

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0088

WASTE DISCHARGE REQUIREMENTS  
FOR  
COMPOST SOLUTIONS INC.  
AND  
ROAD 27 LIMITED PARTNERSHIP  
COMPOST FACILITY  
GLENN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

1. Compost Solutions Inc. submitted a Report of Waste Discharge (RWD) on 24 February 2006 for the creation of a green waste composting facility. Compost Solutions Inc. submitted additional information and the RWD was deemed complete on 23 March 2007. The property (Assessor's Parcel Number 024-030-031) is owned by Road 27 Limited Partnership. Compost Solutions Inc. and Road 27 Limited Partnership are hereafter jointly referred to as Discharger.
2. The facility is located approximately four miles south of the town of Orland in Glenn County. It will be constructed on 28 acres in the northeast quadrant of the intersection of County Road N and Road 27. The facility is located in Section 12, T21N, R3W, MDB&M, as shown on Attachments A and B, which are incorporated herein and made a part of this Order.
3. The facility will include a three-acre parking and storage area, four acres of filter vegetation strips, and a 21-acre composting area. The facility will produce approximately 30,000 tons of finished compost annually.
4. The facility will include a gravel berm, a soil berm, and vegetative filter strip areas to control, filter, and channel storm water flow on and off the site.
5. In preparing this Order, the Regional Water Board has considered the language in the draft general waste discharge requirements (WDR) for green waste composting facilities that are being considered by staff of the Regional Water Board. If the State Water Resources Control Board (State Water Board) and/or the Regional Water Board ultimately finds that Title 27 California Code of Regulations (CCR) (Title 27 or 27 CCR) is applicable to green waste composting facilities, it would likely result in this order being rescinded and new WDR being adopted. If and when the Regional Water Board adopts a general order for green waste composting facilities, the Discharger may apply for coverage under that Order, if applicable.

6. The California Integrated Waste Management Board (CIWMB) has adopted regulations governing the composting of green material, animal material, sewage sludge and municipal solid waste under Title 14, Division 30, Chapter 3.1. There are significant differences in the scope, authority and focus of the CIWMB's regulations governing composting and the requirements necessary, under this Order, for the protection of water quality. The Glenn County Environmental Health Department regulates this site as an Agricultural Material Composting Operation under CIWMB regulations.

#### WASTES AND THEIR CLASSIFICATION

7. The Discharger proposes to compost green material from commercial and/or municipal green waste collection operations [including leaves, clippings, cuttings, trimmings (of grass, weeds, shrubbery, bushes, or trees)] and wood chips from local orchards. The Discharger also proposes to compost agricultural commodities, including dairy manure and dairy bedding. The term "feedstock" refers to green material and agricultural commodities collectively. Additives to be mixed with the active compost will include water, clay, co-generation wood ash, bone char, potassium sulfate, and dry urea. Post-composting amendments may include fertilizers and/or lime and gypsum to adjust the pH.
8. The State Water Board adopted regulations under Title 27, consisting of requirements, waste classifications, and waste management unit classifications designed to protect the beneficial uses of waters of the state for projects involving the discharge of waste to land for treatment, storage, or disposal. Under Title 27, a Green Waste Operation that does not involve the processing of hazardous constituents would be classified as a Class II waste pile for the treatment and storage of solids waste and would be subject to its stringent monitoring, siting, design, and construction standards.
9. The feedstock and some of the additives used in Green Waste Operations are nonhazardous solid waste. Therefore, Green Waste Operations would normally be regulated under Title 27. However, the threat to the beneficial uses of surface water or ground water posed by the proposed green waste composting operation is not commensurate with the stringent monitoring, siting, construction, and design standards applicable to a Class II waste pile, under the Title 27 regulations, so long as the Discharger meets, and continues to meet, the requirements of this Order. In particular, these requirements include, but are not limited to, compaction of the upper one foot of soil on the composting and storage pad areas to a permeability of no faster than  $5 \times 10^{-6}$  cm/sec; composting during the dry season (April 1 to October 31); composting without the production of leachate; installation and monitoring of groundwater monitoring wells; tarping leftover compost, manure, and co-generation ash during the winter months; and constructing and maintaining storm water berms and vegetative filter strips.
10. Title 27 contains a waste classification system that provides the basis for determining which wastes may be discharged at each class of waste management unit (27 CCR Section 20200(a)). Waste classifications are based on an assessment of the potential risk of water quality degradation associated with each category of waste.

11. Title 27 allows the Regional Water Board to make a finding that "...a particular waste constituent or combination of constituents presents a lower risk of water quality degradation than indicated by classification according to this article" (27 CCR Section 20200(a)). Title 27 regulations do not provide for a waste pile of lower classification than Class II. Therefore based on the information presented in the RWD that the Discharger will meet the requirements of this Order, the Regional Water Board finds, pursuant to 27 CCR Section 20200(a)(1), that the operation is not subject to the Title 27 regulations so long as the Green Waste Operation continues to meet the requirements of this Order.
12. Compliance with the terms and conditions of this Order is not sufficient to prevent the threat to water quality posed by discharges of the following wastes for treatment by composting: municipal solid waste; sludges, including but not limited to sewage sludge, water treatment sludge, and industrial sludge; biosolids; septage; liquid wastes other than compost leachate, process storm water, wash water, or other liquids described in the RWD that are generated from the composting process; animal carcasses or parts thereof; waste edible oil, petroleum oil, and grease; hazardous waste and designated waste; wood containing lead-based paint or wood preservative, or ash from such wood; and any other waste determined to be unacceptable for discharge under this Order. Therefore the discharge of these wastes are prohibited in this Order.

