 CCR) sections 6450 through 6450.2.

CAC discretion

1. Follow the most restrictive requirement, whether it is the label, regulations, or local CAC's adopted permit conditions. DPR may provide specific guidance about exceptions.
2. The CACs have the discretion to use mitigating conditions based on the local use conditions that have worked for them in the past.
3. These recommended permit conditions are based on the fairly limited data that DPR has available. This data does not cover all environmental conditions, climates, soil types, etc.

Emergency response plan

The county agricultural commissioner must be notified immediately if the emergency response plan is implemented.

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Restrictions near Schools, Day care centers, and Preschools

1. All applications are prohibited ½ mile or less from the perimeter of a school property (see Appendix I for definition of "School") unless the school is not scheduled to be in session during both the application and the 36-hour period following the end of the application.
2. For applications made greater than ½ mile up to 1 mile from the perimeter of a school property unless the school is not scheduled to be in session during both the application and the 36-hour period following the end of application, several restrictions apply including:
   - A minimum of three post-application water treatments, unless it meets the requirements of CAC discretion detailed under "Post-Application Water Requirements" later in these permit conditions;
   - field monitoring every hour for 12 hours following application; and
   - applications that comply with the "Application Method Requirements" and "Emergency Response Measures: Offsite Movement Suppression Requirements" as described below.

Application method requirements

Two types of sprinkler applications are allowed:
1. Daytime applications, and
2. 4 a.m. start nighttime applications.

The following requirements apply to <u>all</u> sprinkler applications of metam sodium and metam potassium:

- All application equipment must be inspected immediately prior to use to assure it is in good working condition.
- All irrigation equipment that will be used for post-application water treatments must be inspected and tested prior to beginning the application to assure it is in good working condition.
- The permittee or permittee's authorized representative, who is knowledgeable of the irrigation system, must be present at the treatment site during the application and must be trained as a pesticide handler. Employees must be trained pesticide handlers.

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Application method requirements (continued)

1. Daytime applications
   In addition to the requirements for all applications, for daytime applications the application block size cannot exceed 50 acres treated within 24 hours. Use Tables 1 and 2 to determine the maximum block size for daytime applications.

Table 1. Maximum Size of Application Block Treated Within 24 Hours for Daytime Sprinkler Applications Near "Schools"

Distance to Perimeter of Nearest School* Property	Maximum Application Block Size
½ mile or less and school is scheduled to be in session	Application prohibited
Greater than ½ mile and up to 1 mile, and school is scheduled to be in session	25 acres
Greater than 1 mile, or school is not scheduled to be in session during both the application and the 36-hour period following the end of the application	50 acres

*See Appendix I for definition of "School"

Table 2. Maximum Size of Application Block Treated Within 24 Hours for Daytime Sprinkler Applications Near "Occupied Structures" or "Bystander Areas"

Distance to Perimeter of Nearest Occupied Structure or Bystander Area*	Maximum Application Block Size
¼ mile or less	25 acres
Greater than ¼ mile	50 acres

*See Appendix I for definitions of "Occupied Structure" and "Bystander Areas"

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Application method requirements (continued)

2. 4 a.m. start nighttime applications
   In addition to the requirements for all applications, nighttime applications must meet the following conditions:
   - Start no earlier than 4 a.m.
   - Application block size cannot exceed 25 acres treated within a 24-hour period.
   - The metam sodium or metam potassium application must be metered evenly over a six-hour application period.
   - A minimum of two post-application water treatments must be applied.

   This method is allowed year round. However, in the San Joaquin Valley, Southeast Desert, or Ventura ozone nonattainment areas between May 1 and October 31, 4 a.m. start applications must be made at the reduced rates listed below:
   i. The metam sodium application rate must not exceed 260 pounds active ingredient per acre (lbs ai/A).
   ii. The metam potassium application rate must not exceed 290 lbs ai/A.

Offsite movement suppression requirements: emergency response measures

For all sprinkler applications, the certified applicator supervising the application must verify that the operator of the property to be fumigated has the capability to respond to offsite movement of MITC. The specific capability required is shown in Tables 3 and 4. The supervising certified applicator must document that capability in the Emergency Response Plan located in the Fumigation Management Plan.

