

Appendix A

Compost Facility Assessment Report

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Producers Compost

Enclosed is the trip report summarizing our recent site visit to your composting facility. The trip report updates our report of two years ago, focusing on process issues, as they relate to compost production and quality, as well as market development issues. Please review our comments and call me so we may discuss them further.

ORIGINAL REPORT – 5/8/03

The facility started receiving manure in January of 2001 and the site is surrounded by the owner's property. The facility consists of a graded soil pad extending over a reported 44-acre area. Although, upon further review, it appeared that there was actually more land in actual use. Little activity was occurring on the site when we visited, as we were told that the operation reportedly had incurred a substantial financial loss. This situation caused Producers to release their two full time operators, leaving Jef as the lone operator on site trying to manage both the production and marketing of the compost. The facility had not been receiving manure for several months. When in operation, the process consisted of 186 windrows, which were turned every 4 days, over a 25-28 day period, using a 20-foot track driven Scarab windrow turner. Temperatures were reportedly monitored at 4 points per pile, every other day during this period, in order to maintain the temperatures above 131°F. However, no records/monitoring data was provided to us during the site tour. Two front-end loaders (FEL's) were also available on site, as was a water truck. Screening is done using a rented McCloskey Brothers ½" trommel screen, when needed. No screen was on site at the time of the visit. Many larger windrows (surge piles), created by the FEL's, were also located on site. Jef identified moisture as the main operational challenge. Odors and vectors were not a problem, but the weather was cold (30°F's) and no operational activities were occurring. Jef estimated that between 180,000 and 200,000 cubic yards of composted/stockpiled manure was on site. (This was not independently verified due to time constraints of the visit). He estimated that it cost them \$3.50-\$4.00/CY to produce compost, and another \$1/CY to screen it.

Jef estimated that approximately 80,000 cubic yards (CY) of compost were sold and moved off of this site in 2002 at a price of \$9/CY. They will sell product for \$9.00-\$9.50/CY, depending on the size of the order (project). Their largest market, so far, has been TX DOT projects. They try to produce a product possessing 20-30% moisture content and bulk density of 1450 lb/CY. They typically ship in 30CY truckloads, and they appear to have several truckers lined up to ship their product. Producers have produced no product literature (promotional, instructional) thus far, but have run some radio ads locally to promote the product to farmers. They also had a deal set up with a fertilizer company to sell compost to farms for a price of \$15/CY, applied. They have made no real effort to market to non-agriculture markets. Jef stated that they 'need to hire a compost salesperson'.

BIGGEST CHALLENGE – The facility did not appear to be very active. The windrow turner tracks were rusting, and no screening, windrow turning or product movement was occurring at

the time of the visit. Jef stated that he did not expect the operation to be funded further, until income from product sales is realized. It was obvious that Producers needed to start actively marketing their product, or hire someone else to do so.

UPDATE – 4/7/05

Producers have been selling a great deal of compost to TX DOT; although things had been slowed recently because of rains. They have been selling EC compost and GUC, but CMT has been their biggest seller to TX DOT. CMT for 'blending on site' to be precise. They are blending bulking agent (e.g., wood, pushdown feed and cotton burr bedding) into their compost in order to increase its organic matter content to 25% and lower its pH. They do much of the compost hauling themselves, but also contract out some hauling. They can usually haul 32 yd³ of compost per load, and a typical price is \$15-20 yd³, delivered. Producers is concerned that TX DOT will no longer give priority to manure compost. They are also concerned about changes to the manure and TX DOT hauling grants. They feel that both are still necessary. They stated that they probably have 100 K yd³ of compost products on order from TX DOT, and a total of 250-275K yd³ on-site. They are working hard on developing backhauls for bulking agents and compost in order to be more competitive. They also stated that the manure they are receiving appears to be a lot cleaner than in the past.

Bosque River Compost

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ORIGINAL REPORT – 5/8/03

This 5-acre site began receiving manure in March 2002. Dwayne and one other operator run the site. They have a clay-surfaced composting pad that is well graded to a holding pond for runoff collection. Approximately 5-7 windrows are on site at any given time. Each windrow is approximately 20 feet wide at the base, 12 feet tall, and 100 yards long. Two of the seven windrows appeared to be several months old, with no recent turning. Equipment includes a Trojan 15Z loader, equipped with a 10 CY bucket that is used for pile building, turning, screening and product load out activities. A skid steer loader is used to grade the site in between windrows. A rented ½" McCloskey trommel screen was on site at a cost of \$2,000 per week. Mr. Wolf estimated that approximately 10% screening 'overs' are generated from the clumps and the rocks found in the manure they receive. Pile turning is done daily to assist in drying the material and pile temperatures are reportedly measured daily after temperatures rise above 131°F. However, we did not witness any temperature monitoring while we were 'on site'. No odors were detectable on site, except those coming from the poultry operation on the adjacent property. Dwayne claims that he achieves a 50% volume reduction during composting and that he sells compost for \$8/CY. It was estimated that about 17,000 CY of manure was currently being composted on site.

