



Composting Processes at South Canyon Landfill

Why and How we
Compost Liquid
Waste Feedstocks

Liz Mauro

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Landfill Manager

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Site Location – **South Canyon, Glenwood Springs, CO**

- *Class III facility
- *co-located with landfill & recycling operations
- *method used = passively aerated static pile

PFRP (process to further reduce pathogens) for our site

>131 F for 3 consecutive days

>113 F for 14 days

With proper pile construction our piles are normally >150 F for 2-3 months

Entire process and temperature requirements are written down in a detailed SOP

Every batch is tested for fecal coliform and salmonella





**US Composting
Council**
**Seal of Testing
Assurance®**

South Canyon Landfill

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Glenwood Springs, CO 81601
970-945-5375

Product Name: Compost

Sample Date: 4/18/2023

COMPOST TECHNICAL DATA SHEET

LABORATORY: Midwest Laboratories, Inc. 13611 B St. Omaha, NE 68144 (402)334-7770 ph (402)334-9121 fax

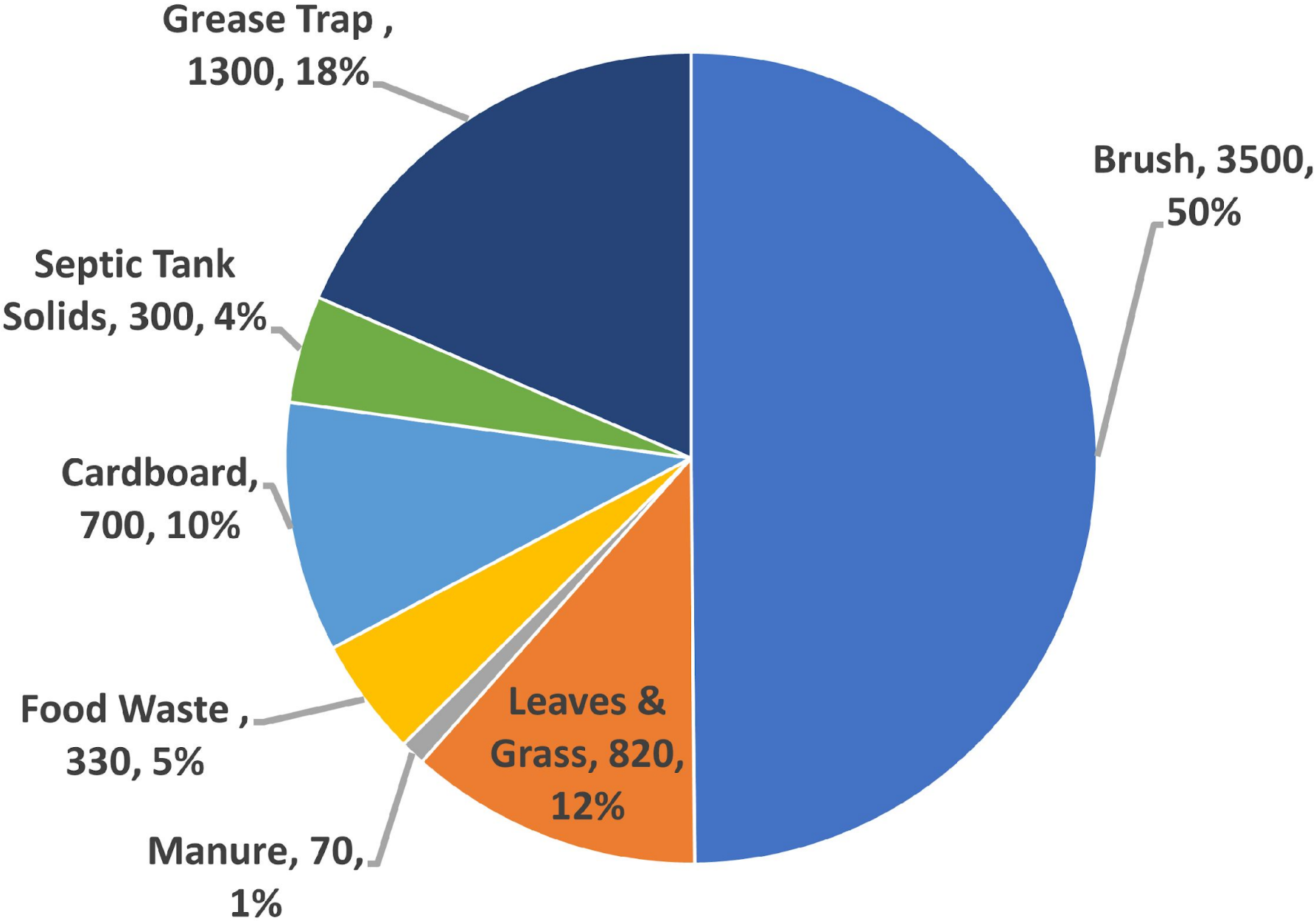
Compost Parameters	Reported as (units of measure)	Test Results	Test Results
Plant Nutrients:	%, weight basis	%, wet weight basis	%, dry weight basis
Nitrogen	Total N	0.41	0.86
Phosphorus	P ₂ O ₅	0.30	0.63
Potassium	K ₂ O	0.30	0.63
Calcium	Ca	2.05	4.30
Magnesium	Mg	0.35	0.73
Moisture Content	%, wet weight basis	52.36	
Organic Matter Content	%, dry weight basis		31.49
pH	pH units	7.8	
Soluble Salts (electrical conductivity EC _s)	mS/cm	1.93	
Particle Size	% < 9.5 mm (% in.), dw basis		92
Stability Indicator (respirometry)	mg CO ₂ -C/g OM/day	0.33	
	mg CO ₂ -C/g TS/day	0.21	
Maturity Indicator (bioassay)			
Percent Emergence	average % of control	100	
Relative Seedling Vigor	average % of control	95	
Select Pathogens	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.32(a)	PASS	
Trace Metals	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3.	PASS	





