

**Appendix A – PRD/RD Use Description Memo: “Verification Memorandum for Metam
Sodium for San Francisco Bay Species”**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

MEMORANDUM

PC Code: 039003

DATE: 08/12/2010

SUBJECT: Verification Memorandum for Metam Sodium for SF Bay Species

FROM: Jose Gayoso, Chemical Review Manager
Risk Management & Implementation Branch 2
Pesticide Re-evaluation Division (7508P)
AND
Erik Kraft, Product Manager
Fungicide Branch, Registration Division (7504P)

THRU: Cathryn O'Connell, Team Leader
Risk Management & Implementation Branch 2
Pesticide Re-evaluation Division (7508P)

TO: Gabe Rothman
Environmental Risk Branch 5
Ecological Fate & Effects Division (7507P)

This memorandum serves to provide additional information on the use pattern of metam sodium not captured in the LUIS process. RD and PRD's role in the verification process are to fill information gaps and provide division appropriate expertise as outlined in the LUIS Verification SOP for RD and PRD.

PRD provides information and status regarding changes to the chemical use (such as application parameters, cancellations, or label language) that occurred as a result of the reregistration process. RD provides information regarding changes to the chemical use that may have occurred after the date of the LUIS label extraction. In the case a "Data Doer Only"¹ report was conducted, the CRM and PM will ensure that all highest application rates are reflected on the EFED Spreadsheet. The CRM and PM have drafted the "Registration and Reregistration

¹ This type of LUIS report is conducted when the AI of interest has more than 50 products. This report will contain:
1. Products actively registered to the data doer; 2. All technical registrations regardless of registrant; 3. All active California special local needs (SLN) registrations.

Verification” section of this memo to clarify knowledge gaps a risk assessor may encounter while using the data contained in the LUIS report.

This memorandum covers only the soil uses of metam sodium. Antimicrobial and sewer uses are not relevant to the San Francisco Bay endangered species litigation.

Finally, if further clarification is needed please contact Jose Gayoso.

Registration and Reregistration Verification

Date and Scope of the RED

- The RED for metam sodium was issued in July 2008. The metam sodium RED was amended in May 2009.
- Methyl isothiocyanate (MITC), the metabolite that performs the fumigation activity, was also evaluated in the RED.
- Application methods include chemigation including center pivot irrigation and solid set sprinkler, flood, shank including tarped and untarped, rotary tiller, spray blade, and drip.

Required Through the RED Process

- Separate mitigation measures were developed for soil, sewer, and antimicrobial uses of metam sodium.
- Implementation will be spread out over two years. Most measures will be implemented to the 2010 labels. Other measures, including buffer zone requirements, will be implemented in 2011.

Table 1. Implementation Schedule for Soil Fumigant Risk Mitigation Measures

Risk Mitigation Measure	Currently	2010	2011
Restricted Use (for soil uses of metam-sodium and metam-potassium, and MITC use for remedial treatment of wood poles and timbers only)		•	•
New Good Agricultural Practices		•	•
Rate reductions		•	•
Use site limitations		•	•
New handler protections		•	•
Tarp cutting and removal restrictions		•	•
Extended worker reentry restrictions		•	•
Training information for workers		•	•
Fumigant Management Plans			•
First responder and community outreach			•
Applicator training			•

Risk Mitigation Measure	Currently	2010	2011
Compliance assistance and assurance measures			•
Restrictions on applications near sensitive areas			•
Buffer zones around all occupied sites			•
Buffer credits for best practices			•
Buffer posting			•
Buffer overlap prohibitions			•
Emergency preparedness measures			•

2010 Label Changes

- **Application Rates** – The max application rate for all pre-plant soil fumigation metam sodium products is 320 lbs ai/acre.
- **Removal of Some Uses** – List of eligible crops was updated in the 2009 amended RED. See Appendix B of this memo for details.
- **Restricted Use Pesticide (RUP) Classification** – All soil fumigant uses of metam sodium are required to be classified as restricted use.
- **Respiratory and Dermal Protection** – Handlers will rely on sensory irritation to trigger additional respiratory protection. If MITC concentrations are detected above specific levels, handlers may be required to wear respirators or stop work. Additional dermal personal protective equipment (PPE) is also required for some handler tasks.
- **Perforation and Removal** –
 - Tarps cannot be perforated (i.e., cut or punched) for a minimum of 5 days (120 hours) after the fumigant application is completed;
 - A minimum of 2 hours must pass between perforation and tarp removal;
 - Tarps may be perforated manually only for the following situations: (1) at the beginning of each row when a coulter blade (or a similar device) is used on a motorized vehicle (i.e., all-terrain vehicle), (2) in fields that are one acre in size or less, or (3) during flood-prevention activities.
- **Entry** – Only properly trained and equipped handlers can be in the field during treatment and for 5 days after the application is completed.
- **Good Agricultural Practices (GAPs)** – Mandatory GAPs must be followed during all soil applications. GAPs specify appropriate weather conditions; injection depth; soil sealing; use of tarps; soil temperature; air temperature; soil moisture; soil preparation; prevention of end-row spillage; flushing of drip irrigation lines; and calibration, set-up, repair, and maintenance of application equipment.

