

SOUND AGRICULTURAL PRACTICE
Opinion Number 98-2

SUBJECT: Request for an opinion pursuant to Section 308 of the Agriculture and Markets Law as to the soundness of a certain agricultural practice conducted by Louis B. DeMario Enterprises, Inc. in the Town of Sullivan, Madison County and the Town of Verona, Oneida County.

REQUESTOR: Mr. Louis B. DeMario
1174 Fyler Rd.
Kirkville, New York 13082

Preliminary Statement

On August 14, 1997 the Department received a request from Louis DeMario to review the soundness of an agricultural practice conducted by Louis B. DeMario Enterprises, Inc. Mr. DeMario requested that the Commissioner issue an opinion as to the soundness of his composting of bio-solids and the land application of the compost for the production of sod.

Pursuant to this request, the Department conducted a sound agricultural practice review of the composting and the land application of the bio-solids. On September 24, 1997, Department employees Matt Brower, Agricultural Resource Specialist, and Robert Somers, Chief of the Agricultural Protection Unit, visited the DeMario property to gather information on the practice in question.

Information Considered in Support of the Opinion

1. The office for Louis B. DeMario Enterprises, Inc. is located on Lakeport Road in the Town of Sullivan, Madison County. The composting facility is located on Jug Point Road in the Town of Verona, Oneida County. The composted bio-solids are applied to approximately 34 acres of land on Lakeport Road in the Town of Sullivan, Madison County. According to the Department's files, the land where the composting facility is located in the Town of Verona is in Oneida County agricultural district #32. The property in the Town of Sullivan is not located in an agricultural district. However, according to the assessor's office for the Town of Sullivan, the property received an agricultural assessment in 1997.
2. Mr. Brower reported that the structure used for the composting is a metal sided barn with a concrete floor. The building has six composting bins. An Operation and Maintenance Manual was prepared for the composting facility by PLS Engineering, P.C., in accordance with the Department of Environmental Conservation Part 360

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regulations. According to the manual, the material being composted is waste water sludge from the City of Oneida. The sludge has a minimum of 20% solids. The facility receives an average of 4.8 cubic yards of sludge per day. The manual states that the aerobic static pile composting method is used. Wood chips are added to the sludge as a bulking agent. Blowers are used to aerate the piles.

3. According to the manual, the sludge is placed inside the barn by City of Oneida dump trucks. Approximately 6" to 8" of bulking agent is placed on the concrete floor in the bottom of a bin before the compost pile is constructed. The manual states that sludge is mixed with bulking agent at a ratio of 1 part sludge to 1.3 parts bulking agent. The mixture is then placed on top of the layer of bulking agent. The mixture is added to the bin until a pile approximately 25 feet long, 11 feet wide, and 6 feet high is formed.
4. The manual indicates that it takes approximately 5 days to construct a pile. The temperature of the pile is monitored during construction and, if necessary, the blower is run to keep the temperature of the pile below 55⁰ C. According to the manual, once the pile is completed, it is covered with approximately 6 inches of bulking agent to insulate the pile.
5. The manual states that the temperature of each pile is recorded daily for the composting period, which is approximately 25 days. The blowers are used to keep the temperature of the pile between 55° C and 65⁰ C for at least three days during the composting period. An average temperature of 45⁰ C is maintained for at least 14 days during the period. The minimum allowable temperature during the 14 day period is 40⁰ C.
6. According to the manual, once the composting period is completed, the compost is cured in a pile for 25 days. The curing process takes place in a separate barn. The bulking agent is separated from the compost at any time either during or after the curing. According to Mr. DeMario none of the sludge, bulking agent, or compost is left outside the buildings at any time.
7. The manual identifies several parameters that the compost must be tested for to meet the requirements of the DEC Part 360 regulations. The manual indicates that a sample of the compost is taken each month and the samples are submitted to a lab for testing semi-annually.
8. At the time of the Department's visit all of the composting bins were full and some material was curing in the other barn. Mr. Brower reported that no sludge or compost was observed outside the buildings. He also indicated that the property was generally clean and no offensive odors were detected inside or outside the buildings. According to Mr. Brower, there was no sign of leachate inside or outside the buildings.