Our
compost
pad is
only
about 1
acre

Typical Compost Inputs for South Canyon Landfill (tons)



What are liquid waste streams?

- Grease trap waste
- Brewery/ distillery waste
- Septic tank
- Portapotty
- Sand trap
- Car wash oil-sand

Photo: Altitude Septic



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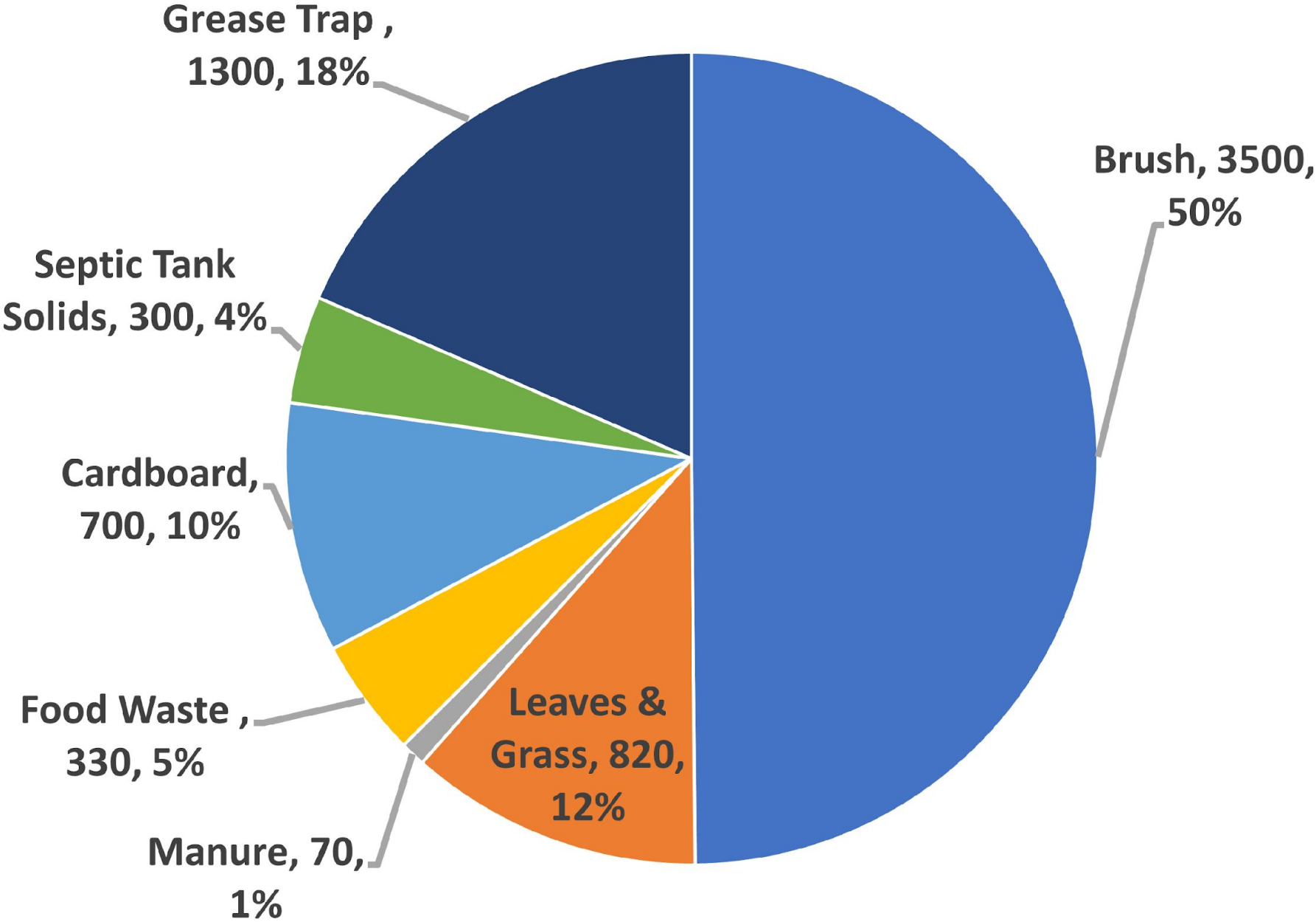
Photo: Altitude Septic

Why compost liquid waste streams?

