Estimating Costly Sludge Hauling at Harnett County

Replacing sludge lagoons with decanter centrifuges to reduce disposal costs and restore operational control at a dual-facility water system in North Carolina.

The Challenge

Harnett County operates two facilities: a 42 MGD Water Treatment Plant (WTP) producing alum sludge and a 16 MGD Wastewater Treatment Plant (WWTP) handling lagoon sludge. For years, both facilities relied on sludge lagoons as their primary management method — but the operational and financial consequences were mounting.

Disposal costs had reached $80,000 per million gallons of sludge, with no relief in sight. More pressing was the lack of operational flexibility: the county depended entirely on the availability and willingness of hauling contractors to remove sludge. When haulers were unavailable or capacity was tight, the facility had no alternative — leaving operators with little control over a critical process.

Key Challenges

- $80,000/MG sludge disposal cost
- 2–3% TS incoming sludge — both facilities
- No operational flexibility with lagoon-only approach
- Dependent on hauler availability for sludge removal
- Limited control over a critical plant process

Industry
Municipal Wastewater & Water Treatment

Location
Harnett County, NC

Application
Sludge Dewatering — Lagoon & Alum Sludge

Equipment
(2) CS26-4 Decenter Centrifuge Systems

Scope
New Installation Replacing Sludge Lagoons

Installed
April 2020

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The Solution

Rather than defaulting to the nearest equipment supplier, Harnett County's operations team took a deliberate approach. They traveled to Centrisys/CNP headquarters in Kenosha, WI to evaluate the manufacturer directly — touring the facility, reviewing centrifuge systems in operation, and assessing the company's ability to provide service and support across the full lifecycle of the equipment.

What they found was a manufacturer that understood their specific application: processing both lagoon sludge from a WWTP and alum sludge from a WTP, each with its own feed characteristics, required a centrifuge system with proven versatility and a service team capable of supporting both. Two Centrisys decanter centrifuges were installed in April 2020 — one at each facility — each sized for approximately 225 gpm feed capacity. The facilities typically run 8–9 hours per day, five days a week, processing sludge on a predictable, operator-controlled schedule.

The county's team visited Centrisys/CNP in Kenosha, WI to evaluate capabilities firsthand — choosing Centrisys/CNP based on proven performance and confidence in lifecycle service support.

The Results

- **WWTP:** Processed 73+ MG of lagoon sludge
- **Feed:** 2–3% TS in → 25–26% cake out
- **WTP:** Processed ~100 MG of alum sludge
- **Feed:** 1–2% TS in → 24–25% cake out
- **Schedule:** 8–9 hrs/day, 5 days/week — fully operator-controlled
- **Service:** Annual Centrisys inspection under service contract
- **ROI:** The facility paid for itself within 2.5 to 3 years due to the savings in disposal costs and the savings continue into the future.

Dealing with similar challenges at your facility?

(262) 360-7770

Talk to our team about what has worked at comparable plants or learn more about Centrisys/CNP dewatering solutions.