#### SITE DESCRIPTION

13. Land use within one mile of the facility is agricultural and low density rural residential. Almond orchards are located on adjacent properties to the north, south, and west. The adjacent property to the east is owned by the Discharger and farmed for annual crops. Five residences are within 0.5 miles of the facility and 33 wells are located within one mile of the facility.
14. The area in which the composting will occur is located from one to 10 feet above the surrounding terrain, therefore, there is no storm water run-on. The site currently drains 0.1% to the east and 0.2% to the south.
15. The facility receives an average of 19.42 inches of precipitation per year as measured at Orland Station Number A00 6506 00, operated by the California Department of Water Resources (DWR). The 100-year, 24-hour precipitation event for the site is 4.07 inches and the 100-year annual rainfall is 35.98 inches.

#### SITE GEOLOGY

16. On 3 August 2006, five test pits were excavated to depths of eight feet each. The soil profiles of these test pits were logged under the supervision of a California Professional Geologist. The northern portion of the site consists of: sandy silt and silt with clay to approximately 1.5 feet, silt to a depth of approximately 5 feet, and gravelly sand and coarse sand to a depth of 8 feet. The southern portion of the site consists of sandy silt to approximately 1.5 feet and gravelly sand to a depth of 8 feet. The middle portion of

the site consists of silty clay to approximately 3 feet and sandy gravel to a depth of 8 feet.

17. To evaluate whether the existing soil could achieve the desired permeability of no faster than  $5 \times 10^{-6}$  cm/sec, a composite sample was collected from the upper foot of soil for each soil type for laboratory analyses. One sample was a composite of Test Pits (TP) 1 and 3, the northeastern portion of the site. The second sample was a composite of TP 2, 4, and 5, the northwestern and southern portion of the site. The resulting remolded permeability for compaction to 90% was  $3 \times 10^{-7}$  cm/sec for TP 1 and 3 and  $2.4 \times 10^{-6}$  cm/sec for TP 2, 4, and 5.

#### GROUNDWATER AND SURFACE WATER

18. Depth to groundwater in the vicinity of the facility is estimated to be approximately 15 feet below ground surface (bgs) during the wet winter and over 40 feet bgs during the summer. The wet winter value is based on values from the winter of 1998, which had precipitation that exceeded the 100-year annual rainfall.
19. Groundwater flow is to the southeast at an approximate gradient of 0.0017 feet/foot. DWR determined groundwater flow by contouring water-level data taken from over 40 monitoring wells scattered across Glenn County on 27 and 28 August 2005.
20. Groundwater sampling data was provided in the RWD from DWR for a well located two miles northwest of the site. The groundwater was of good quality except for elevated nitrate levels (31 mg/L). The well depth was not provided; therefore the data may not represent groundwater quality of the uppermost aquifer.
21. Surface water near the facility consists mainly of irrigation ponds and ditches. There is a large seasonal pond at the northeast corner of the site. The ponds and ditches ultimately drain to the Colusa Drain.

#### BENEFICIAL USES

22. The Regional Water Board adopted a Water Quality Control Plan, Fourth Edition, for the Sacramento River Basin and the San Joaquin River Basin, (hereafter Basin Plan) which designates beneficial uses, establishes water quality objectives, and describes an implementation program and policies to achieve those objectives for all waters of the Basin. These requirements implement the Basin Plan.
23. The beneficial uses of the Colusa Basin Drain designated by the Basin Plan are agricultural supply; contact recreation; canoeing and rafting recreation; warm water habitat; cold water habitat (potential use); warm migration; warm spawning; and wildlife habitat.
24. The beneficial uses of groundwater, as specified in the Basin Plan, are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

## FACILITY CONSTRUCTION

25. The RWD proposed that the upper one foot of soil in the pads (composting and storage) would be compacted to a permeability of no faster than  $5 \times 10^{-6}$  cm/sec. The existing soil will be ripped and recompacted to 90% of maximum dry density. The soil will be compacted by (1) clearing the roots and vegetative material, (2) ripping and cross-ripping or disking the upper twelve to fourteen inches, (3) conditioning the soil to 1% to 3% above optimum moisture content, (4) placing the soil in maximum eight-inch lifts (5) compacting the soil with a self-propelled pad-foot or towed sheep's foot, (6) smoothing the surface with a grader, and (7) smooth-drum rolling the surface. To verify remolded permeabilities, one proctor curve and one four-inch undisturbed permeability test (EPA 9100, or equivalent) per every soil type of soil encountered (minimum of two) and one proctor curve (ASTM D1557) per every week of compaction work or every 50,000 cubic yards of soil compacted (minimum of one curve per every 4.6 acres) will be performed. Soil density and moisture will be tested by a soil-testing technician using the nuclear-gauge method (ASTM D2922/3017). Testing at a frequency of one test per every 0.5 acres compacted is required.
26. The RWD states that the grade of the site will be maintained at 0.1% to the east and 0.2% to the south.
27. Storm water discharge from the site will increase after construction of the storage and composting pads due to increased impervious area. Storm water runoff from the composting pads will be towards the southeastern portion of the site. A gravel berm will be constructed in the southeast corner of the site to a height of one foot and a total length of 525 feet, at an angle perpendicular to storm water flow at the site. A soil berm will extend 200 feet to the north of the gravel berm (on the east side); 200 feet is the calculated backup of storm water behind the gravel berm during a 100-year 30-minute storm event. A filter strip will run along the eastern boundary of the site (minimum of 20-feet wide); the southeastern corner of the site will also have a large vegetative filter strip (approximately 3.5 acres). The vegetative filter strip areas will be planted with grass.
28. Three groundwater monitoring wells will be installed at the facility; one upgradient and two downgradient. The wells will be installed using 4-inch PVC casing and dedicated electric submersible pumps. The wells will be logged and surveyed to the nearest 0.01 feet vertically and two feet horizontally by a geologist under the direction of a licensed professional geologist. Groundwater will be monitored quarterly during the first year of operation and semi-annually thereafter.
29. This Order requires that the Discharger obtain coverage under the General National Pollutant Discharge Elimination System (NPDES) Permit for construction activities and submit a Storm Water Pollution Prevention Plan (SWPPP) to the Regional Water Board prior to construction.