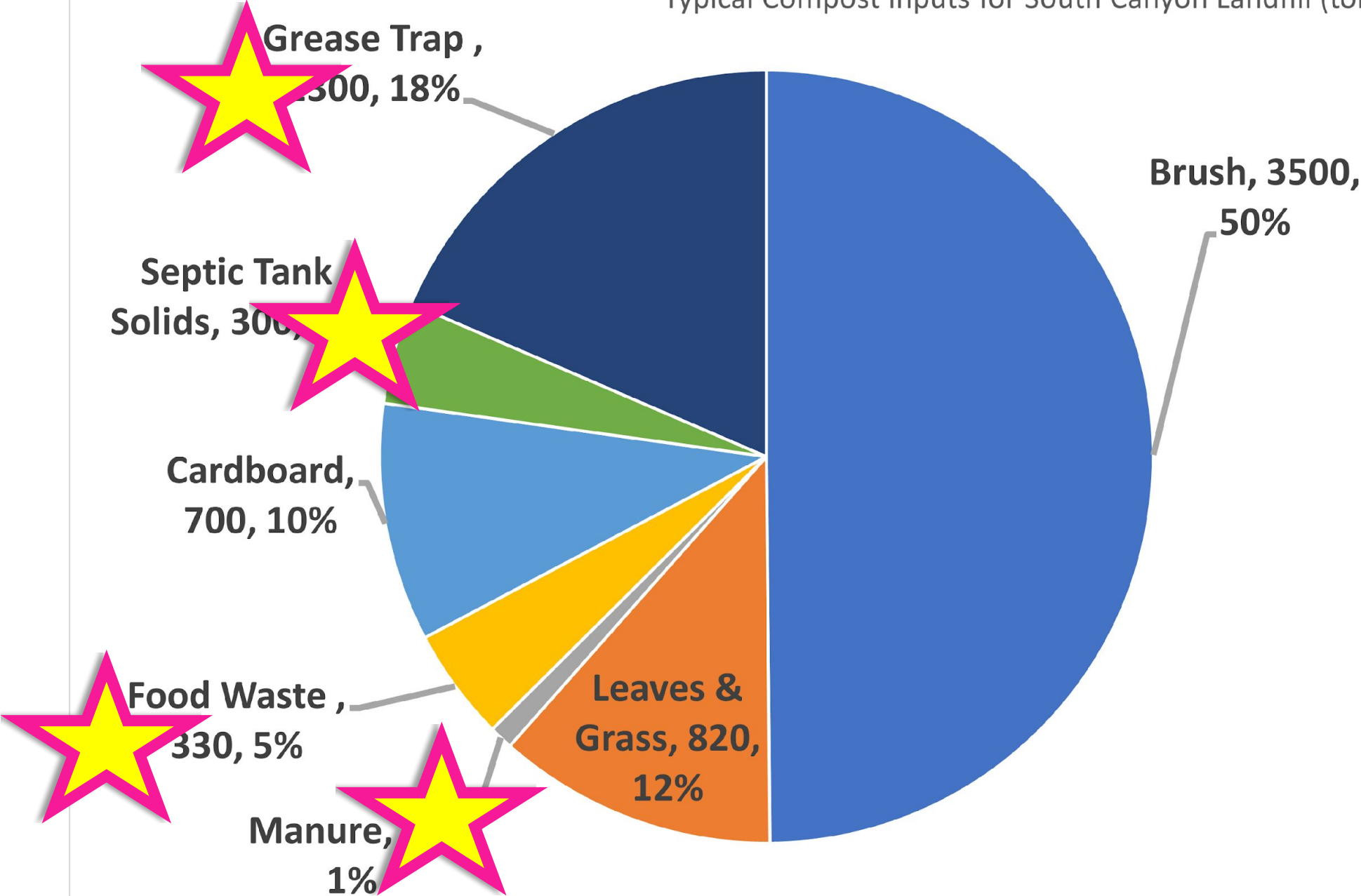
For the Nitrogen ...