Table 3. Required Capability to Suppress Offsite Movement Near "Schools"

Distance to Perimeter of Nearest School* Property	Water Treatment Requirements
½ mile or less and school is scheduled to be in session	Application prohibited
Greater than ½ mile and up to 1 mile, and school is scheduled to be in session	Irrigation equipment and water available for 48 hours post-application

*See Appendix I for definition of "School"

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Offsite movement suppression requirements: emergency response measures (continued)

Table 4. Required Capability to Suppress Offsite Movement Near "Occupied Structures" or "Bystander Areas"

Distance to Perimeter of Nearest Occupied Structure or Bystander Area*	Water Treatment Requirements
¼ mile or less	Irrigation equipment and water available for 48 hours post-application
Greater than ¼ mile up to 1 mile	Irrigation equipment and water available for 24 hours post-application
Greater than 1 mile	Exempt (not required)

*See Appendix I for definitions of "Occupied Structure" and "Bystander Area"

1. When planning to use water to suppress offsite movement, the certified applicator supervising the application must select, and document in the Emergency Response Plan located in the Fumigation Management Plan, a combination of water quantity, irrigation rate, and duration that meets all three of the following specifications:
   - total quantity of 0.20–0.40 inches of water over the treatment site,
   - irrigation delivery rate of 0.15–0.25 inches per hour, and
   - irrigation duration of 2–3 hours.

   The ranges of 0.20–0.40 inches of water and 0.15–0.25 inches per hour allow the CAC to determine the amount of water required based on local conditions such as soil type and moisture content, and air and soil temperature at the time of application.
2. Follow the application site monitoring requirements under "Application Site Monitoring Requirements" detailed later in these permit conditions.
3. Whenever offsite movement of MITC is detected, cease the application (if still underway) and initiate the Emergency Response Plan indicated in the Fumigation Management Plan.
4. The county agricultural commissioner must be notified immediately if the emergency response plan is implemented.
5. Obtain authorization from the CAC prior to restarting any application that has been ceased due to a response.

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Permit application

Permit applications must include a map of all "occupied structures" and "bystander areas" (see Appendix I for definitions of "Occupied Structure" and "Bystander Area") within ½ mile of the fumigation site and all schools within 1 mile of the fumigation site.

Notice of intent

1. The Notice of Intent (NOI) is required to be submitted at least 48 hours prior to the start of fumigation.
2. In addition to information required in 3 CCR section 6434(b), the following information must be submitted with the NOI:
   - The number of application blocks to be treated and acreage of each application block.
   - The time (within a 12-hour window) that each application is scheduled to commence. If the application fails to commence within the 12-hour window, a new NOI is required, but another 48-hour waiting period would not be needed unless required by the CAC.
   - The method of post-application treatment to be used to suppress offsite movement, including number of post-application water treatments, if applicable.
   - The buffer zone size and buffer zone duration if longer than required by the label.
   - The certified applicator's 24-hour contact telephone number.
   - Written agreement(s) required by labeling to allow the buffer zone to extend onto any areas not under the control of the owner of application block, if applicable. (Attach these agreements to the Fumigation Management Plan.)
   - Proof that sufficient water is available for application, post-application water treatment, and offsite movement suppression requirements. (Also attach to Fumigation Management Plan.)
   - Include the map required for the Fumigation Management Plan in the NOI.

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Metam Sodium and Metam Potassium Field Soil Fumigation Permit Conditions for Sprinkler Applications,

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Application timing

1. Daytime sprinkler applications of metam sodium and metam potassium must start no earlier than 1 hour after sunrise and must be completed in time to allow post-application water treatments to begin no later than 1 hour before sunset.
2. 4 a.m. start nighttime applications of metam sodium and metam potassium must start no earlier than 4 a.m. and must be completed in time to allow post-application water treatments to begin no earlier than 1 hour before sunrise.

Buffer zones

1. Label buffer zone credits are not allowed.
2. Tables
   - Use buffer zone tables 1 through 12 as appropriate based on the product and the number of post-application water treatments to determine the buffer zone distance. DPR recommends prohibiting metam sodium and metam potassium sprinkler applications with no post-application water treatments made.
   - If the tables do not capture the specific acreage or application rate, round up to the nearest acre or rate.
3. Permission for adjoining properties
   - When the buffer zone of an application block extends onto an area not under the control of the owner of the application block, a written agreement must be submitted with the NOI and attached to the Fumigation Management Plan.
   - If a written agreement is not included in the NOI, the buffer zone cannot encroach beyond the property line of such areas (residential areas, occupied structures, publicly owned parks, etc., as described on the product label).

Application site monitoring requirements

1. General Requirements
   - Monitoring information must be recorded on the form "Monitoring During Application (Field Fumigation) DPR-ENF-223" or an equivalent form and attached to the Post-Application Summary.

