



New England Biosolids Case Studies*

Ogunquit: Biosolids Growing Great Hay!

***biosolid** n. (1990): solid organic matter recovered from a sewage treatment process and used esp. as fertilizer.

--*Merriam-Webster's Collegiate Dictionary*

Background

Ogunquit, Maine is located on the Atlantic seacoast, approximately 40 miles south of Portland. Popular for its beaches and shops, this small community thrives on tourism in the summer. The Ogunquit wastewater treatment facility was originally constructed in 1963 and is located on a barrier beach peninsula directly adjacent to the ocean dunes.

The wastewater treatment facility underwent two major renovations in 1982 and 1993. During the 1993 renovation, new technologies were installed and the entire system was computerized. There are currently five full-time, year-round employees and one seasonal employee, all of who share a desire to provide a public service while helping the environment. Currently, the facility treats an average of 300,000 gallons of wastewater per day in the winter, but the influx of tourism raises that to an average of 800,000 gallons per day in the summer! The plant processes the waste of approximately 1400 users, of which 900 are residential and the rest commercial. There are no industries contributing wastewater to the facility.

Through a state-of-the-art computerized system, the facility monitors the clean water out-flow (effluent) 7 days a week, 24 hours a day. The effluent flows into a pipe that reaches far out into the ocean. If there is any problem with the system, the facility's employees are immediately alerted via beepers and cell phones. Operations tend to run smoothly, however, allowing the facility to continue to transform raw wastewater into clean water and reusable biosolids.

What About the Solids?

Within the state of Maine, 92% of the sludge from wastewater treatment is recycled. The city of Ogunquit is no exception — it recycles 100% of the 500 cubic yards of biosolids produced per year. The wastewater sludge is transformed into a biosolid through anaerobic digestion — an oxygen-free process that promotes the growth of bacteria to break down the wastewater sludge into biosolids. Since biosolids can only be spread during the summer, the sludge is stored in an on-site tank throughout the winter. During the summer, the treated sludge is pressed to remove excess water, forming a new cake-like substance. Since the facility does not stockpile biosolids, they are loaded directly into a truck and spread within 24 hours.

The U.S. Environmental Protection Agency (EPA) sets standards on allowable levels of certain materials in biosolids and the State of Maine sets even stricter compliance standards for biosolids. The biosolids produced in Ogunquit are regularly and extensively tested by Wright-Pierce Engineers in Topsham, Maine for trace metals, volatile organic compounds, semi-volatile organic compounds, pesticides, polychlorinated biphenyls (PCB s), and dioxin. During the approximately ten years in which they have

been beneficially reusing their biosolids, the Ogunquit wastewater treatment plant has never had a test exceed any federal or state standards.

The Ogunquit biosolids are used by five farms on hay fields ranging in size from 10 acres to 60 acres. The soil of each field is tested to determine the amount of nitrogen necessary to create ideal growing conditions for the pre-selected crop. The fields are carefully mapped to ensure that the biosolid spreading is undertaken in accordance with federal and state standards regarding setbacks from roads, houses, and water bodies. All of the fields using the Ogunquit biosolids comply with the state and federal setback requirements. Though the fields are also each located near residential properties, there have been no odor or other concerns raised related to the use of biosolids at these sites.

Making Better Hay — Benefits to Farmers and Consumers

Phil Parker manages Russell Acres, a farm listed as a National Historic Site located in Kennebunk, Maine. The farm was originally founded under a king s land grant in 1715 and the farmhouse was built in 1754. Russell Acres currently grows hay, which is harvested 2-3 times a year. Most of the hay is sold to horse farms, with some kept as feed for the farm s free-ranging Red Deer herd. During the 1999 growing season, 15,340 bales of hay were harvested and over 8,000 people visited the historic farm.

The Ogunquit Sewer District and the farmers enjoy a symbiotic and unique relationship. As Phil Parker states, it s truly a partnership that works. The nutrients contained in biosolids are beneficial to crops and are an affordable option to commercial fertilizers. In the words of Parker, every farmer needs to fertilize fields and you d go broke if only commercial fertilizer was used. Ogunquit biosolids also support other small, family-owned farms in the area such as Fred Stone s dairy farm. Stone sells the manure from his cows to others in agriculture and replaces nutrients in his fields by spreading biosolids.



Ogunquit wastewater treatment facility operators use a specialized town truck to apply Ogunquit biosolids on nearby farm fields.

Farmers using Ogunquit biosolids see a marked increase in the quality of their hay products. For example, the owner of a horse farm raising high-quality racing horses began using biosolid-grown hay as feedstock. The farmer noticed that the horses consumed less of the biosolid-based hay than regular hay and he became concerned that horses found the hay distasteful. However, when tests were run on the hay, results revealed that the hay grown with biosolids had a higher nutrient value than the hay the farmer had formerly used as feed. The racehorses were regulating how much they ate, as they are bred to do, and consuming less because of the higher nutrient content of the new hay.

Phil Pickering, Ogunquit’s plant manager, declares that he doesn t have to make any effort to find farmers to recycle the biosolids! He says that word travels quickly within the farming community about good products that are also economically beneficial. It helps when he hears his customers say, wow this is a real good quality product.



NEBRA Biosolids Case Study #2: Ogunquit, ME.

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