



Emergency Mortality Disposal Advisory

June 30th, 2017

Summary

Central Valley producers whose normal mortality disposal was disrupted by the recent heat wave which overwhelmed their render's capacity have several options:

1. Directly transport the carcasses to an alternative rendering facility or permitted landfill if one can be located which will accept them.
2. Temporarily store mortalities on their farm in composting piles for later transport to a permitted landfill.
3. Permanently bury mortalities on farm in an emergency landfill- this process requires permit application, fees and paperwork with the Regional Water Quality Control Board.

Background

Due to the extended and record temperatures experienced over the last two weeks, Baker Commodities' usual processing capacity was overwhelmed by an abnormally high level of mortalities. The company has worked with industry and regulators and made provisions for some additional disposal through other rendering and landfill avenues. This week, however, management was forced to suspend pickups in order to address the processing backlog. Baker is on-track to resume normal service on Monday, July 3rd but will not be able to pick-up extensively decomposed deadstock as the condition of such carcasses prevents the manual and machine processing used in rendering facilities.

CDFA, a wide variety of dairy industry, county and water quality stakeholders worked to develop emergency options for dairy producers. The group agreed to cooperatively implement provisions provided for in the Central Valley Regional Water Quality Control Board's (RB-5) [conditional waiver](#) for addressing burial of mortalities during an animal health emergency. As required in the waiver CDFA has notified RB-5, detailing the need for temporary on-site carcass storage or disposal. In addition, several affected counties are in the process of declaring an emergency to allow the conditional waiver to take effect. Fresno, Merced, San Joaquin, Tulare, Kings, Madera, Stanislaus and Kern counties either already have or are in the process of creating such emergency declarations. Producers with questions about the current status of their own county are advised to contact the office of their county Agricultural Commissioner (Commissioner [association website](#)).

Disposal Options

Option #1 Direct transport to alternative rendering facility or permitted landfill.

The preferred option for carcasses unsuitable for rendering is direct transport to an alternative rendering facility or permitted landfill. This may only be possible for freshly dead animals that have died over the weekend, since rendering facilities have similar requirements for carcass condition. Some producers may be able to locate a landfill that will accept carcasses. A [partial listing of permitted landfills](#) with carcass policies and contact information is available from RB-5.

Option #2 Temporary storage on-farm for later transport to permitted landfills.

If an alternative rendering facility or landfill cannot be located, carcasses may be temporarily stored on-site in composting piles for later transport to permitted landfills. This mitigates the immediate nuisance problem of decomposing carcasses by the roadside, kills common human and animal pathogens and creates a more manageable material which is more acceptable for landfills. Several guides for composting cattle mortalities are available on-line including Extension Bulletins from [Michigan State](#) and [New Mexico State](#). The number and identity of cows composted and subsequently transported to landfill should be documented to answer any future regulatory inquiries. Research by the University of California suggests dairy manure (either dry-lot scraping or screened manure solids) having a moisture content ranging from 25% to 70% is an effective composting feedstock. A waterproof liner should be used to protect groundwater from infiltration. Adult carcasses should be placed on a 3-foot bed of dairy manure and covered with 3 feet of the same material. The site of the temporary piles should be protected from inundation, washout, runoff, ponding, and scavenging wild animals. The temporary pile should be at least 50 feet from any domestic well. Transport of the composted material to a permitted landfill alleviates environmental concerns related to deep burial. Producers should contact their landfill before transporting the composted material to ensure the facility is permitted to accept it. Composted material must be removed from the dairy no later than 6 months following the creation of the temporary pile. If composting is done below grade (buried), prior notification to RB-5 is required to avoid enforcement action. Be sure to keep and maintain records to document that the composted material was taken to a landfill within 6 months. RB-5 staff will be looking for evidence of bones and carcasses that have been left for more than 6 months and checking for landfill disposal records during future inspections.

Option #3 Permanent on-site burial in emergency landfills.

A third option available to producers is to permanently bury mortalities on farm in an emergency landfill. The Regional Board considers this a disposal method of last resort. Emergency on-site burial requires a substantial amount of permitting and paperwork documentation. The complete list of waiver requirements appears below in Appendix A, but includes submitting a Notice of Intent within 30 days of the burial, applying for a Waste Discharge Requirement and paying a fee (which may exceed several thousand dollars). In addition, a description of the emergency conditions, a copy of the emergency declaration, a map, diagram and photographs and management plan for the site need to be provided. Producers pursuing this option are advised to contact the Regional Board directly.

The above guidance is only applicable during a declared emergency. Once the emergency situation is over, disposal of mortalities on-site will be considered by RB-5 to be a violation of the Dairy General Order.

This is our best understanding of the current situation. We will provide updates if the situations changes and more information becomes available. Lastly, general guidance for producers related to prevention of heat stress in livestock and employees is included below in Appendix B.