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Application site monitoring requirements (continued)

- If monitoring indicates a change that could result in offsite movement (e.g., increased or greatly decreased wind speed, change in wind direction toward occupied structures) the certified applicator supervising the application must be ready to carry out the requirements described in the Emergency Response Plan located in the Fumigation Management Plan.
- Application site monitoring as described in this permit condition is separate from the "Fumigant Site Monitoring" option of the "Emergency Preparedness and Response Measures" specified on the label, and must be conducted for each application.
- Whenever "Emergency Preparedness and Response Measures" are triggered, and the "Fumigant Site Monitoring" option is selected, the supervising certified applicator must ensure that the monitoring is conducted as follows:
    - Monitoring must be done at the outer edge of the buffer zone.
    - Monitoring must be done in the direction of bystanders, residences, and businesses, and in the direction that the wind is blowing.
    - Monitoring must be done in all directions on calm days (see Appendix I for definition of "Calm Day").
    - Person monitoring must have full olfactory capabilities (e.g., not impaired by allergies or colds)

2. Pre-Application
    - Monitor and document wind speed and direction, and soil and air temperature at the application site immediately prior to application.
3. During Application
    - The following conditions must be monitored every hour until the application is completed, recorded on the form "Monitoring During Application (Field Fumigation) DPR-ENF-223" or an equivalent form during the application, and attached to the Post-Application Summary:
        - Wind speed and wind direction; and
        - Any unusual conditions observed at or adjacent to the application site (e.g., odor, reported symptoms of exposure, equipment failure, or spill).

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Application site monitoring requirements (continued)

4. Post-application
   - On the day of application, the certified applicator supervising the application must ensure that a trained handler is at the site continually from 1 hour before sunset through 1 hour after sunset, in addition to the periods required to conduct post-application monitoring. If the trained handler is an employee, he or she must have the authority to initiate the Emergency Response Plan whenever needed, or must be able to immediately contact the person who has that authority.
   - Post-application field monitoring shall be conducted for 12 hours following application and recorded on "Monitoring Post-Application DPR-ENF-224" or an equivalent form and attached to the Post-Application Summary. Specific monitoring requirements are shown in Tables 5 and 6:

Table 5. Frequency of Post-Application Monitoring Required Near "Schools"

Distance to Perimeter of Nearest School* Property	Monitoring Requirements
½ mile or less and school is scheduled to be in session	Application prohibited
Greater than ½ mile and up to 1 mile, and school is scheduled to be in session	Every hour

*See Appendix I for definition of "School"

Table 6. Frequency of Post-Application Monitoring Required Near "Occupied Structures" or "Bystander Areas"

Distance to Perimeter of Nearest Occupied Structure or Bystander Area*	Monitoring Requirements
¼ mile or less	Every hour
Greater than ¼ mile	Every 2 hours

*See Appendix I for definitions of "Occupied Structure" and "Bystander Area"

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Application site monitoring requirements (continued)

- Each time post-application monitoring is conducted, the following conditions must be monitored and recorded:
  - Wind speed and direction at the application site.
  - Air temperature at the application site.
  - Post-application watering information (see "Post-Application Water Treatments (Field Fumigation) form DPR-ENF-225"). Record start and stop times for water treatments, as well as total inches applied.
  - Any unusual conditions observed at the application site (e.g., dry soil conditions, odor, irrigation equipment failure, or spill).
  - Monitoring must be done in all directions on calm days.

Post-application water treatments

1. Post-application water treatments are required and must be recorded on the "Post-Application Water Treatments (Field Fumigation) DPR-ENF-225" or equivalent form and attached to the Post-Application Summary.
2. Water can be applied at any time in response to odor or illness.
3. For each post-application water treatment discussed below, the certified applicator supervising the application must ensure a combination of water quantity, irrigation rate, and duration that meets all three of the following specifications:
   - total quantity of 0.20–0.40 inches of water over the treatment site,
   - irrigation delivery rate of 0.15–0.25 inches per hour, and
   - irrigation duration of 2–3 hours.

   The 0.20–0.40 inch range allows the CAC to determine the amount of water required, based on local conditions such as soil type and soil moisture content, and air and soil temperature at the time of application.