## FACILITY OPERATION

30. The compost will be spread into windrows approximately 16- to 18-feet wide, six-feet deep, and up to 1,000-feet long. The site has capacity for approximately 20 rows or roughly 50,000 loose cubic yards (approximately 12,000 tons of finished compost per batch).
31. Two types of compost will be produced at the facility, one with manure and one without manure.
32. Trucks delivering green material will be directed to the composting pad where they will dump their load at the end of a row. The dumped green material will be formed into a windrow. Gaps will be left between different batches of compost in the same windrow. If all windrows are formed, trucks delivering green material will be directed to dump in the feedstock storage area. The green material will be visually inspected for trash and non-decomposable material.
33. Additives will be either placed in a row on the pad prior to the feedstock and incorporated into the feedstock during forming, or spread on top of the formed row and incorporated during tiling.
34. The following additives may be added at the specified percentages by weight: co-generation ash (5%), bone char (10%), potassium sulfate (10%), and dry urea (5%).
35. Fertilizers, bone char, potassium sulfate, and dry urea will not be stored on site during the winter. Up to 10,000 tons of manure and 100 tons of co-generation ash may be stored over the winter in separate straw bale bunkers lined and covered with a 20-mil or heavier plastic sheeting. The bottom liner will be covered with approximately six inches to one foot of soil to prevent the sheeting from tearing during turning and removal of the stored materials. Manure with greater than 50 percent moisture by weight will not be accepted at the facility.
36. The facility will implement the guidelines set by the National Organic Program for composting facilities. Therefore the compost will have a starting Carbon-Nitrogen ratio of between 25:1 and 40:1, maintain a temperature between 131 and 170 degrees Fahrenheit for a minimum of 15 days (rows are turned a minimum of five times), and maintain optimal moisture content. Each row requires two weeks at the desired temperature and a minimum of three weeks of composting time, during which each row will be turned every three to seven days. Finished compost will be screened and stockpiled. Approximately two-and-a-half months are required for each batch of compost; the Discharger proposed to process two batches during the operating season.
37. Composting equipment will be washed on a portable washdown pad constructed of heavy duty plastic to contain wash water. The wash water will be allowed to evaporate or used as an additive for the compost. The wash water will not be discharged directly to ground surface.

## CEQA AND OTHER LEGAL REFERENCES

38. On 26 June 2006, a Notice of Determination was filed by Glenn County for the Mitigated Negative Declaration (MND) for the creation of a green waste composting facility in accordance with the California Environmental Quality Act. The Regional Water Board has considered the MND prepared for the facility. Compliance with the requirements of this Order will mitigate or avoid environmental effects to water quality.
39. Section 402 of the Clean Water Act [33 U.S.C. Section 1342(p)] and regulations adopted by the U.S. Environmental Protection Agency (40 CFR Section 122.26) require that facilities which discharge storm water associated with industrial activity be regulated by a NPDES permit. The State Water Board has adopted a General NPDES Permit for industrial activity (NPDES General Permit No. 97-03-DWQ). Composting operations are included in Standard Industrial Classifications 2875 and 2879. Persons engaged in mixing fertilizers from purchased fertilizer materials (2875) or in manufacturing soil conditioners (2879) must obtain coverage and comply with the conditions of that General Permit.
40. Section 13267(b) of the California Water Code (CWC) provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports." The technical and monitoring reports required by this Order and the attached Monitoring and Reporting Program No. R5-2007-XXXX are necessary to assure compliance with these WDR.
41. State Water Board Resolution No. 68-16 requires a regional board, in regulating the discharge of waste, to maintain high quality waters of the State (i.e. background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in a regional board's policies (e.g. quality exceeds water quality objectives). Further, any activity that produces a waste must be required to meet WDR that will result in the best practicable treatment or control to assure that (a) pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained. The Discharger has proposed many safeguards, including but not limited too, compacting the composting and storage pads, composting during the dry season, and composting to minimize generation of leachate. Therefore maintaining compliance with these WDR will result in compliance with the antidegradation analysis. The Facility is of benefit to the State because a large portion of the materials that will be composted would otherwise be disposed of in a landfill.