2011 Label Changes

- **Buffer Zones** – Buffer zones of varying sizes, based on application method and rate, application block size, and emission control measures, will be required. Buffer zones will be in effect from the time the fumigation begins until 48 hours following the application.
- **Posting** – EPA is requiring that buffer zones be posted at usual points of entry and along likely routes of approach to the buffer zone unless a physical barrier, such as a fence, prevents bystander access to the buffer zone. The posting requirement is intended to prevent passers-by from entering a buffer zone before the restricted entry period terminates.
- **Fumigant Management Plans (FMPs)** – The certified applicator supervising the application must verify that a site-specific FMP exists for each application block. The FMP must include site information, a map of the treated field and adjacent property, list of authorized personnel to perform application, application procedures, posting procedures, and emergency procedures. Within 30 days of completing the application portion of the fumigation process, the certified applicator who supervised the application must complete a post-fumigation application summary that describes any deviations from the FMP that occurred, measurements taken to comply with FMPs, and any complaints and/or incidents that have been reported to the certified applicator. The summary also must include the actual date of the application, application rate, and size of application block(s).
- **Emergency Preparedness and Response** – The Agency is requiring emergency preparedness measures at the community level in the form of information and education for first responders and site-specific response and management activities. These measures will ensure early detection and quick response to situations as they arise.
- **Notice to State and Tribal Lead Agencies** – Assuring compliance with new label requirements is an important part of the package of mitigation measures. The Agency will work with all states to amend their cooperative agreements to include strategies for compliance assistance and assurance to aid the transition from current labels to labels that reflect the new mitigation. The Agency is also requiring applicators to provide notice to the state and tribal lead agencies that choose to be notified of fumigant applications.
- **Outreach Program for Communities** – The registrants must disseminate health and safety information to communities, including first responders, in areas where there is high use of metam sodium and metam potassium.
- **Training Program and Training Materials** – The registrants must propose and develop a training program approved by EPA that provides information to applicators and handlers on how to correctly apply the fumigant, including how to protect themselves and other handlers and bystanders, how to determine buffer zone distances, how to develop an FMP, and how to determine when weather and other site-specific factors are not favorable for fumigant application.

- **Ambient Air Monitoring Program** – The registrants must develop an air monitoring program in areas where there is high use of metam sodium and metam potassium to evaluate whether ambient air concentrations of MITC exceed the Agency's levels of concern (LOC).

Product Reregistration

- Metam sodium soil fumigant product reregistration for the 2010 label changes is complete. Labels were stamped "Accepted with Comments," on or around April 30, 2010. Subsequently, one or two memoranda were issued for each registration, which further amended the April 30, 2010 EPA comments.
- 2011 label changes are scheduled to be completed by Spring of 2011.

Registration Division Review

No changes have occurred in the use patterns since the last accepted labels and nothing is pending.

Appendix A
Active Soil Fumigant Registrations for Metam Sodium
(only CA SLNs included, other state's SLNs excluded)

Registration #	Name	Company Name	Percent Active Ingredient
1448-85 ¹	BUSAN 1020	BUCKMAN LABORATORIES INC.	33
1448-107 ¹	METAM CONCENTRATE	BUCKMAN LABORATORIES INC.	42.5
5481-350	METAM SODIUM	AMVAC CHEMICAL CORPORATION	32.7
5481-416	METAM SODIUM MANUFACTURER'S CONCENTRATE	AMVAC CHEMICAL CORPORATION	42
5481-418	METAM SODIUM SOIL FUMIGANT FOR ALL CROPS	AMVAC CHEMICAL CORPORATION	32.7
5481-420	AMVAC METAM	AMVAC CHEMICAL CORPORATION	32.7
5481-421	METAM SODIUM 42% TECHNICAL	AMVAC CHEMICAL CORPORATION	42
5481-423	METAM 426	AMVAC CHEMICAL CORPORATION	42
5481-446	METACIDE 42	AMVAC CHEMICAL CORPORATION	42
5481-456	METAM 376	AMVAC CHEMICAL CORPORATION	38
5481-458	METAM 376	AMVAC CHEMICAL CORPORATION	38
5481-466	VAPAM SOIL FUMIGANT SOLUTION FOR ALL CROPS	AMVAC CHEMICAL CORPORATION	32.7
5481-467	VAPAM SOIL FUMIGANT SOLUTION	AMVAC CHEMICAL CORPORATION	32.7
5481-468	VAPAM HL SOIL FUMIGANT	AMVAC CHEMICAL CORPORATION	42
5481-474	SODCURE 376	AMVAC CHEMICAL CORPORATION	38
19713-298	DREXEL PHUME SOIL FUMIGANT	DREXEL CHEMICAL COMPANY	32.7
34704-647	METAM SOIL FUMIGANT	LOVELAND PRODUCTS, INC.	32.7
34704-769	NEMASOL 42%	LOVELAND PRODUCTS, INC.	42
45728-16	METAM CLR 42%	TAMINCO INC.	42
51036-60 ¹	FUME V SOIL FUMIGANT	BASF SPARKS LLC	32.7
61842-4	METAM FLUID MANUFACTURERS CONCENTRATE	TESSENDERLO KERLEY, INC.	42.2
61842-6	SECTAGON 42	TESSENDERLO KERLEY, INC.	42.2
CA010028 ²	METAM 426	AMVAC CHEMICAL CORPORATION	42