   All 4 a.m. start nighttime applications require a minimum of two post-application water treatments. For daytime applications, minimum requirements are shown in Tables 7 and 8:

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Post-application water treatments (continued)

Table 7. Post-Application Water Treatments Required for Daytime Sprinkler Applications Near "Schools"

Distance to Perimeter of Nearest School* Property	Water Treatment Requirements
½ mile or less and school is scheduled to be in session	Application prohibited
Greater than ½ mile and up to 1 mile, and school is scheduled to be in session	Minimum of 3 water treatments (CAC discretion to reduce to 2)
Greater than 1 mile, or school is not scheduled to be in session during both the application and the 36-hour period following the end of application	Minimum of 2 water treatments (CAC discretion to reduce to 1)

*See Appendix I for definition of "School"

Table 8. Post-Application Water Treatments Required for Daytime Sprinkler Applications Near "Occupied Structures" or "Bystander Areas"

Distance to Perimeter of Nearest Occupied Structure or Bystander Area*	Water Treatment Requirements
¼ mile or less	Minimum of 3 water treatments (CAC discretion to reduce to 2)
Greater than ¼ mile	Minimum of 2 water treatments (CAC discretion to reduce to 1)

*See Appendix I for definitions of "Occupied Structure" and "Bystander Area"

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Post-application water treatments (continued)

4. Use the following timing for whichever post-application water treatments are applied:
   - Post-application water 1 (Day 1)—Apply a minimum of 0.20–0.40 inches of water to the application block, at a rate of 0.15–0.25 inches per hour, starting within 30 minutes of completion of the application.
   - Post-application water 2 (Day 1)—Apply a minimum of 0.20–0.40 inches of water to the application block, at a rate of 0.15–0.25 inches per hour, on the same day of application, beginning no earlier than 1 hour before sunset and completing by midnight.
   - Post-application water 3 (Day 2)—Apply a minimum of 0.20–0.40 inches of water to the application block, at a rate of 0.15–0.25 inches per hour, on the day following the application, beginning no earlier than 1 hour before sunset and completing by midnight.
5. CAC Discretion
   - The CAC has the option to eliminate the third post-application water treatment requirement for application blocks **¼ mile or less** from an occupied structure or bystander area based on an evaluation of the soil type and moisture content, knowledge of local conditions, and effective offsite-movement control measures previously used, provided that the application block is **greater than ½ mile and up to 1 mile** from the perimeter of school property (unless the school is **not** scheduled to be in session during application and the 36-hour period following the end of the application). Use the buffer zones for two post-application water treatments if the third post-application water treatment is eliminated.
   - The CAC has the option to eliminate the second post-application water treatment requirement (except for 4 a.m. start applications) for application blocks **greater than ¼ mile** from an occupied structure, or bystander area based on an evaluation of the soil type and moisture content, knowledge of local conditions, and effective offsite-movement control measures previously used, provided that the application block is **greater than 1** mile from the perimeter of a school property (unless the school is **not** scheduled to be in session during both the application and the 36-hour period following the end of the application). Use buffer zones for one post-application water treatment if the second post-application water treatment is eliminated.

Buffer Zone Table 1: AMVAC Metam, Metam Sodium, and Vapam (32.7% metam sodium)
Buffer Zone Values for Sprinkler Applications with **Three** Post-Application Water Treatments

	Application Block Size (acres)													
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**30**	**40**	**50**
≤10	100	100	100	100	100	100	100	100	100	100	100	100	100	100
18	100	100	100	100	100	100	100	100	100	100	100	100	100	100
25	100	100	100	100	100	100	100	100	100	100	100	100	100	100
31	100	100	100	100	100	100	100	100	100	100	107	125	163	182
38	100	100	100	100	100	100	100	100	105	113	138	175	225	263
44	100	100	100	100	100	100	106	114	123	132	169	225	288	344
50	100	100	100	100	100	110	120	130	140	150	200	275	350	425
57	100	100	100	105	113	125	138	150	163	175	250	357	438	519
63	100	100	106	116	125	131	140	146	155	200	300	438	525	613
69	100	104	116	127	138	155	173	190	208	225	350	519	613	707
75	100	113	125	138	150	170	190	210	230	250	400	600	700	800
82	115	138	150	163	175	205	235	265	283	288	450	650	775	900
88	125	138	150	163	175	205	235	265	295	325	500	700	850	1000
94	137	150	163	175	188	223	258	293	328	363	550	750	925	1100
101	150	163	175	188	200	240	280	320	360	400	600	800	1000	1200

Buffer Zone Table 2: AMVAC Metam, Metam Sodium, and Vapam (32.7% metam sodium)
Buffer Zone Values for Sprinkler Applications with **Two** Post-Application Water Treatments