42. The discharge as permitted herein is consistent with the provisions of the State Water Board Resolution No. 68-16, specifically Best Practicable Treatment and Control (BPTC) measures. As permitted, composting of green materials and agricultural commodities will not unreasonably affect present and anticipated beneficial uses of groundwater and will not result in water quality less than that described in the Basin Plan. BPTC will be accomplished by the following, including but not limited to:
- a. Compacting of the composting and storage pads to a permeability of no faster than  $5 \times 10^{-6}$  cm/sec;
  - b. Actively composting only during the dry season (April 1 to October 31);
  - c. Composting to minimize generation of leachate;
  - d. Installing and monitoring three groundwater monitoring wells (one upgradient and two downgradient);
  - e. Storing finished compost, manure, and co-generation ash during the winter months in lined and covered bunkers;
  - f. Washing machinery on a portable pad and allowing washwater to evaporate or adding it to the compost.
43. A full antidegradation analysis is only required when a reasonable expectation of possible groundwater degradation exists. Based on the items listed in Finding No. 42, Regional Water Board staff believes that the discharge is a low threat to groundwater degradation.
44. Under Water Code Section 13269, the Regional Water Board formerly regulated green waste composting facilities under Resolution No. 96-031 *Conditional Waiver of Waste Discharge Requirements for Composting Operations* (hereafter waiver). In 1999, passage of Senate Bill 390 modified Water Code Sections 13269 and 13350 to sunset all existing waivers of WDR as of 1 January 2003.

#### PUBLIC NOTICE

45. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
46. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
47. Any person affected by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with Sections 2050 through 2068, Title 23, CCR. The petition must be received by the State Water Board, Office of Chief



Counsel, P.O. Box 100, Sacramento, CA 95812, within 30 days of the date of issuance of this Order.

**IT IS HEREBY ORDERED**, pursuant to Sections 13263 and 13267 of the CWC, that Compost Solutions Inc. and its agents, assigns, and successors, in order to meet the provisions contained in Division 7 of the CWC and regulations and plans and policies adopted thereunder, shall comply with the following:

**A. Discharge Prohibitions**

1. The discharge of waste classified as “hazardous” as defined in 27 CCR Section 20164, or “designated” as defined in CWC Section 13173, is prohibited.
2. The use of any feedstock, additive, or amendment other than those specifically named in this Order is prohibited.
3. The discharge of wastes or additives that are listed in Finding No. 12 of this Order is prohibited.
4. The discharge of wash water directly to ground surface is prohibited.
5. The discharge of liquid waste to compost, other than leachate, wash water, or storm water, is prohibited.
6. The discharge of any waste on any portion of the pads other than feedstock; approved additives, approved amendments; compost leachate and/or storm water back to the compost, is prohibited.
7. The discharge of any waste, additive or amendment not listed in the RWD, or in amount that exceed the percentages by weight listed in Finding No. 34, is prohibited.
8. The addition of liquids, including ambient rainfall, to feedstock, compost (active or finished), additives, or amendments in excess of the material’s field capacity is prohibited.
9. Storage, processing or composting of feedstock, additives, or amendments outside of the designated storage, processing and composting areas, as defined in the RWD, is prohibited.
10. The discharge of liquid waste from the facility, other than storm water runoff, is prohibited.
11. Actively composting at the facility other than during the operating period (April 1 to October 31) is strictly prohibited.
12. Landfilling of any waste at the facility is prohibited.

## B. Discharge Specifications

1. The Discharger shall implement green waste composting that does not cause, or threaten to cause, a condition of contamination, pollution or nuisance (including odor), as defined in the CWC, Section 13050.
2. The discharge of wastes shall not cause water quality degradation.
3. Objectionable odors originating at the facility shall not be perceivable beyond the limits of the facility.
4. All feedstock, compost (active and finished), additives, and amendments that will be in direct contact with the ground surface shall be located on pads constructed as required by this Order.
5. Composting and storage pads shall be constructed to allow all necessary equipment to operate on them during all times of the year that compost is present at the facility without significant damage to the pad or incapacitation of the equipment.
6. The following wastes are acceptable to be received at the facility for processing in the composting and storage areas:
  - a. "Green Material" including, yard trimmings from commercial and municipal green operations and wood chips from local orchards. Green material **does not** include food material, biosolids, septage, sludges, waste edible oil, petroleum oil, or grease, mixed solid waste, material processed from commingled collection, or wood containing lead-based paint or wood preservative.
  - b. "Agricultural Commodities" means material of plant or animal origin, which result from the production and processing of farm or ranch agriculture, including dairy manure and dairy bedding. Agricultural Commodities **does not** include animal carcasses or parts thereof.
7. The use of additives is allowed, provided that their use and storage does not pose a threat to water quality. Approved additives and their maximum relative percentages by weight include: water, clay, co-generation ash (5%), bone char (10%), potassium sulfate (10%), and dry urea (5%).
8. The use of post-composting amendments is allowed, provided that their use and storage does not pose a threat to water quality. Approved amendments include fertilizers and/or lime and gypsum.
9. The Discharger shall not over-apply water to compost such that leachate discharges to the surface of the pads or the ground.