¹ Voluntary cancellation of soil fumigant use in progress.

² SLN only for animal waste treatment, but parent registration used as soil fumigant.

Appendix B

List of crops eligible for reregistration

Cover crops (i.e., crops planted between periods of regular crop production to prevent soil erosion); Crops grown solely for seed; as well as (in alphabetical order):

alfalfa; amaranth (including leafy amaranth, Chinese spinach, tampala); anise; apple (including: balsam, crabapple); apricot; artichokes; arugula (roquette); asparagus (nursery production only); barley; basil; beans (including: lima, green, fava, seed beans); beet (including garden); berry (including black satin berry, blackberry, blueberry, boysenberry, chesterberry, lowberry, wild raspberry, youngberry, darrowberry, dewberry, cloudberry, elderberry, Cherokee blackberry, coryberry, European barberry, huckleberry, hullberry, gooseberry, cranberry, highbush cranberry, Himalayaberry, jostaberry, juneberry, saskatoon berry, lingonberry, loganberry, lavacaberry, lucretiaberry, mammoth blackberry, marionberry, bingleberry, mountain pepper berries, mulberry, olallieberry, dirksen thornless berry, nectarberry, Oregon evergreen berry, partridgeberry, phenomenalberry, rangeberry, raspberry (black and red), ravenberry, riberry, rossberry, schisandra berry, serviceberry, Shawnee blackberry, strawberry); bok choy; broccoli; brussels sprouts; cabbage (including Napa); calabaza; calamondin; cardoon; carrot; casaba; cauliflower; celeriac; celery (including: Chinese); celtuce; chayote (fruit); che; cherry (including: sweet and tart, chokecherry, pincherry); chervil; cheyenne; Chilean guava; Chinese greens; Chinese okra; Chinese waxgourd (Chinese preserving melon); chinquapin; chironja; chrysanthemum; cilantro; citrus citron; citrus hybrids; collard; com salad; com; cotton; cress (including: upland, yellow rocket, winter cress); cucumber (including: Chinese cucumber); cucuzza; currant, (including: black, red, native and other varieties and hybrids); dandelion; dill; dock (sorrel); eggplant; endive (escarole); fennel, Florence (finocchio); forest seedlings; garland; garlic; gherkin; ginger; gourd; grape; grapefruit; hechima; herbs (all); honey balls; honeysuckle; hyotan; kale; kiwifruit (including: fuzzy and hardy); kohlrabi; kumquat; leek; lemon; lettuce (including: head and leaf); lime; loquat; mandarin (including: tangerine and satsuma); mango; mayhaw; maypop; melon (including: bitter melon, cantaloupe, hybrids and/or cultivars, citron melon, crenshaw melon, golden pershaw melon, mango melon, honeydew melon, muskmelon, Persian melon, pineapple melon, Santa Claus melon, snake melon, watermelon); mint; muntries; mustard; nectarine; nursery stock (fruit seedlings and rose bushes only); nursery tree crops (including crops like maple, ash, dogwood); nut (including: almond, beech nut, cashew, chestnut, hickory nut, Brazil nut, macadamia nut (bush nut), filbert (hazelnut), pecan, pistachio, walnut (black and English/Persian); onion; orach; orange (including: sour and sweet); ornamentals; parsley; peas (including: English and garden); peach; peanut; pear (including: oriental and balsam); pepper; phalsa; plum (including: Chickasaw and Damson); plumcot; potato; prune (fresh); pummelo; pumpkin; purslane (including: garden and winter); quince; radicchio (red chicory); radish (including Oriental); rappini; rhubarb; rye; salal; sea buckthorn; soybean; spinach (including: New Zealand, Malabar, Indian); squash, (including: summer, winter, butternut, straightneck, Acorn, crookneck, hubbard, scallop, spaghetti); sugar beet; sweet potato; swiss chard; tangelo; tangor; tobacco; tomatoes; tree nuts (orchard replant only); turf (including golf courses); turnip; vegetable marrow; wheat; yams; zucchini.