	Application Block Size (acres)													
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**30**	**40**	**50**
≤10	100	100	100	100	100	100	100	100	100	100	100	100	100	100
18	100	100	100	100	100	100	100	100	100	100	100	100	100	100
25	100	100	100	100	100	100	100	100	100	100	100	100	100	100
31	100	100	100	100	100	100	100	100	100	100	200	200	200	200
38	100	100	100	100	100	100	100	100	105	113	250	250	300	300
44	100	100	100	100	100	100	106	114	123	132	350	350	400	400
50	100	100	100	100	100	110	120	130	140	150	400	400	500	500
57	100	100	100	105	113	125	138	150	163	200	500	550	650	650
63	100	100	106	116	150	250	250	250	250	250	550	650	800	800
69	100	104	116	127	200	350	350	350	350	350	650	800	950	950
75	100	113	125	138	200	400	400	400	400	400	700	900	1100	1100
82	115	138	150	163	250	500	500	500	500	500	800	1050	1300	1300
88	125	138	150	163	300	550	550	550	550	550	900	1200	1450	1450
94	137	150	163	175	350	650	650	650	650	650	1000	1350	1650	1650
101	150	163	175	188	400	700	700	700	700	700	1100	1500	1800	1800

Buffer Zone Table 3: AMVAC Metam, Metam Sodium, and Vapam (32.7% metam sodium)
Buffer Zone Values for Sprinkler Applications with **One** Post-Application Water Treatments

	Application Block Size (acres)													
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**30**	**40**	**50**
≤10	100	100	100	100	100	200	200	200	200	200	300	600	800	1000
18	100	200	200	200	200	300	300	300	300	300	500	900	1100	1300
25	100	300	300	300	300	500	500	500	500	500	900	1100	1400	1600
31	150	450	450	450	450	750	750	750	750	750	1200	1500	1800	1950
38	150	600	600	600	600	950	950	950	950	950	1550	1850	2200	2300
44	200	750	750	750	750	1150	1150	1150	1150	1150	1850	2250	NA	NA
50	200	900	900	900	900	1400	1400	1400	1400	1400	2200	NA	NA	NA
57	300	1050	1050	1050	1050	1600	1600	1600	1600	1600	NA	NA	NA	NA
63	350	1150	1150	1150	1150	1800	1800	1800	1800	1800	NA	NA	NA	NA
69	400	1250	1250	1250	1250	2000	2000	2000	2000	2000	NA	NA	NA	NA
75	500	1400	1400	1400	1400	2200	2200	2200	2200	2200	NA	NA	NA	NA
82	550	1500	1500	1500	1500	2300	2300	2300	2300	2300	NA	NA	NA	NA
88	600	1650	1650	1650	1650	2400	2400	2400	2400	2400	NA	NA	NA	NA
94	650	1800	1800	1800	1800	2500	2500	2500	2500	2500	NA	NA	NA	NA
101	700	1900	1900	1900	1900	NA	NA	NA	NA	NA	NA	NA	NA	NA

Buffer Zone Table 4: AMVAC Metam, Metam Sodium, and Vapam (32.7% metam sodium)
Buffer Zone Values for Sprinkler Applications with **4 a.m Start**

	Application Block Size (acres)											
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**25**
≤10	100	100	100	100	100	100	100	100	100	100	100	100
18	100	100	100	100	100	100	100	100	100	100	100	100
25	100	100	100	100	100	100	100	100	100	100	100	100
31	100	100	100	100	100	100	100	100	100	100	200	200
38	100	100	100	100	100	100	100	100	105	113	250	250
44	100	100	100	100	100	100	106	114	123	132	350	350
50	100	100	100	100	100	110	120	130	140	150	400	400
57	100	150	150	150	150	200	200	200	200	200	500	550
63	100	150	150	150	150	250	250	250	250	250	550	650
69	100	200	200	200	200	350	350	350	350	350	650	800
75	100	200	200	200	200	400	400	400	400	400	700	900
82	115	250	250	250	250	500	500	500	500	500	800	1050
88	125	300	300	300	300	550	550	550	550	550	900	1200
94	137	350	350	350	350	650	650	650	650	650	1000	1350
101	150	400	400	400	400	700	700	700	700	700	1100	1500

Buffer Zone Table 5: Metam CLR, Metam 426, Sectagon 42, and Vapam HL (42% metam sodium)
Buffer Zone Values for Sprinkler Applications with **Three** Post-Application Water Treatments

	Application Block Size (acres)													
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**30**	**40**	**50**
≤8	100	100	100	100	100	100	100	100	100	100	100	100	100	100
13	100	100	100	100	100	100	100	100	100	100	100	100	100	100
19	100	100	100	100	100	100	100	100	100	100	100	100	100	100
23	100	100	100	100	100	100	100	100	100	100	107	125	163	182
28	100	100	100	100	100	100	100	100	105	113	138	175	225	263
33	100	100	100	100	100	100	106	114	123	132	169	225	288	344
38	100	100	100	100	100	110	120	130	140	150	200	275	350	425
42	100	100	100	105	113	125	138	150	163	175	250	357	438	519
47	100	100	106	116	125	131	140	150	163	200	300	438	525	613
52	100	104	116	127	138	155	173	190	208	225	350	519	613	707
56	100	113	125	138	150	170	190	210	230	250	400	600	700	800
61	115	152	189	226	263	268	273	278	283	288	450	650	775	900
66	125	152	189	226	263	268	273	278	295	325	500	700	850	1000
70	137	152	189	226	263	268	273	293	328	363	550	750	925	1100
75	150	163	189	226	263	268	280	320	360	400	600	800	1000	1200