### **C. Facility Specifications**

1. Compost and storage pads, vegetative filter strips, and berms shall be designed and constructed under the direct supervision of a California registered civil engineer, or a certified engineering geologist, and shall be certified by that individual as meeting the requirements of Finding Nos. 25, 26, and 27 of this Order prior to waste discharge.
2. Pad Throughflow Control -- The soil in the upper one-foot of the composting, feedstock, and storage pad areas shall be compacted to at least 90% of maximum dry density. The pads shall be compacted to have a permeability no faster than  $5 \times 10^{-6}$  cm/sec. The pads shall have and maintain a minimal permeability relative to the downward movement of applied, produced, and precipitated waters by virtue of an effective combination of any of the following factors:
  - a. The depth, composition, and degree of compaction of the pad;
  - b. The judicious use of applied water to control dust and facilitate continued compaction of the pad portions between the compost and storage piles;
  - c. The use of heavy equipment on the pads;
  - d. Shifting the location of the compost and storage piles, at least annually, to facilitate and maintain compaction of the areas they cover;
  - e. Methods of limiting applied water to inhibit the production of leachate;
  - f. Methods of assuring that no compost pile, feedstock pile, additives or amendments produces free drainage (i.e. releases leachate) in response to precipitation event, despite foreseeable antecedent moisture conditions; and/or
  - g. Other effective measures proposed by the Discharger and approved by Executive Officer.
3. Run-On and Run-Off Control
  - a. The Discharger shall design, construct, and maintain the pad to prevent, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, and washout.
  - b. All portions of the pads shall maintain a minimum grade of 0.1% to the east and 0.2% to the south.

- c. The site shall be maintained to prevent any run-on. Run-off at the facility shall not adversely affect the beneficial uses of any downstream water bodies.
  - d. The Discharger shall maintain containment and control structures (e.g. berms, pads, and run-on/run-off control structures, filter strips) in good working order at all times regardless of whether or not composting is actively taking place.
4. The Discharger shall conduct an **annual** assessment of facility operations using rainfall, compost moisture content, and any leachate data. If leachate was discovered at the Facility during the year, or if the moisture in the compost reached its field capacity, the Discharger shall propose new or additional management practices that will be implemented during the next operating season to prevent the formation of leachate.
5. By **1 October** of each year, the Discharger shall conduct an annual inspection of the operation in order to assure that the site has been graded and prepared for the rainy season to eliminate and prevent erosion and to prevent ponding. All wet weather preparations shall be completed (including but not limited to: placement of manure, finished compost, and co-generation ash in bunkers and maintenance/repair of storm water containment and control structures) by **31 October**. The Discharger shall include a synopsis of these preparations in the Annual Report required under this Order.
6. The Discharger shall inspect storage and treatment areas for emergence of leachate, ponding, or surface failures such as cracking or subsidence. Such inspections shall be frequent enough to ensure compliance with this Order. If visible leachate, ponding, cracking, or subsidence of surfaces is observed, the Discharger shall immediately take necessary measures to maintain the Facility Specifications in this section, shall notify Regional Water Board staff, and shall include in the Annual Report a description of the damage, its location and extent, the date observed, and the date and nature of repair.
7. At closure, the Discharger shall execute the clean-closure plan that was submitted with the RWD. The plan states that at closure, all wastes, residual wastes and adjacent natural geologic materials contaminated by wastes, shall be completely removed from the facility and the soil and topography characteristics will be restored. Closure shall be conducted under the direct supervision of a California registered civil engineer or a certified engineering geologist.

### **C. Groundwater Limitations**

1. The discharge shall not cause underlying groundwater to contain waste constituents in concentrations statistically greater than background groundwater quality. For coliform, increases shall not cause the most probable number (MPN) of total coliform organisms to exceed 2.2 MPN/100mL over any 7-day period.

#### D. Provisions

1. The Discharger shall comply with these WDR and the attached MRP No. R5-2007-0088. A violation of the MRP is a violation of these WDR.
2. The Discharger shall comply with all items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements," date 1 March 1991, which are a part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)."
3. The Discharger shall file a Notice of Intent (NOI) with the State Water Board for coverage under the General NPDES permit for construction activities (NPDES General Permit No. 99-08-DWQ) prior to construction of the facility, and shall submit a SWPPP to the Regional Water Board in accordance with the requirements of the General NPDES Permit.
4. The Discharger shall file a NOI with the State Water Board for coverage under the General NPDES Permit for industrial activities (NPDES General Permit No. 97-03-DWQ) prior to operation of the facility, and shall submit a SWPPP to the Regional Water Board in accordance with the requirements of the General NPDES Permit.
5. The Discharger shall perform the following water quality study, and implement the required monitoring program according to the following time schedule. All reports shall be submitted pursuant to Section 13267 of the CWC, and shall be prepared by a California Registered Civil Engineer or a Certified Engineering Geologist.
  - a. **Within 30 days** of the adoption of this Order, the Discharger shall submit a workplan for the installation of groundwater monitoring wells; one well must be located upgradient of the composting area. Each monitoring well shall be constructed to yield representative samples from the uppermost layer of the uppermost aquifer and comply with applicable well standards.
  - b. **Within 90 days** of the adoption of this Order, the Discharger shall submit a Monitoring Well Installation Report that describes the installation of groundwater monitoring wells. The report should include: well construction, well development, well surveying, water sampling, and soil sampling. The water sampling will serve to establish background groundwater quality, direction, and flow of groundwater.
6. The Discharger shall submit reports required by this Order pursuant to Section 13267 of the CWC. Failure to submit the reports by the due dates shown may lead to enforcement action, including Regional Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order pursuant to Section 13268.