He primarily sells screened compost, but has started to produce some topsoil/compost blends. He would like to see compost sales prices at \$10-12/CY. Dwayne indicated that he has sold about 3,600-4,000 CY of compost to TX DOT and another 2,000CY for other uses (sold

6,000CY in 02'). He usually ships 30CY truckloads (25 tons) of compost for a delivered price of \$12-\$14/CY. They appear to have several truckers lined up to ship their product. Aside from placing ads in some local newspapers, Wolf has not applied much effort towards compost marketing. They have interest in promoting their compost product to their nursery customers.

BIGGEST CHALLENGE – Moisture reduction from the wet incoming manure is the biggest processing concern. Dwayne has had discussions with the dairies he hauls from regarding them drying their manure through better on-site operational practices prior to the material being delivered. Low organic matter content in their finished product is also a major concern. Wolf also needs to actively market their product to improve sales volumes.

UPDATE – 4/7/05

Bosque River Compost had primarily been selling to Scotts/Hyponex, but recently lost this customer to a composter outside of the watershed (\$0.50/yd³ cheaper). He is trying to cut a deal with another large compost bagger. He does not sell much to public entities, but has sold some to TX DOT contractors. They don't sell any product into the DFW Metroplex. Marketing is still their biggest issue.

The Bosque River site is now 15 acres in size and is very well kept. He is receiving cotton burrs with the manure he is getting, and the overall quality of the manure has improved. They are having the dairies pile wet manure onto their bedding when they stockpile it. This makes it dryer when they receive it. Bosque River has had a few dairies pay them to accept manure. Bosque River stated that the public sales rebate program hasn't helped them that much. They think that rebates should be directed at the composters, and not the dairies or end users. They also stated that they don't understand how all of the existing rebate programs even work. They believe that the programs need to be less complicated, and the user related programs should be made more available to private companies who want to use the product.

Dairy Cow Compost

Enclosed is the trip report summarizing our recent site visit to your composting facility. The trip report focuses on process issues, as they relate to compost production and quality, as well as market development issues. Please review our comments and feel free to call me if you have any questions or comments.

Operations – This composting site was permitted in September, 2004 and operates on 13 acres (9A currently in process). The site is the old Erath Earth site. When Dairy Cow Compost took the site over, it possessed large volumes of old manure. Dairy Cow Compost primarily receives manure from the EXCEL Dairy and they use wood and pushdown feed as a bulking agent. The facility operates with one full time person, and their primary equipment is a large FEL and a large deck screen. They process their product by blending the new manure with bulking agent, then windrow composting it for approximately 6 months. Depending on the product, they then may blend in some old manure. They have an arrangement with a wood grinder (Grind & Green) which provides them with green waste (for bulking agent) and helps them sell/haul finished compost. They are considering a site expansion to add 20 acres. They own 3 trucks and haul their manure themselves.

Marketing – They screen their product through a 5/8 inch deck screen and have to blend in green waste in order to produce an acceptable TX DOT compost. The old old manure on the site is sold as topsoil. 90% of the product they sell goes to TX DOT. Their biggest TX DOT products are: #1 GUC, #2 CMT and #3 EC compost. Dairy Cow Compost has primarily received TX DOT projects in the DFW. They stated that they get 40 yd³ of compost on a load, but sell it as 36 yd³ (overloading). They are also selling a little product to area landscapers (\$15 yd³) and homeowners (\$18 yd³). He stated that they need a salesman to further expand their marketing efforts. The hope to develop landscape yards for product in DFW, Austin and San Antonio with Grind & Green's help. These landscape yards would help in product distribution. Dairy Cow Compost are also interested in bagging in the future. They are in the USCC's STA Program.

BIGGEST CHALLENGE – 1) Meeting the 25% organic matter spec for TXDOT – try have to blend materials to do so, 2) getting rid of the old manure pile, and 3) getting the compost dryer so they can ship more per truck..

