



Natural Resources Conservation Service
Victorville Field Office
14393 Park Ave. Suite 200
Victorville, CA 92392
(760) 843-6882
(760) 843-9521 (Fax)

Date: 9-12-12
To: California State Water Resources Control Board
From: Travis Godeaux, NRCS Victorville, CA
Subject: Comments on Proposed Permitting Requirements for Compost Facilities



We appreciate the opportunity to comment on the proposed "General Waste Discharge Requirements for the Discharge of Wastes at Compost Management Units" as well as the proposed "Monitoring and Reporting Program for the Discharge of Wastes at Compost Management Units".

The following comments and questions were made after attending the State Water Quality Control Board Meeting in Riverside, CA on August 28th.

General observations and comments:

It appears from the language of the draft requirement that all facilities which stack manure in an uncontained condition on their property, unless covered by a separate waste discharge permit or waiver, will be required to file for this permit. From the nature of the presentation at the Water Board meeting on August 28th, it seems that this may not be the intent of this requirement. The final version of this requirement should consider whether or not this permit was meant to regulate Animal Feeding Operations (AFOs) or whether they should be regulated under existing or other requirements. For example, should an owner of a horse that piles manure in a corner of their property be required to file for this permit and to prepare engineering plans? The speaker at the meeting said that dairies (I assume he means all CAFO's) would not need to file for this permit because they would be covered under some other permit, but I did not see this exception written in to the draft requirements.

Also, it would be helpful to describe the technical requirements of the working areas, ditches, ponds and monitoring requirements as to what the purpose of those requirements are and how they are both necessary for protection of groundwater and practicable for the construction of such properties.

Need for definition of what constitutes a discharge - A discharger is defined on page 1 of the report as "...anyone who owns or operates a Compost Management Unit (CMU). CMU is defined as "an area of land, or a portion of a Compost Facility, at which feedstocks, additives, amendments, compost (active or stabilized), and/or wastewaters are discharged for treatment or storage." The word "discharged" is never defined. Is it considered to be a discharge to land when manure is set on a stacking pad or is there a discharge only when water percolates into the ground in any amount? Does this make everyone who has animal manure stacked on their property a discharger? Manure in any amount places one in the Tier 2 or 3 category. It does not seem useful to define someone as a discharger based upon ownership of land, but never to define what constitutes a discharge.





Natural Resources Conservation Service
Victorville Field Office
14393 Park Ave. Suite 200
Victorville, CA 92392
(760) 843-6882
(760) 843-9521 (Fax)

Requirements to certify– For each Tier there is a requirement that “The Discharger must, to the satisfaction of the Regional Water Board, and certify under penalty of perjury, ensure that at the CMU: The discharge of feedstock as specified in the preceding paragraph, will not contribute to, cause, or threaten to cause a condition of contamination, pollution or nuisance.” We believe this will be a difficult requirement to meet considering that every activity humans do “contributes to, causes, or threatens to cause a condition of contamination, pollution or nuisance.”

Definition of hydraulic conductivity – In appendix A “Hydraulic Conductivity” is defined as “the ability of natural and artificial materials to transmit fluid. For water, including aqueous solutions, the term is expressed as a measure of the rate of flow (e.g., cubic centimeters per second) one can expect through a unit-area (e.g., one square centimeter) cross section of the material *when the hydraulic gradient is unity* (e.g., one centimeter of head loss per centimeter of travel through the material). The resulting numerical value is expressed in velocity units (e.g., centimeters per second).” By adding the phrase “when the hydraulic gradient is unity” the scientific definition of Hydraulic Conductivity has been changed. In its original sense Hydraulic Conductivity is expressed in the equation for Darcy’s Law $Q=A*K*i$ which can be rearranged to solve for specific discharge through a porous medium $q=K*i$ where q =specific discharge; K = Hydraulic Conductivity and i =hydraulic gradient. Therefore hydraulic conductivity is independent from hydraulic gradient. By setting the hydraulic gradient to 1 in the definition, the water board has actually defined hydraulic conductivity as specific discharge for a specific case which will usually not exist in the field. This is an important concept because of the confusion with the terms and the modes by which the water board is trying to control the design requirements of storage ponds, working surfaces and drainage ditches. If the goal of the listed design requirements is to limit the amount of water percolating through a liner, then setting a number to specific discharge would be an appropriate method. Regardless of the amount of head placed on a porous medium, an anticipated amount of leakage would be set. For example, a pond which holds 20ft of water would leak twice as fast through the same liner as a pond which only holds 10ft of water and therefore it would need twice as thick or half as permeable of a liner. This is an extremely important component of the equation when dealing with pads and ditches because the hydraulic gradient is often much less than 1. With the way the Water Board has written the requirements for pads and ditches, it is difficult to tell what the desired end result is and what might constitute an equivalently engineered system. In setting the requirements for pads and ditches, consideration should be given to the small hydraulic gradient and the limited amount of time in which water exerts a gradient on these surfaces throughout the year. Consideration should also be given to the cost of constructing extremely low permeability working pads which are often much larger than storage ponds and can quickly drive the cost beyond a facilities means. Other surface materials which help reduce permeability and stabilize the working surface such as fly ash or soil cement may give satisfactory properties assuming those properties are identified.