7. At least 140 days prior to initiating any change in the facility, its location, its operations, or the waste being processed, the Discharger shall submit a RWD amendment proposing and substantiating such change.
8. The Discharger shall maintain waste containment facilities and precipitation and drainage control systems, and shall immediately notify the Regional Water Board of any flooding, equipment failure, slope failure, or other change in the site conditions that could impair the integrity of waste containment facilities or of precipitations and drainage control structures.
9. The Discharger shall maintain legible records of the volume of green waste and agricultural waste discharged at the facility and the manner and location of discharge. Such records shall be maintained at the facility of the facility's office until completion of site closure. These records shall be available for review by representatives of the Regional Water Board and of State Water Board at any time during normal business hours.
10. If and when the Regional Water Board adopts a general order for green waste composting facilities, the Discharger may apply for coverage under that order, if applicable.
11. In the event of any change in ownership the facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.  
To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory and certification requirements on the Standard Provisions and state that the new owner or operator assumes full responsibility for compliance with this order. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. Transfer is subject to approval by the Executive Officer.
12. Road 27 Limited Partnership, as the owner of the real property at which the discharge will occur, is ultimately responsible for ensuring compliance with land disposal in accordance with these requirements. Compost Solutions Inc. retains primary responsibility for compliance with these requirements, including day-to-day operations and monitoring. Enforcement actions will be taken against Road 27 Limited Partnership only in the event that enforcement actions against Compost Solutions Inc. are ineffective or would be futile, or that enforcement is necessary to protect public health or the environment.
13. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

14. The Regional Water Board will review this Order periodically and may revise these requirements when necessary.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 22 June 2007.

Ordered by:

\_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_  
(Date)

6/27/2007  
MLR: sae

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0088

FOR  
COMPOST SOLUTIONS INC.  
AND  
ROAD 27 LIMITED PARTNERSHIP  
COMPOST FACILITY  
GLENN COUNTY

The Monitoring and Reporting Program (MRP) is required pursuant to California Water Code (CWC) Section 13267. The Discharger shall not implement any changes to this MRP unless and until the Regional Water Board adopts or the Executive Officer issues a revised MRP. Changes to sample locations shall be established with concurrence of Regional Water Board staff. All samples should be representative of the volume and nature of the discharge or matrix or material samples. The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with Standard Provision, Provisions for Monitoring (1 March 1991). The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in this MRP, shall be reported to the Regional Water Board and used in determining compliance.

GROUNDWATER MONITORING

Prior to collecting samples and after measuring the water level, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be representative of formation water. The wells shall be analyzed for the following constituents:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Depth to groundwater	To 0.01 foot (hundredths)	Measured	Quarterly <sup>1</sup>
Groundwater elevation	Above mean sea level, to 0.01 foot (hundredths)	Calculated	Quarterly <sup>1</sup>
PH	pH units	Grab	Quarterly <sup>1</sup>
Electrical Conductivity	umhos/cm	Grab	Quarterly <sup>1</sup>
Nitrate as N	mg/L	Grab	Quarterly <sup>1</sup>
Ammonia as N	mg/L	Grab	Quarterly <sup>1</sup>
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly <sup>1</sup>
Total Coliform	MPN/100mL	Grab	Quarterly <sup>1</sup>
Total Dissolved Solids	mg/L	Grab	Quarterly <sup>1</sup>
Total Organic Carbon	mg/L	Grab	Quarterly <sup>1</sup>
Standard Minerals <sup>2</sup>	mg/L	Grab	Annually

<sup>1</sup>Semiannually (Spring and Fall) after one-year submittal of required analyses.

<sup>2</sup>Standard minerals shall include, at minimum, the following elements/compounds: boron, calcium, chloride, fluoride, manganese, magnesium, iron, phosphate, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.



## COMPOST/STORAGE MONITORING

The Discharger shall conduct **weekly** leachate monitoring of all composting and storage areas to determine if leachate is present on the pad surfaces. If leachate is present, the estimated quantity and/or extent of the leachate and whether it was collected and returned to the compost shall be recorded. Leachate monitoring data shall be submitted **monthly**.

## REPORTING

The Discharger shall report field and laboratory test results in monthly leachate and quarterly groundwater Monitoring Reports (semiannually after the first year). The Discharger shall submit monthly, quarterly, and semiannual reports to the Regional Water Board **by the 1<sup>st</sup> day of the second month** following the monitoring period. The Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and units are readily discernable. A discussion of the monitoring results shall precede the tabular summaries. The Discharger shall submit the annual monitoring report to the Regional Water Board by **1 January** of each year.

Each annual report is to include the following information:

- a. A summary of the facility's overall state of compliance with WDR Order No. R5-2007-0088;
- b. A discussion of the monitoring results including a description of monitoring conducted, where the samples were collected, and a summary of the sampling protocol;
- c. Tabulated cumulative monitoring data;
- d. A copy of the laboratory analytical reports and chain of custody;
- e. Description of the types of feedstock, agricultural amenities, additives, and amendments used in the composting process during the operating period;
- f. A range of percentages of feedstock, agricultural amenities, additives, and amendments used in the composting process during the operating period;
- g. An estimate of the maximum volume, in cubic yards, of green waste compost and green waste material undergoing the composing process that were present at the facility during the operating period;
- h. Tabular format of all leachate, rainfall, compost moisture content, and production information collected;
- i. A discussion of any events that threatened public health, created a nuisance, threatened surface or ground water quality, or otherwise resulted in violation of

this Order addressed during the operating season, together with the Discharger's response to each such event;

- j. A brief description of preparations for the rainy season (including, but not limited to, site grading, erosion controls, and storage bunkers).
- k. Contact list of key operating personnel.