Organic Residual Reclamation

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ORIGINAL REPORT – 5/8/03

This 15-acre site has been in operation for two years. As manure is received, it is placed directly into tall windrows using front end loaders (FEL's), then is turned 5 times over a 2-week period. Piles are monitored for temperatures, but no data was available for review during the site visit. Two FEL's, with 5 CY capacity buckets, were on site, as was a rented trommel screen. A truck scale was operating at the scale house across the street from the compost site. There was significant loading activity on site during our site visit, with up to 6 trucks on site at any one time being loaded with screened compost (for offsite delivery). Windrows were being moved and re-stacked and screening was taking place with a rented McCloskey 621 trommel screen. Two operators, a full time marketer and a scale house operator are involved in the operation, as well as part-time supervision by Israh Cortez. Significant stockpiling of manure was noticed, with well over 10,000 CY of undisturbed and piled manure on site in a surge pile. Minimal odors were noticed on site.

Their finished compost reportedly weighs between 1,100 and 1,400 lbs/CY, and their typical moisture content, at time of shipping, is 30%. They produce both a 1/2" and 1" screened compost, as well as some blended topsoil and erosion control mix. Reportedly, 16,000 CY per month of compost alone was marketed from this facility in 2002. Their largest market is TX DOT projects, but are expanding their sales efforts to/through wholesale/resale operations. They also sell a little compost into agriculture, and hope to expand that market. They contract ship all of their product, and showed great interest in receiving compost usage information/research.

BIGGEST CHALLENGE – None noted.

UPDATE – 4/9/05

ORR now operates on a new site (old site was Erath Earth #2). They stated that their compost is typically 45-50% moisture and weighs 750 to 1,150 lbs/yd³. They now use a Viper deck screen which screens their compost down to a ¼". Their principal markets are landscapers, topsoil blenders, nurseries and a materials company selling and blending products for the athletic field and golf markets. They also sell 25-30% of their product to TX DOT (their coarser material). They have also been very successful in selling to municipal entities throughout the region. They are not in favor of the manure hauling rebate program.

Gustine Compost

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ORIGINAL REPORT – 5/8/03

This is a 10-acre site that was created from graded soil. It has been receiving manure since March 2002. A very large surge pile of manure (45,000 CY in size?) was located on site, as was approximately 10 windrows of compost. No front-end loader (FEL) was on site due to maintenance problems (L150C Volvo, with a 6 CY bucket). This FEL was being repaired. Randy indicated that a second W26 Case loader, with a 4 CY capacity bucket, was 'on order'. A windrow turner was on site, but not being used. It was reported that a ½" trommel screen is leased when needed for screening. Randy stated that 41,000 CY of manure had been received at the site since it began operation last year, however this number seems low based on the size of the manure surge pile and compost windrows. In addition, fresh manure was being delivered to the site with over 1,000 CY of manure dumped on the ground waiting to be placed into windrows. Randy indicated that he hoped to be able to turn the windrows with a FEL every 5 days when he gets his new FEL, and the old FEL is returned. Randy indicated that they used to take wet manure, but that they now only receive "drier" manure from the dairies. His manure also appeared to contain less rock than manure found at many of the other composting sites. No odors were detectable on site.

He is producing only a ½" screened compost product thus far, and estimated that he sold 2,000 CY in 2002. He is charging \$8.50/CY (FOB) for the product, but has had to reduce his price to compete for a TX DOT project in the DFW area (shipping costs). They have also shipped product to a TX DOT project in Killeen. They hope to produce erosion control compost in the future. Randy's partner stated that he used some of the compost on growing corn silage, with good results, and would like to sell compost to area farmers. Their marketing activities have been limited up to now.

BIGGEST CHALLENGE – Moving the remaining stockpile of manure and begin to consistently operate and monitor the compost process. They also need to start actively marketing their product.

UPDATE – 4/7/05

Gustine is involved in both the manure hauling and TX DOT transport rebate programs. He is interested in seeing the TX DOT organic matter and pH derivation continue and he still receives manure under the manure hauling rebate program. Their primary customer is TX DOT, and they

are selling to projects allowing 10% organic matter in the compost. They primarily sell compost to TXDOT contractors as CMT. Randy stated that some TX DOT contractors have complained that they were getting 'shorted' on their loads from some of the composters. If he needs additional compost, he purchases it from ORR, who are also renting him their trammel screen. They are selling to no other public customers. However, Gustine are trying to sell compost to farmers under the farm use rebate program.

Gustine stated that he still has an old old pile of manure on his site. That is the material sold as CMT. He is also blending some lab animal bedding into his product to improve the organic matter content. Gustine now turns their compost piles with a SCAT compost turner.