Natural Resources Conservation Service
Victorville Field Office
14393 Park Ave. Suite 200
Victorville, CA 92392
(760) 843-6882
(760) 843-9521 (Fax)

Tier 2 material specifications: On Page 15 of the report it states “(1) All working surfaces must have a hydraulic conductivity of 1×10^{-6} cm/s or less, and meet one the following construction and material specifications: (a) Asphalt concrete or Portland cement concrete designed to minimize the potential for cracking and to allow equipment to operate without damage; (b) Compacted clay, with a minimum thickness of one foot and protected from desiccation and installed in a manner such that the integrity will not be impaired by the operation of heavy equipment used at the CMU; or (c) An equivalent engineered alternative as proposed in an approved NOI.” This issue has been partially addressed in the above paragraph, however the material specification that the working surface must have asphalt concrete or Portland cement concrete is very vague. What does it mean that concrete is designed to minimize cracking? Does this mean fiber mesh should be added? Reinforcement? We suggest that you define what the purpose of this requirement is rather than stating two types of materials which have numerous possible variations of properties and not listing a desired property of the materials. Is the goal of this statement to help make a second layer of an impermeable surface (because both asphalt and concrete can be very porous in certain designs), or is the purpose to make a stable surface. We suggest that the requirements be reworded to show the intent of the design rather than requiring the inclusion of certain materials which may or may not accomplish the objectives. We also believe this will reduce confusion when the time comes to determine if “an equivalent engineered alternative” is actually equivalent since many compacted soils can achieve at least some of the properties of certain asphalts or cements.

Waste water detention ponds: A purpose should be given as to why a “synthetic liner” of 40mil is required in addition to other lining materials so that if an equivalent design method is chosen, it can be determined which properties are supposed to be equivalent. The way the requirements are written right now, it would be hard to determine what that acceptable alternative would be.

Point of compliance statement: On page 4 of the MRP it states “The point of compliance for any water standard at any CMU enrolled under the Order, and subsequently this MRP, is a vertical surface located at the hydraulically down-gradient limit of the CMU that extends down through the uppermost aquifer underlying the CMU.” Perhaps this statement could be written more clearly or an example given of what this means. Is there a way of writing this in more common language? It seems like it is talking about a single point and yet it mentions a vertical “surface” which assumes a plain and more than one point. Do they mean a vertical line? Does hydraulically down gradient mean straight down by gravity or is this talking about something else?

Semi-annual monitoring of wastewater in ponds: What is the purpose of this monitoring? We’d expect that these ponds will be empty much of the time.

Requirements for monitoring wells: We believe the requirements for installing background monitoring wells upgradient of the CMU may not be feasible in areas where groundwater gradient has not already been scientifically determined. Monitoring requirements in areas where background





Natural Resources Conservation Service
Victorville Field Office
14393 Park Ave. Suite 200
Victorville, CA 92392
(760) 843-6882
(760) 843-9521 (Fax)

conditions cannot be determined by installation of monitoring wells on the CMU alone present a challenge to obtaining valid monitoring data. We offer USDA NRCS National Water Quality Handbook Part 614 – “Design of Water Quality Monitoring Systems”. A link to this manual can be found at: <http://policy.nrcs.usda.gov/> Go to “handbooks” and then “Title 450 – Technology” then “National Water Quality Handbook”. We suggest the Water Board consider developing region wide plans or a statewide plan for how individual site data should be used on the larger scale to determine water quality trends rather than assuming background conditions based on wells from one parcel of property.

Sincerely,

A handwritten signature in blue ink that reads "Travis Godeaux". The signature is written in a cursive style.

Travis Godeaux, Agricultural Engineer – USDA NRCS- Victorville, CA