The results of any monitoring done more frequently than required at the locations specified in the MRP shall also be reported to Regional Water Board staff.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports requiring a technical interpretation shall be prepared by a California registered professional engineer or certified engineering geologist (or their subordinate) and signed by the registered or certified professional.

The Discharger shall sign a cover letter transmitting each monitoring report (monthly, quarterly, semi-annual, annual) that shall include the following certification:

*I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

The Discharger shall implement the above monitoring program on the effective date of this Order.

Ordered by:

\_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_  
(Date)

## INFORMATION SHEET

ORDER NO. R5-2007-0088  
COMPOST SOLUTIONS INC. AND ROAD 27 LIMITED PARTNERSHIP  
COMPOST FACILITY  
GLENN COUNTY

Compost Solutions Inc. owns a green waste composting facility in Glenn County. The facility is located approximately four miles south of Orland in Section 12, T21N, R3W, MDB&M. The property (Assessor's Parcel Number 024-030-031) is owned by Road 27 Limited Partnership. Compost Solutions Inc. submitted a 24 February 2006 Report of Waste Discharge (RWD) for the creation of a green waste composting facility on 28 acres that will produce approximately 30,000 tons of compost annually. Compost Solutions Inc. and Road 27 Limited Partnership are hereafter jointly referred to as Discharger.

The Discharger proposes to compost from April 1 to October 31 on approximately 21 acres of the site. The compost will be spread into windrows approximately 16- to 18-feet wide, six-feet deep, and up to 1,000-feet long. The site has capacity for approximately 20 rows or roughly 50,000 loose cubic yards (approximately 12,000 tons of finished compost per batch). The facility will implement the guidelines set by the National Organic Program. Therefore the compost will have a starting Carbon-Nitrogen ratio of between 25:1 and 40:1, maintain a temperature between 131 and 170 degrees Fahrenheit for a minimum of 15 days (rows are turned a minimum of five times), and maintain an optimal moisture content. Each row requires two weeks at the desired temperature and a minimum of three weeks of composting time, during which each row will be turned every three to seven days. Approximately two-and-a-half months are required for each batch of compost; the Discharger proposes to process two batches during the operating season and to compost without the production of leachate.

Two types of compost will be made at the facility, one that uses manure and one that does not. Windrows that will receive manure will be marked with evenly spaced ticks upon which loads of manure will be placed. Trucks delivering green material will be directed to the composting pad where they will dump their load at the end of a row. The dumped green material will be formed into a windrow. Gaps will be left between different batches of compost in the same windrow. If all windrows are formed, trucks delivering green material will be directed to dump in the feedstock storage area (a three acre area at the southwest corner of the site). The term "feedstock" includes green material, manure, and dairy bedding. Additives will be either placed in a row on the pad prior to the feedstock and incorporated into the feedstock during forming, or spread on top of the formed row and incorporated during tiling. Finished compost will be screened to remove oversized material and stockpiled for shipment. Composting equipment will be washed on a portable washdown pad constructed of heavy duty plastic to contain wash water. The wash water will be allowed to evaporate or used as an additive for the compost. The wash water will not discharge directly to ground surface.

Green material will consist of green waste from municipal and/or commercial collection operations and wood chips from local orchards. The Discharger also proposes to accept agricultural commodities, including dairy manure and bedding from local dairies. Other additives to be mixed with the feedstock or active compost will include water, clay, co-generation wood ash, bone char (high calcium and phosphorus content), potassium sulfate, and dry urea. The additives may be added up to the specified percentages by weight:

co-generation ash (5%), bone char (10%), potassium sulfate (10%), and dry urea (5%). Post-composting amendments may include fertilizers and/or lime and gypsum to adjust the pH. The addition of post-composting amendments will be added prior to sale and tailored to the buyer's specifications.

During the non-operating season, finished compost, manure, and co-generation ash may be stored on site. The compost, manure, and co-generation ash will be placed in a 'bunker' constructed of 1,000-pound straw bales and lined and covered with plastic sheeting. The bottom liner will be covered with approximately six inches to one foot of soil. The soil barrier will prevent the sheeting from tearing during turning and removal of the stored materials. The sheeting covering the piles will be weighted with sandbags or tires in a grid pattern to prevent wind damage. During dry weather periods, the stored materials will be turned to prevent excess heat build-up, and then recovered. Manure must contain no more than 50 percent moisture by weight for acceptance at the facility.

The upper one foot of soil in the pads (composting and storage) will have a permeability of no greater than  $5 \times 10^{-6}$  cm/sec. The existing soil will be ripped, moisture conditioned, and re-compacted to 90% of maximum dry density. The soil will be compacted by (1) clearing the roots and vegetative material, (2) ripping and cross-ripping or disking the upper twelve to fourteen inches, (3) conditioning the soil to 1% to 3% above optimum moisture content, (4) placing the soil in maximum eight-inch lifts (5) compacting the soil with a self-propelled pad-foot or towed sheep's foot, (6) smoothing the surface with a grader, and (7) smooth-drum rolling the surface. To verify remolded permeabilities, one proctor curve and one four-inch undisturbed permeability test (EPA 9100, or equivalent) per every soil type of soil encountered (minimum of two) and one proctor curve per every week of compaction work or every 50,000 cubic yards of soil compacted (minimum of one curve per every 4.6 acres) will be performed. Soil density and moisture will be tested by a soil-testing technician using the nuclear-gauge method (ASTM D2922/3017). Testing at a frequency of one test per every 0.5 acres compacted is required.