Buffer Zone Table 6: Metam CLR, Metam 426, Sectagon 42, and Vapam HL (42% metam sodium)
Buffer Zone Values for Sprinkler Applications with **Two** Post-Application Water Treatments

	Application Block Size (acres)													
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**30**	**40**	**50**
≤8	100	100	100	100	100	100	100	100	100	100	100	100	100	100
13	100	100	100	100	100	100	100	100	100	100	100	100	100	100
19	100	100	100	100	100	100	100	100	100	100	100	100	100	100
23	100	100	100	100	100	100	100	100	100	100	200	200	200	200
28	100	100	100	100	100	100	100	100	105	113	250	250	300	300
33	100	100	100	100	100	100	106	114	123	132	350	350	400	400
38	100	100	100	100	100	110	120	130	140	150	400	400	500	500
42	100	150	150	150	150	200	200	200	200	200	500	550	650	650
47	100	150	150	150	150	250	250	250	250	250	550	650	800	800
52	100	200	200	200	200	350	350	350	350	350	650	800	950	950
56	100	200	200	200	200	400	400	400	400	400	700	900	1100	1100
61	115	250	250	250	250	500	500	500	500	500	800	1050	1300	1300
66	125	300	300	300	300	550	550	550	550	550	900	1200	1450	1450
70	137	350	350	350	350	650	650	650	650	650	1000	1350	1650	1650
75	150	400	400	400	400	700	700	700	700	700	1100	1500	1800	1800

Buffer Zone Table 7: Metam CLR, Metam 426, Sectagon 42, and Vapam HL (42% metam sodium)
Buffer Zone Values for Sprinkler Applications with **One** Post-Application Water Treatments

	Application Block Size (acres)													
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**30**	**40**	**50**
≤8	100	100	100	100	100	200	200	200	200	200	300	600	800	1000
13	100	200	200	200	200	300	300	300	300	300	500	900	1100	1300
19	100	300	300	300	300	500	500	500	500	500	900	1100	1400	1600
23	150	450	450	450	450	750	750	750	750	750	1200	1500	1800	1950
28	150	600	600	600	600	950	950	950	950	950	1550	1850	2200	2300
33	200	750	750	750	750	1150	1150	1150	1150	1150	1850	2250	NA	NA
38	200	900	900	900	900	1400	1400	1400	1400	1400	2200	NA	NA	NA
42	300	1050	1050	1050	1050	1600	1600	1600	1600	1600	NA	NA	NA	NA
47	350	1150	1150	1150	1150	1800	1800	1800	1800	1800	NA	NA	NA	NA
52	400	1250	1250	1250	1250	2000	2000	2000	2000	2000	NA	NA	NA	NA
56	500	1400	1400	1400	1400	2200	2200	2200	2200	2200	NA	NA	NA	NA
61	550	1500	1500	1500	1500	2300	2300	2300	2300	2300	NA	NA	NA	NA
66	600	1650	1650	1650	1650	2400	2400	2400	2400	2400	NA	NA	NA	NA
70	650	1800	1800	1800	1800	2500	2500	2500	2500	2500	NA	NA	NA	NA
75	700	1900	1900	1900	1900	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA= Not Allowed Buffer Zone Greater Than ½ Mile

Buffer Zone Table 8: Metam CLR, Metam 426, Sectagon 42, and Vapam HL (42% metam sodium)
Buffer Zone Values for Sprinkler Applications with **4 a.m Start**

	Application Block Size (acres)											
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**25**
≤8	100	100	100	100	100	100	100	100	100	100	100	100
13	100	100	100	100	100	100	100	100	100	100	100	100
19	100	100	100	100	100	100	100	100	100	100	100	100
23	100	100	100	100	100	100	100	100	100	100	200	200
28	100	100	100	100	100	100	100	100	105	113	250	250
33	100	100	100	100	100	100	106	114	123	132	350	350
38	100	100	100	100	100	110	120	130	140	150	400	400
42	100	100	100	105	113	200	200	200	200	200	500	550
47	100	150	150	150	150	250	250	250	250	250	550	650
52	100	200	200	200	200	350	350	350	350	350	650	800
56	100	200	200	200	200	400	400	400	400	400	700	900
61	115	250	250	250	250	500	500	500	500	500	800	1050
66	125	300	300	300	300	550	550	550	550	550	900	1200
70	137	350	350	350	350	650	650	650	650	650	1000	1350
75	150	400	400	400	400	700	700	700	700	700	1100	1500