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APPENDIX A

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0026_wav.pdf

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
ORDER NO. R5-2013-0026
CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS
FOR DISASTER-RELATED WASTES DURING A STATE OF EMERGENCY
WITHIN THE CENTRAL VALLEY REGION

F. Specific Waiver Conditions for Mass Mortality Wastes Discharged to Emergency Landfills NOT Located at Regulated Waste Disposal Facilities (only applicable to disease-related emergencies)

1. Dischargers proposing to establish an emergency landfill for mass mortality wastes not located at a regulated waste disposal facility shall submit a Notice of Intent to the Central Valley Water Board **within 30 days after** the initial discharge of wastes from a Declared Disaster Area (or by schedule required in Condition G for emergencies not in a Declared Disaster Area). The Notice of Intent shall include a copy of a letter from the California Department of Food and Agriculture or other Federal, State, or local government agency stating that the mass mortality wastes cannot be transported to a rendering plant or regulated landfill due to health concerns (e.g., disease). The notice shall also include an explanation stating why other options than onsite disposal, such as onsite composting, are not feasible. In addition, the Notice of Intent shall contain the information listed in Attachment A of this Conditional Waiver.
2. The Discharger shall comply with all applicable conditions in **Section A** of this Conditional Waiver.
3. Owners/operators of mass mortality emergency landfills not on regulated facilities shall ensure that they are sited, designed, constructed, operated, and maintained to ensure compliance the following minimum prescriptive and performance standards:
 - a) The bottom of an emergency landfill shall be placed at least 10 feet above the highest historically known or anticipated level of groundwater, and more than 500 feet from any surface water of the state.
 - b) Emergency landfills shall be protected from inundation or washout due of floods with a 100-year return period.
 - c) Emergency landfills shall not be located on a known Holocene fault.
 - d) Emergency landfills shall not be located in areas of potential rapid geologic change (e.g., landslides, debris flows, flashflood areas, etc.).
 - e) Emergency landfills shall not be located in areas underlain by fractured bedrock aquifer or highly permeable soils (e.g., gravels, sands, and loamy sands) or in facilities that are characterized by such deposits (e.g., gravel quarry).
 - f) For disaster related mass mortality wastes streams that are in a liquid form (e.g., raw eggs, etc.), the owner/operator shall reduce the moisture content prior to discharge by mixing with an absorbent material (e.g., saw dust, mulch, soil, etc.).
 - g) The thickness of each layer of mass mortality wastes shall be limited to less than two feet, or the thickness of one animal carcass if greater than two feet.
 - h) Lime (or another liquid abatement material) shall be added to each layer to help reduce the generation of liquid by the mass mortality wastes.
 - i) Each layer of lime-covered mass mortality wastes shall be covered by at least three feet of soil, or an alternative material approved by Central Valley Water Board staff, before adding another layer of mass mortality wastes. Alternative materials shall not increase threat to underlying groundwater relative to using three feet of clean soil.
 - j) Mass mortality wastes shall be discharged for disposal in compliance with the conditions of this Conditional Waiver and covered at the end of each working day.
 - k) The final layer of disaster related mass mortality wastes discharged into the emergency landfill shall be overlain by a final layer of not less than three feet of soil, or an equivalent alternative approved by Central Valley Water Board staff. The final soil layer shall be placed in a mound configuration so that the final soil layer: 1) Overlaps the mass mortality wastes by several feet on each edge of the emergency

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landfill; 2) is at least three feet thick over all portions of the mass mortality wastes; and 3) is sloped to provide good drainage that does not impair the integrity of the emergency landfill. Side slopes shall not be steeper than 4 (horizontal) to 1 (vertical).