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9. Mr. Brower and Mr. Somers observed the application site in the town of Sullivan. No compost was being applied at that time. According to Mr. DeMario, the compost is hauled to the application site with dump trucks and is spread on the fields with a land leveler. Mr. DeMario stated to Department staff that the compost is applied at a rate of approximately 8 to 10 tons per acre. He also stated that all of the compost generated at the facility is used on his sod fields.
10. Information provided by Mr. DeMario indicates that the rate of phosphorus application that results from the use of the compost is relatively high. On August 13, 1998 Mr. Brower visited the DeMario property again to observe the site where the compost is applied. Mr. Brower reported that given the topography of the site and the location of the drainage ditches, the risk of runoff and phosphorus loss from the site appears to be minimal. Also, the DEC part 360 regulations do not contain any guidelines concerning the rate of phosphorus application relative to the use of the compost.
11. The Department mailed a letter to eleven landowners adjacent to the property where Mr. DeMario's composting facility is located or the land where the compost is spread to inform them of the request for an opinion and offer them an opportunity to comment on the practice. Two of the landowners who own property adjacent to the composting facility responded with comments relative to the composting. The Department also received two other letters commenting on the facility, one from the Town of Verona Supervisor and one from a person living in the vicinity of the composting facility.
12. A neighbor living next door to the composting facility alleged that Mr. DeMario has been operating over-weight trucks on Jug Point Road and has failed to meet the DEC guidelines for a composting facility. The neighbor did not provide any information concerning the DEC guidelines that he alleged were not being met. According to the neighbor, the facility generates a strong odor approximately thirty days during the year. The neighbor also stated that he does not object to Mr. DeMario using the site in the Town of Verona for composting sludge, as long as the process is conducted according to DEC rules and as long as the compost is not landspread on the DeMario property in the Town of Verona.
13. The Department received a letter from a landowner adjacent to the composting facility. This neighbor stated that until the past several months, strong odors were being generated by the composting facility. According to this person, he has noticed little or no odor in the past several months. The neighbor indicated that he has taken water samples and was concerned about the water quality in the area. During a phone conversation with the landowner on July 31, 1998, he indicated that he took the water samples because of milk by-product application and he thinks that practice is causing water quality problems, not the composting operation.

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14. The Department also received comments from Maurice Deeley, Supervisor for the Town of Verona. Mr. Deeley stated that the Town Board has agreed that the odor being generated at the composting facility is "extremely offensive." Mr. Deeley also expressed concern about the "possibility of ground water contamination." According to Mr. Deeley, the Town Board is opposed to any expansion of the facility.
15. The Department received a letter from another landowner in the vicinity of the composting facility. This person alleges that the drainage from the facility is causing water quality problems and is resulting in high metal levels in the soil. During a phone conversation with the landowner on July 31, 1998, he indicated that he thinks that the milk by-product application practice, not the composting operation, is causing water quality problems. The complainant also alleges that the waste water sludge is being delivered to the site at times other than the "stated business hours."
16. On May 1, 1998 Mr. Brower contacted Mr. Robert Senior, P. E., an Environmental Engineer for the Department of Environmental Conservation Region 6. Mr. Senior indicated that he has been the staff person responsible for monitoring the activities at the composting facility. He stated that the facility is currently composting 1,100 wet tons of sludge per year. Mr. Senior stated that he inspects the facility at least 2 or 3 times a year and tries to inspect it 4 times a year if possible. According to Mr. Senior, Mr. DeMario was having trouble maintaining the required 60⁰ C temperature during the cold winter months, but this has not affected the composting process and has not resulted in an odor problem.
17. Mr. Senior stated to Mr. Brower that there are generally no problems with the facility and he has not observed any leachate or odor problem as a result of the composting process. He also stated that all the test results for the sludge have met the DEC requirements. According to Mr. Senior, he has investigated the complaints concerning sludge being hauled into the facility after the allowed hours and he has found no evidence that this is occurring. Mr. Brower reviewed a copy of Mr. Senior's report following a visit to the facility on May 9, 1997. The report indicated that there were no violations, but he was concerned about the accuracy of the information in the daily log that was being kept. According to Mr. Senior, an inadvertent error was made in the daily log, but the problem has been resolved.
18. On May 11, 1998 Mr. Brower received a copy of Mr. Senior's report following a visit to the facility on May 6, 1998. The report indicated that there were no violations and "no objectionable odors were observed."
19. On May 19, 1998 Mr. Brower contacted Mr. Senior to discuss the application rate of the compost on the turf farm. Mr. Senior indicated that because the material being produced by Mr. DeMario meets the requirements for class I and/or class II compost, the application rate of the compost does not have to be based on the nutrient requirements of the crop being produced. The Part 360 regulations do not contain any restrictions on the rate of application of class I and/or class II compost since they are

no longer considered solid waste if they meet the applicable requirements of the DEC composting regulations [6NYCRR 360 1.15(b)(2)].