Buffer Zone Table 9: Sectagon-K54 and K-Pam (54% metam potassium)
Buffer Zone Values for Sprinkler Applications with **Three** Post-Application Water Treatments

	Application Block Size (acres)													
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**30**	**40**	**50**
≤6	90	90	90	90	90	90	90	90	90	90	90	90	90	90
11	90	90	90	90	90	90	90	90	90	90	90	90	90	90
16	90	90	90	90	90	90	90	90	90	90	90	90	100	100
19	90	90	90	90	90	90	90	90	90	94	107	125	163	182
23	90	90	90	90	90	90	90	98	105	113	138	175	225	263
27	90	90	90	90	90	97	106	114	123	132	169	225	288	344
31	90	90	90	94	100	110	120	130	140	150	200	275	350	425
35	90	90	97	105	113	125	138	150	163	175	250	357	438	519
39	90	97	106	116	125	131	140	146	155	200	300	438	525	613
43	93	104	116	127	138	155	173	190	208	225	350	519	613	707
47	100	113	125	138	150	170	190	210	230	250	400	600	700	800
50	115	129	143	157	171	185	199	213	283	288	450	650	775	900
54	125	138	150	163	175	205	235	265	295	325	500	700	850	1000

Buffer Zone Table 10: Sectagon-K54 and K-Pam (54% metam potassium)
Buffer Zone Values for Sprinkler Applications with **Two** Post-Application Water Treatments

	Application Block Size (acres)													
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**30**	**40**	**50**
≤6	90	90	90	90	90	90	90	90	90	90	90	90	90	90
11	90	90	90	90	90	90	90	90	90	90	90	90	90	90
16	90	90	90	90	90	90	90	90	90	90	180	180	180	180
19	90	90	90	90	90	90	90	90	90	94	225	225	270	270
23	90	90	90	90	90	90	90	98	105	113	315	315	360	360
27	90	90	90	90	90	97	106	114	123	132	360	360	450	450
31	90	90	90	94	100	180	180	180	180	180	450	495	585	585
35	90	135	135	135	135	225	225	225	225	225	495	585	720	720
39	90	180	180	180	180	360	360	360	360	360	630	810	990	990
43	93	225	225	225	225	450	450	450	450	450	720	945	1170	1170
47	100	270	270	270	270	495	495	495	495	495	810	1080	1305	1305
50	115	315	315	315	315	585	585	585	585	585	900	1215	1485	1485
54	125	360	360	360	360	630	630	630	630	630	990	1350	1620	1620

Buffer Zone Table 11: Sectagon-K54 and K-Pam (54% metam potassium)
Buffer Zone Values for Sprinkler Applications with **One** Post-Application Water Treatments

	Application Block Size (acres)													
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**30**	**40**	**50**
≤6	90	90	90	90	90	180	180	180	180	180	270	540	720	900
11	90	270	270	270	270	450	450	450	450	450	810	990	1260	1440
16	135	405	405	405	405	675	675	675	675	675	1080	1350	1620	1755
19	135	540	540	540	540	855	855	855	855	855	1395	1665	1980	2070
23	180	675	675	675	675	1035	1035	1035	1035	1035	1665	2025	NA	NA
27	180	810	810	810	810	1260	1260	1260	1260	1260	1980	NA	NA	NA
31	270	945	945	945	945	1440	1440	1440	1440	1440	NA	NA	NA	NA
35	315	1035	1035	1035	1035	1620	1620	1620	1620	1620	NA	NA	NA	NA
39	450	1260	1260	1260	1260	1980	1980	1980	1980	1980	NA	NA	NA	NA
43	495	1350	1350	1350	1350	2070	2070	2070	2070	2070	NA	NA	NA	NA
47	540	1485	1485	1485	1485	2160	2160	2160	2160	2160	NA	NA	NA	NA
50	585	1620	1620	1620	1620	2250	2250	2250	2250	2250	NA	NA	NA	NA
54	630	1710	1710	1710	1710	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA= Not Allowed Buffer Zone Greater Than ½ Mile

Buffer Zone Table 12: Table Eleven: Sectagon-K54 and K-Pam (54% metam potassium)
Buffer Zone Values for Sprinkler Applications with **4 a.m Start**