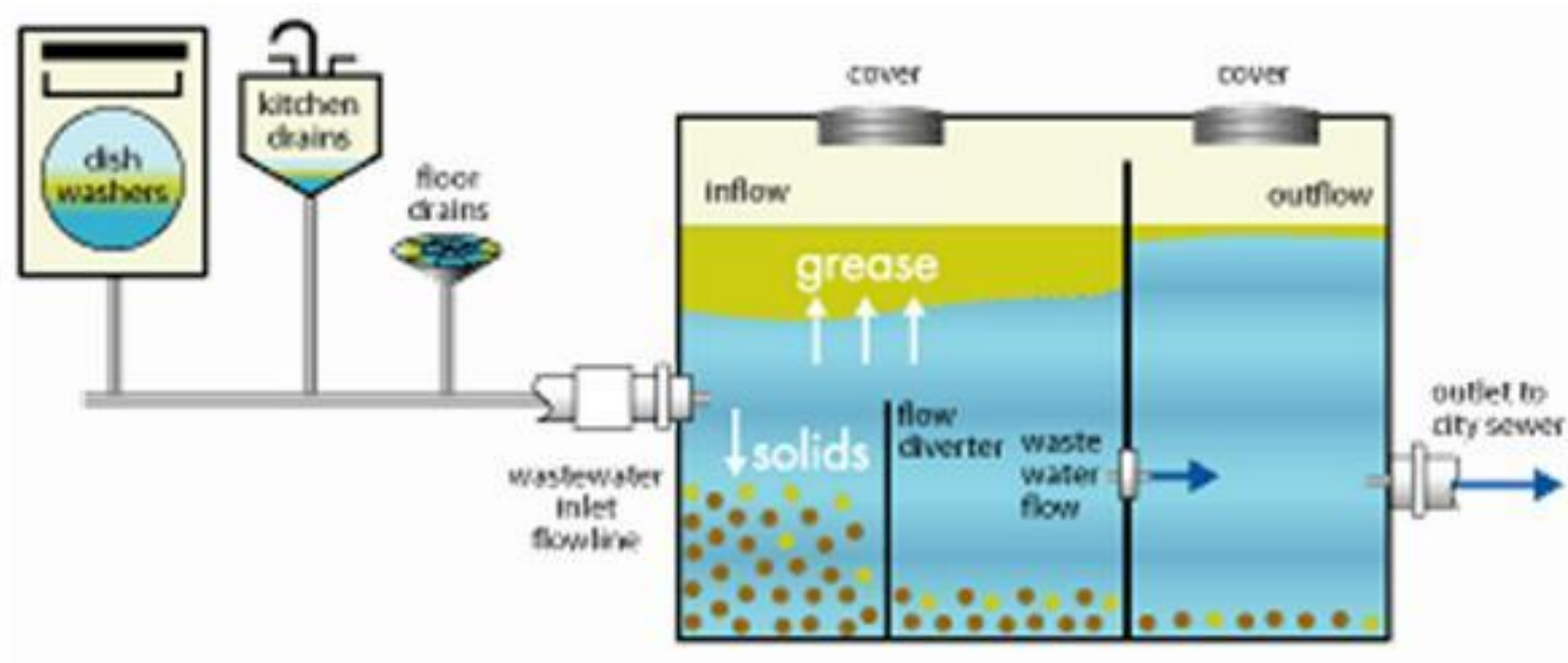


Typical Compost Inputs for South Canyon Landfill (tons)



Typical Compost Inputs for South Canyon Landfill (tons)





... and for the water!

Illinois

Photo: City of Princeton

If you're going to add new feedstocks...

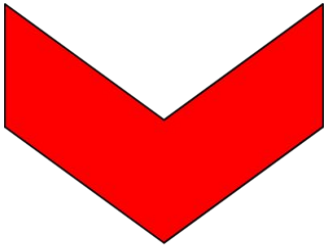
- The USCC & CREF's calculator can be a good place to start
- Every load is different
- You will learn by doing and be able to estimate how much bulking material you need but this can help until you get used to eyeballing your N and C ratios
- The calculator: <https://recipe.aeyd.io/calculator>

Process

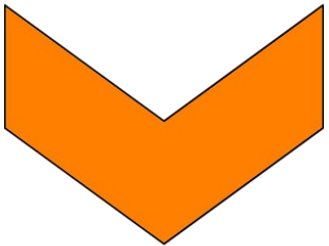
- mixing
- pile building
- monitoring
- curing
- screen
- sell!



Challenges

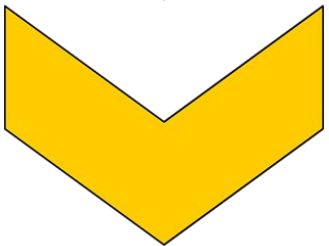