20. During a phone conversation on July 31, 1998, Mr. Senior stated that Mr. DeMario is not required to conduct surface and ground water sampling at the composting site. Mr. Senior also indicated that it is his understanding that any water quality concerns that have been raised are relative to milk by-product application at the site, not the composting operation.
21. The *On Farm Composting Hand Book*¹ identifies several benefits that result from adding compost to the soil. The benefits listed include improved soil aeration, increased water-holding capacity, and a reduction in soil bulk density. According to the *Handbook*, when compost is being used as a soil amendment, the application rate should not exceed 50 dry tons per acre. The *Handbook* states that "The harvesting of sod removes 20-25 tons of soil per acre per crop. Amending the soil with 50 dry tons of compost per acre between crops is an effective means of maintaining soil productivity." The *Handbook* also identifies several steps that can be taken to reduce odors from composting operations. According to the *Handbook*, one important step is to start the raw material composting as quickly as possible. The *Handbook* also states that materials that generate strong odors should be mixed with amendments to increase the porosity of the mixture.
22. Peverly and Gates² discuss the results of a study related to the land application of sludge compost. According to Peverly and Gates, the land application of the compost to a crop field had no negative impact to the soil and water. They also state that any increase in soil metals remained in the top soil layer and increased levels of Zn and Ni in the soil did not impact crop yield or water quality.

Findings

Based upon the facts, information and circumstances described above, and in consultation with the Advisory Council on Agriculture; the New York State College of Agriculture and Life Sciences at Cornell; the USDA Natural Resources Conservation Service; and the Sound Agricultural Practice Guidelines³ by which agricultural practices are evaluated, I find the following:

¹ On-Farm Composting Handbook. 1992. Robert Rynk, editor. NRAES-54 pp. 59-82.

² Peverly, John H. and P. B. Gates. "Utilization of Municipal Solid Waste and Sludge Composts in Crop Production Systems." *Sewage Sludge: Land Application and the Environment*. Ed. Clapp, c., R. Dowdy, and W. Larson. Soil Science Society of America, Inc., 1994. 3-5.

³ On November 1, 1993 the NYS Advisory Council on Agriculture published its report entitled *Protecting the Right of New York Farmers to Engage in Sound Agricultural Practices*. The Council developed guidelines to assist the Commissioner of the Department of Agriculture and Markets in determining what is sound pursuant to Section 308 of the Agriculture and Markets Law. The Guidelines state that the practice 1) should be legal; 2) should not cause bodily harm or property damage off the farm; 3) should achieve the results intended in a reasonable and supportable way; and 4) should be necessary. The sound agricultural

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1. The composting of bio-solids is an activity that must comply with New York State Department of Environmental Conservation 6NYCRR Part 360 regulations. According to DEC reports, the bio-solids composting conducted by Mr. DeMario has met all of the requirements of the Part 360 regulations, and Mr. DeMario has not been cited for any violations.
2. No evidence of bodily harm or property damage was found. Some of the neighbors allege that the composting facility is operating in violation of some of the DEC permit conditions and the Supervisor for the Town of Verona expressed concern that the facility could cause water contamination. Information provided by DEC indicates that the facility is being operated in compliance with the part 360 regulations and the Department's investigation revealed no leachate escaping from the composting facility.
3. The composting of bio-solids is an accepted method of providing a source of organic matter, as well as nutrients for sod production. Mr. DeMario is applying 8 to 10 tons of compost per acre, as compared to a recommended maximum application rate of 50 tons per acre. Although the rate of phosphorus application appears to be high, the potential for phosphorus loss from the site appears to be low and no evidence of phosphorus loss from the site was found.
4. The application of organic matter, as well as plant nutrients is necessary for sod production. If the land application of the composted bio-solids was discontinued, Mr. DeMario would have to find another source of organic matter to meet his demands for sod production.

Conclusion

Based on the foregoing, and in accordance with Section 308 of the Agriculture and Markets Law, I conclude that the composting of bio-solids and the land application of the compost for the production of sod as described above is sound.

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Date


Donald R. Davidsen, D.V.M.
Commissioner

practices guidelines recommended by the Advisory Council on Agriculture are given significant weight in assessing agricultural practices.