	Application Block Size (acres)											
Gal/A	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**20**	**25**
≤6	90	90	90	90	90	90	90	90	90	90	90	90
11	90	90	90	90	90	90	90	90	90	90	90	90
16	90	90	90	90	90	90	90	90	90	90	180	180
19	90	90	90	90	90	90	90	90	90	94	225	225
23	90	90	90	90	90	90	90	98	105	113	315	315
27	90	90	90	90	90	97	106	114	123	132	360	360
31	90	90	90	94	135	180	180	180	180	180	450	495
35	90	90	135	135	135	225	225	225	225	225	495	585
39	90	180	180	180	180	315	360	360	360	360	630	810
43	93	225	225	225	225	450	450	450	450	450	720	945
47	100	270	270	270	270	495	495	495	495	495	810	1080
50	115	315	315	315	315	585	585	585	585	585	900	1215
54	125	360	360	360	360	630	630	630	630	630	990	1350

Appendix I: Definitions

Application: Activities required to incorporate metam sodium, metam potassium, or dazomet into the prepared soil. Applying additional water to the treated soil in order to suppress offsite movement of MITC is not part of the application process.

Bystander Area: An area typically used or visited by people, such as parks, playgrounds, lakes, reservoirs, bus stops, and other similar areas, or other areas identified by the CAC.

Calm Day: Day when wind speeds are forecasted to drop below 5 miles per hour and/or when field observation confirms the same.

Drench Application: Application is made to pre-formed beds or to rows, using low-pressure (30–35 pounds per square inch) booms with nozzles <12 inches above the top of the beds.

MITC: Methyl isothiocyanate. A breakdown product of metam sodium, metam potassium, and dazomet.

Offsite Movement Suppression Requirement: Written procedures that will provide an adequate emergency response in the event MITC odors from metam sodium, metam potassium, or dazomet are detected away from the application site, or symptoms are reported. The plan provides instructions on response procedures to cooperators and employees involved in metam sodium, metam potassium, and dazomet applications. This requirement is separate from the post-application water treatment requirements.

Occupied Structure: A structure that is, will be, or may be occupied at any time during the application and/or buffer-zone period. This includes living and working areas that are associated with the structure (e.g., yard, garden). Homes occupied by the property owner or permittee are excluded from this definition.

Ozone Nonattainment Area: An area designated in Title 40, Code of Federal Regulations section 81.305 for the purpose of air quality planning within the chart titled "California – Ozone (1-Hour Standard)."

Post-Application Water Treatment: Required water that is applied following completion of an application of MITC for the purpose of inhibiting offgassing from treated soils. Each post-application water treatment must be applied following the constraints pertaining to post-application timing, quantity, rate, and duration as listed in the post-application requirements section of the Recommended Permit Conditions.

Power Mulcher Application: Metam is sprayed on or injected under the soil surface immediately in front of a power driven mulcher. The treated soil is mulched with untreated soil at a depth set to where pest control is desired and immediately compressed by a soil compacting device.

Rod Bar Application: Backward-facing hollow tube (rod) attached to a metal blade-like horizontal bar. The rod bar is designed to operate under the surface of pre-formed beds, dispersing metam through holes spaced ½–1 inch linearly along the entire length of the bar. The application is immediately followed by a bed shaper or solid press rollers that compact the soil over the treated area. The rod bar application method is a variation of the shank injection method described on metam sodium and metam potassium product labels. As such, follow the product label requirements for shank injection applications when using the rod bar application method.

Rotary Tiller Application: Metam is sprayed on or injected under the soil surface immediately in front of a power driven tiller. The treated soil is tilled with untreated soil at a depth set to where control is desired and immediately compressed by a soil-compaction device.

School: An institution for the instruction of children from kindergarten through high school. Also included are day care centers and preschools, as defined in the California Health and Safety Code section 1596.76. *"Day care center" means any child day care facility other than a family day care home, and includes infant centers, preschools, extended day care facilities, and schoolage child care centers.* This excludes family home day care. (Users can find day care centers in their area by going to the following website: https://secure.dss.ca.gov/CareFacilitySearch/. Search by ZIP code, city, or county to find the names and addresses of the following child care centers in a specific area.)

Soil Capping Application: Following a metam sodium or metam potassium band treatment, a minimum of 6 inches of untreated soil is placed over the band.

Spray Blade Application: An 8–14 inch horizontal "V"-shaped blade designed to operate under the soil surface with one or two backward-facing spray nozzles placed under the leading edge. The blade is placed 1–4 inches below the soil surface and the resulting subsurface band is further covered with disk-hillers immediately following to form a minimum 6-inch protective cap over the treated band.