The area in which the composting will occur is located from one to 10 feet above the surrounding terrain, therefore, there is no run-on. The completed facility will drain 0.1% to the east and 0.2% to the south. Average annual rainfall at the facility is 19.42 inches. The average potential evaporation is 52.08 inches per year. Depth to groundwater in the vicinity of the site is estimated to be approximately 15 feet below ground surface (bgs) during a wet winter and over 40 feet bgs during the summer. Groundwater flow is generally to the southeast at an approximate gradient of 0.0017 feet/foot. Groundwater was sampled from a well approximately two miles northwest of the site. Depth to groundwater was unknown. Most parameters were within water quality goals, however, results indicated elevated levels of nitrate (31 mg/L). The source of the elevated nitrate is unknown but may be due to agricultural practices in the area. It is not anticipated that the proposed operation will contribute to the elevated nitrates because of the safeguards proposed in the RWD (compaction of pads to  $5 \times 10^{-6}$  cm/sec; composting during the dry season; composting without the production of leachate; installation and monitoring of groundwater monitoring wells; and storage of finished compost, manure, and co-generation ash in lined/covered bunkers during the wet season).

The Discharger proposes to install three groundwater monitoring wells at the facility, two downgradient and one upgradient, and to sample each well quarterly for the first year and semi-annually thereafter.

Agricultural ditches and seasonal ponds that ultimately drain to the Colusa Basin Drain surround the site. The beneficial uses of the Colusa Basin Drain designated by the Basin Plan are agricultural supply; contact recreation; canoeing and rafting recreation; warm water habitat; cold water habitat (potential use); warm migration; warm spawning; and wildlife habitat.

Storm water discharge from the site will increase after construction of the storage and composting pads due to increased impervious area. To control storm water discharge, four-acres of vegetative filter strips, a gravel berm, and a soil berm will be installed. The purpose of the gravel berm is to decrease the velocity of storm water on the site and to control the discharge of storm water from the site. The berm will be located in the southeastern portion of the site. It will be constructed to a height of one foot and a total length of 525 feet, at an angle perpendicular to storm water flow at the site. The soil berm will extend 200 feet to the north of the gravel berm (on the east end); 200 feet is the calculated backup of storm water due to the gravel berm during a 100-year 30-minute storm event. The purpose of the soil berm is to contain excess runoff that is detained by the gravel berm. Grass will be planted in the vegetative filter strip areas. The grass will serve as a filter strip, which will slow the runoff velocity and filter any sediment or nutrients that may be present in the storm water. A filter strip will run along the eastern border of the site (minimum of 20-foot wide). The southeastern portion of the site will also have a large vegetative filter strip on approximately 3.5 acres. The pre-construction storm water peak discharge rate is 23.20 cubic feet per second (cfs). The post-construction storm water peak discharge rate will be 32.98 cfs. The gravel berm will reduce the storm water runoff velocity by 11.89 cfs if the permeability of the berm is no faster than 1.73 cm/sec.

As allowed by Water Code Section 13269, the Regional Water Board formerly regulated green waste composting facilities under Resolution No. 96-031 *Conditional Waiver of Waste Discharge Requirements for Composting Operations* (hereafter waiver). In 1999, passage of Senate Bill 390 modified Water Code Sections 13269 and 13350 to sunset all existing waivers of WDR as of 1 January 2003.

Staff of the Regional Water Board have prepared draft tentative general Waste Discharge Requirements (WDR) for green waste composting facilities; however, it is currently under internal review and has not yet been considered for adoption. Since the proposed facility is new, a RWD had not been previously submitted to the Regional Water Board for coverage under the waiver, and since general WDR for green waste composting do not yet exist, individual WDR have been written for this facility. In preparing this Order, the language in the draft tentative general WDR has been considered. This Order has been written to be as consistent as possible with the requirements of the draft tentative general WDR so that if and when they are adopted by the Regional Water Board, this facility can elect to apply for coverage under the general order if they meet its specifications. Findings in this order related to waste classification and the applicability of the Title 27 to a green waste composting facility

are based on those in the draft tentative general WDR. If the State Water Board and/or Regional Water Board ultimately finds that Title 27 is applicable to green waste composting facilities, then changes to waste containment features may be required at this and other existing green waste composting facilities and these WDR may be rescinded and a new order incorporating Title 27 requirements adopted for this discharge. Some of the requirements of this Order are more stringent than those in the draft tentative general WDR. This is due to site-specific considerations as well as proposals by the Discharger in the RWD. For instance, the RWD proposes installing groundwater monitoring wells and compacting the upper one foot of soil in the composting and storage areas to a permeability of no faster than  $5 \times 10^{-6}$  cm/sec.

The Discharger has proposed many safeguards, including but not limited too, compacting the composting and storage pads, composting only during the dry season, and composting to minimize generation of leachate. Therefore maintaining compliance with these WDR will result in compliance with the antidegradation analysis. The Facility is of benefit to the State because a large portion of the materials that will be composted would otherwise be disposed of in a landfill. The antidegradation analysis and best practicable treatment and control are discussed in detail in the WDR.