Erath Earth

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ORIGINAL REPORT – 5/8/03

This facility is a long and narrow 6-acre site that has been used to process manure for 6 years. The site is steeply sloped down its length to a holding pond. Equipment includes a CAT 938G front-end loader (FEL) and a home-made ¾" punch plate trommel screen. The facility is operated by Mr. Cortez and his two sons, on a part time basis. Last year he received approximately 10,000 CY of manure at the site. Mr. Cortez stated that he currently has about 6,000 CY of compost on site. Half of this is in windrows and the other half is in an old surge pile. He cannot receive a general permit at this site because he does not have the 150' buffer space between his operation and one abutting property owner. He does not use a windrow turner, as there are too many rocks in the manure to turn it with a conventional turner. Piles are turned, then stacked as tall as the FEL will allow. He stated that they are using the static pile composting method, but the piles of material as high may be too high for efficient composting. After 60 days he rolls the large piles and considers the material complete. It is uncertain whether temperatures are monitored and documented during active composting. No monitoring data was available for our review during the site visit.

Mr. Cortez stated that he sells compost for \$12 per CY and has well established outlets in local nurseries and lawn care shops in Austin. He tests his product through Texas Plant and Soil Lab (Chandler, TX) and is unable to sell any compost to TX DOT because he cannot show that the product meets PFRP. He also produces a compost tea that was used at the Governor's mansion, as well as some nursery media (by blending compost with ground wood and decomposed granite). Their main market for the compost is 'south' of the region, into Waco and Austin. Their product is sold by two large wholesale yards, which sell the product to landscapers. They do not currently sell into agriculture, but believes that it may have potential (coastal Bermuda grass). They appear to have trucking set up, and can, on occasion, haul their product using 'backhauls'.

BIGGEST CHALLENGE — Mr. Cortez indicates that the manure he receives is already heating readily from the stockpiles on the dairy sites and that the lack of energy is sometimes a problem in achieving high temperatures on his site. This did not seem to be a problem at other sites. Markets appear to be well established.

UPDATE – 4/7/05

Erath Earth is not a part of the manure hauling or TX DOT transportation rebate programs. He pays to have manure hauled into his facility. However, he still believes that if these programs end, the regional composts will suffer. They have been proactive in selling compost for horticultural applications. They are selling locally, as well as in Austin and San Antonio. Erath Earth sells compost and compost blends to greenhouses growers (vegetable transplants) and sales to organic farmers have also grown. Sabino is involved with organic agricultural organizations in the area. They also bag their potting mix in 20 and 40 quart bags for resale through garden centers. They also are selling the mix in 2 yd³ bulk bags (at \$65/yd³) on a pallet.

O’Neal’s Compost

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ORIGINAL REPORT – 5/8/03

This 30-acre site is graded soil and has been processing manure for 2 years. Equipment includes a track loader, 3 front-end loaders (FEL’s), a tractor driven rototiller and a ½” vibratory deck screen. Two full time employees and an office clerk are at the site. Approximately 45,000 CY of old manure was piled on site in a surge pile, as well as in several active windrows composting. Material is stacked in high windrows with a FEL and O’Neal stated that piles are turned every 3 days for about 30 days, while temperatures are monitored. O’Neal claimed that pile temperatures in the 130°F -170° F range are common, however, no records were provided for our review.

O’Neal also has a manure spreader for applying compost onto farmland. They charge \$40/acre to spread 3-4 tons of compost. He sells compost for \$5-7 per CY and \$9/CY for erosion control mix (FOB). Primary markets have been DOT projects. O’Neal stated that the compost weighs 1,200-1,700 lb/CY depending on its moisture content, and claims that he has sold in excess of 50,000 CY of product over the past 6 months. Trucking is done through a family owned trucking business.

BIGGEST CHALLENGE – No process challenges were obvious. However, diversifying markets outside of the DOT would be helpful for longer-term success.

UPDATE – 4/7/05

O’Neals stated that they have a lot of farmers within the watershed interested in using their compost, but need the rebate to make the product economically attractive. They have been out of the manure hauling program for 2 years, but are still receiving manure (with some farmers paying him \$20/load to offset some of the hauling costs). Their biggest customer is TX DOT. GUC is the primarily product they sell to TX DOT, with 90% receiving the hauling rebate. They primarily sell to TX DOT at \$8yd³, plus freight (\$2.50/loaded mile for hauling, going up to \$3.00/loaded mile). They can usually haul 36yd³ of compost per load. O’Neals is selling more product to farmers (\$10yd³ + freight) for Coastal Bermuda and Sudan grass. With a finer screen he believes that they could sell more to Pecan growers (remove stones). They are also selling more compost to municipal entities and a little to homeowners (\$20/yd³).