

Ease-of-Grease Dolly

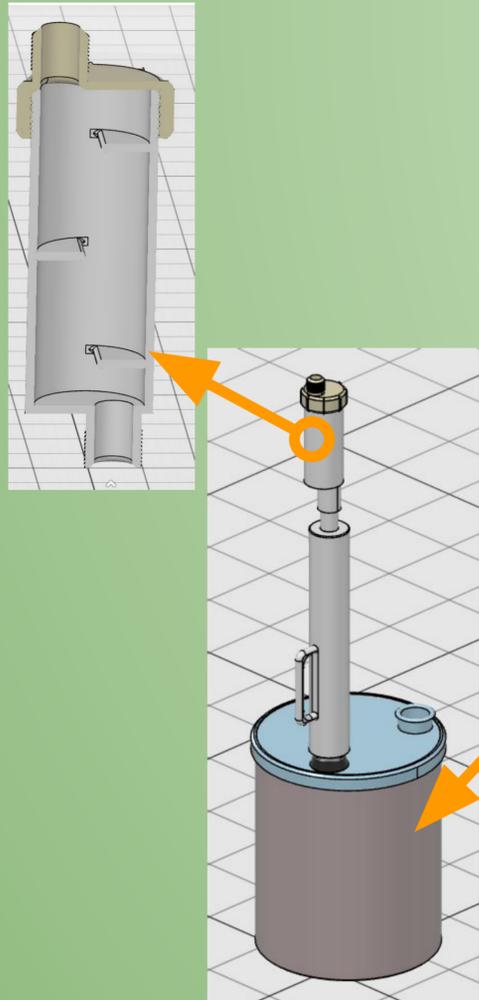
Fall 2025, EGT1110 Section 003

Problem Statement

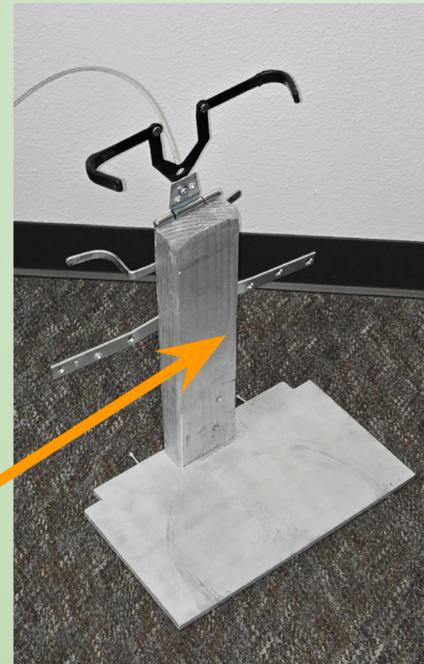
How can we reduce Fats, Oils, and Grease (F.O.G.) waste in landfills by creating a more efficient transportation system that ensures it is delivered to the proper facilities instead of ending up in landfills?

Novel Features

- Inline, filter housing with removable filter.
- Inline ball valve at end of disposal hose to allow for control of flow rate.

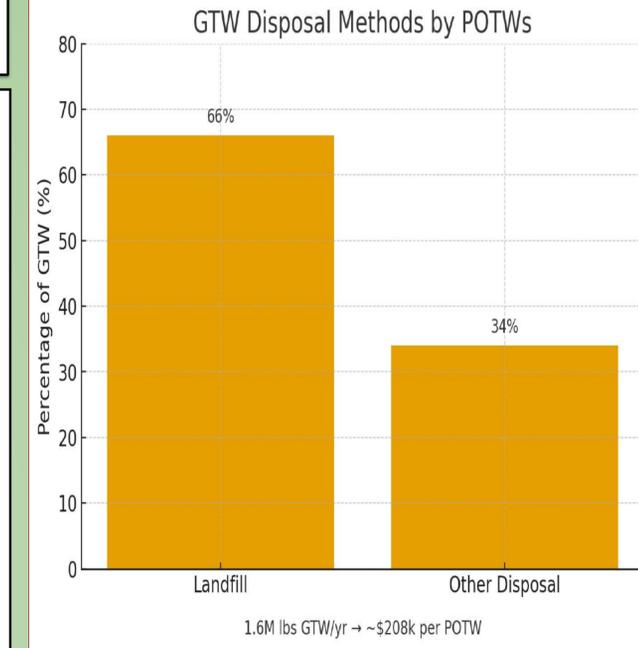


- “Bug” lift with bucket clamp.



What's The Big Deal?

- Individual restaurants can produce between 800 and 17,000 pounds of FOG per year [2]
- ~ 1.6 million lbs. of GTW per year are mixed with other dry waste and sent to landfill equaling annual operating cost of ~\$208,000 per POTW [1].
- Most FOG small scale disposal rates aren't recorded, but when observed from a large scale it has enormous infrastructure consequences [3].



Validations/Goals

- Holds weight and moves under load
- Intuitive ease of use
- Safer operations
- Reduction of liability

Stakeholders

- Restaurant Employees and Upper Management/Admin.
- Distribution/Processing Chain Employees
- Biofuel recycling companies
- Waste Processing Workers

Final Solution: Two Key Subsystems

- Lifting Subsystem: raises the center of gravity to enable dispensing at low pressures.
- Storage, Filtration, and Dispensation: maintains a contaminant free environment while allowing for a point of dispensation.

Citations

- [1] A. Mata *et al.*, "A Review of Grease Trap Waste Management in the US and the Upcycle as Feedstocks for Alternative Diesel Fuels," *Environments*, vol. 11, no. 8, pp. 159–159, Jul. 2024, doi: <https://doi.org/10.3390/environments11080159>.
- [2] mxtkx, "FOG 101 - Greasezilla," *Greasezilla*, Mar. 17, 2023. <https://greasezilla.com/fog-101> (accessed Nov. 18, 2025).
- [3] G. Wiltsee, "Urban Waste Grease Resource Assessment," united states government, Nov. 1998. Accessed: Nov. 15, 2025. [Online]. Available: <https://docs.nrel.gov/docs/fy99osti/26141.pdf>