Infrastructure / Engineering / Permitting Costs
Capacity

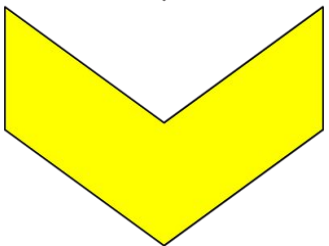


Contamination

SALTS – Magnesium Chloride and Portapotty Additives



Plastic/Trash in Cardboard loads



Low trash price ☐ Organics still going to trash

End Markets, though we are seeing improvement each year



	5/20/2020	5/18/2021	8/5/2021	10/18/2021	1/11/2022	4/19/2022	7/13/2022	10/11/2022	1/25/2023	4/18/2023
Nutrient Ag index	3	2.9	3.3	2.9	1.8	2.3	6.3	8.1	9.8	>10
Conductivity	4.7	3.8	6	5.6	5.5	5.9	4.1	2.7	1.9	1.9
pH	7.4	7.2	7	6.6	7.3	7.7	7.3	8.1	7.2	7.8
Organic Matter	32.5	33.1	65.9	28.8	28.5	28.3	31.8	34.8	33.6	31.5
NPK sum	1.9	1.9	1.9	2.5	1.9	2.1	5.6	2.5	2.6	2.1

Discussion

contact info

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