- l) The owner/operator should also evaluate, implement, and document other effective waste isolation methods (and waste moisture reducing methods) in conjunction with the procedures identified above.
4. The mass mortality emergency landfill shall be designed, constructed, and operated to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, and washout. The owner/operator shall protect the integrity of the final cover from adverse impacts due to erosion by installing and maintaining MMs/BMPs, including:
 - a) Installation of runoff control features on the upgradient side of the emergency landfill to divert offsite storm water from the emergency landfill.
 - b) Installation of an effective runoff collection and conveyance ditch.
 - c) Grading and maintenance of the final cover to eliminate ponding of water over the emergency landfill.
 - d) Installation and maintenance of erosion control measures on the cover of the emergency landfill (e.g., install straw mulch and/or a vegetative cover).
 - e) Installation of a deer fence (or equivalent) around the perimeter of the emergency landfill to discourage digging into the waste by carnivores.
5. Owners/operators of mass mortality emergency landfills not on regulated facilities shall post at least one clearly visible sign (in English) listing the following minimum information: a) clearly identify the area as an emergency landfill for animal and agricultural wastes, b) a warning against trespass, c) a description of the reason for the emergency landfill (e.g., Exotic Newcastle, Avian Flu, etc.), the type(s) of waste buried at the site (e.g., types of carcasses, egg wastes, manure, etc.), and d) the name and telephone number of the current property owner. The facility owner/operator shall post additional signs as necessary (in languages other than English) to more effectively communicate the minimum contact information (listed above) to the local community. The sign(s) shall be maintained as required to keep them legible and shall remain in place while the emergency landfill remains on site.
6. Owners/operators of mass mortality emergency landfills not on regulated facilities shall submit a ROWD to the Central Valley Water Board and apply for WDRs (using Form 200 available at www.waterboards.ca.gov/publications_forms/forms/docs/form200.pdf), and submit a filing fee for threat and complexity rating 3-C for Title 27 WDRs, currently \$3,040 including the ambient water monitoring surcharge (subject to periodic change). The ROWD and application for WDRs and filing fee shall be provided to the Central Valley Water Board **within 30 days** of submitting the NOI to create an emergency landfill for disposal of disaster related mass mortality wastes. At a minimum, the ROWD shall include the following information:
 - a) A short description of the emergency conditions that made the emergency landfill necessary.
 - b) The identity, physical address, mailing address and telephone number of the current landowner.
 - c) Photographs taken to document the location of the emergency landfill, practices used for placement of wastes and soil layers, and the appearance of the emergency landfill after installation of the final cover.
 - d) A map showing the location and perimeter of the emergency landfill, its location relative to local topographical, geographical, biological, and cultural features (e.g. roads, streams, etc.), and provide Geographical Information System (GIS) data as available.
 - e) A simple cross section of the emergency landfill and a description of the construction (thickness of layers, distance from bottom of landfill to first groundwater, and thickness and type of final cover).
 - f) Estimated depth from the ground surface to first groundwater and source of the information.
 - g) An estimate of the amount of wastes (e.g., in pounds or tons) discharged into the emergency landfill.
 - h) A description of measures taken to ensure that wastes and waste constituents do not migrate outside the emergency landfill or into groundwater.
 - i) Any other site-specific or discharger related information requested by the Central Valley Water Board.
7. Following evaluation of the ROWD, Central Valley Water Board staff may prepare WDRs if the landfill will become permanent. A monitoring and reporting program may also be issued, and may require groundwater monitoring. Clean closure of the landfill may be required if the ROWD indicates a significant potential to impact groundwater, and if the disease threat has abated to allow transportation of the mass mortality waste.

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APPENDIX B

Heat Stress in Dairy Cows – Cows are more sensitive to heat stress than humans, with production losses (at low humidity) starting in the low 80 degrees. Water intake may double during times of heat stress and water should always be available free choice. Water consumption can also be encouraged by water troughs which are shaded and easily available after exiting the parlor, when cows consume half their daily intake.

During times of high heat stress cattle should only be worked during the cool of the morning and vaccination should be avoided. Providing adequate shade is the most cost-effective heat-stress mitigation available, reducing heat load of cattle by 30 to 50%. Addition of sprinklers/soakers or misters/foggers can leverage heat stress reduction provided by shades.

The most practical method to determine if a dangerous level of heat stress is present is to count respiration rates. Normal respiration rates for dairy cattle will be less than 40 breaths per minute. If five cows out of 10 have respiratory rates exceeding 100 breaths per minute however, immediate action is indicated. Emergency action can include installation of temporary shade structures and soaking lines.

Detailed information on management of both routine and emergency heat stress in dairy cattle can be found by linking to CDQAP's [heat stress page](#) or by visiting CDQAP home page at www.cdqap.org and searching under animal care topics.

Heat Stress in Dairy Employees – Heat stress can affect not only cattle but employees as well. In particular employees that are older, overweight or being treated for a medical condition may be at increased risk. Dairy producers can [work with farm managers](#) to manage work conditions such as scheduling hot jobs for the cooler part of the day and to acclimatize new employees to high-heat conditions. During high environmental temperatures employees should be encouraged to drink water frequently, about one cup every 15 to 20 minutes.

Medical aid should be provided promptly for any employee that exhibits signs of heat exhaustion or heat stroke. Such symptoms can start with fatigue, headache, dizziness and nausea and progress to confusion, slurred speech and fainting. For serious cases of heat stroke the most effective emergency first aid treatment (while awaiting medical services) is continuously soaking the patient's body with running water, such as from a hose.

California employers are required to provide employee training on heat illness, access to both water and shade for periodic breaks and a written heat illness prevention plan. [Cal-OSHA's heat illness prevention webpage](#) also provides considerable information including video links, pocket guides in English and Spanish and a calendar of training courses. Additional guidance is available from the University of California's [Heat Illness Prevention webpage](#).

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