

## Appendix B: Preliminary Equipment Sizing

### Liquid Receiving and Storage

Parameter	Annual Average Conditions	Max Month Conditions	Max Week Conditions
Received Volume, gal/day	66,940	100,410	120,492
Received Mass, lbs (dry)/day	39,079	58,619	70,343
TS%	7%	7%	7%

Parameter	Assumption	Note
Tank Type	Buried	
Tank Material	concrete	
Tank Mixing Provided	Yes	Chopper Pumps
No of Tanks	Two	
Required Storage, days	3	Sized for Max month
Volume per Tank, gal	190,000	Assuming 80% usable volume
Transfer pump type to Dewatering	Rotary Lobe Pump	Duty/Standby at MW condition
Odor Control	Yes, for headspace	Sized for two tanks, half-full
Total Electrical usage per year, kWh	587,910	Assume 24 hour per day operation

### Dewatering

Parameter	Annual Average Conditions	Max Week Conditions	Max Month Conditions
Received Volume, gal/day	66,940	120,492	100,410
Received Mass, lbs (dry)/day	39,079	70,343	58,619
TS%	7%	7%	7%

Parameter	Assumption	Note
Min. solids capture	95%	
Manufacturer and Model	Schwing Model 11.03 Screw Press	
Duty Units	1	
Standby Units	1	
Location	Inside Building	
Min. TS%	30%	Based on input provided by TCR. TCR conducted dewatered pilot tests using the

		Schwing dewatering screw press.
Filtrate/centrate	Gravity to sewer	
Washwater	Potable Water	Assumed washwater booster pumps not required
Odor Control Provided	Yes	
HVAC required	Yes	Per NFPA 820 Requirements
Operating time	168 hours/week	7 days/week, 24 hours/day
Total Electrical usage per year, kWh	192,175	

### Cake Receiving and Storage

Parameter	Annual Average Conditions	Max Week Conditions	Max Month Conditions
Received Mass, lbs (dry)/day	51,112	92,002	76,668
TS%	23%	23%	23%

Parameter	Assumption	Note
Manufacturer	Schwing	
Required Storage, days	3	At AA conditions
Location	Inside	For freezing and odor considerations
No of Silos	2	
Volume per silo, CF	2,450	
Transfer type to cake mixing	Screw conveyor	
Odor Control	Yes	
Building	enclosed	
Total electrical usage per year, kWh	422,425	Assume 24 hour per day operation

### Cake Mixing

Parameter	Annual Average Conditions	Max Week Conditions	Max Month Conditions
Cake Mass, lbs (dry)/day	88,238	158,828	132,357
Cake Volume, CY	196	352	294

Parameter	Assumption	Note
Manufacturer and Model	Schwing 350 mm mixer	
Transfer type to buffer storage/Drying	Screw conveyor	Sized for MW condition
Odor Control	Yes	
Total Electrical usage per year, kWh	424,600	Assume 24 hour per day operation

## Drying

Parameter	Annual Average Conditions	Max Week Conditions	Max Month Conditions
Cake Mass, lbs (dry)/day	88,238	158,828	132,357
Cake Volume, CY	196	353	294

Parameter	Assumption	Note
Upstream Buffer Storage, hours	8	
Buffer Storage Silo Volume, CY	30	At MW conditions
Dryer Manufacturer and Model	Gryphon Model 1060U	
Duty Units required	4	
Location	Inside Building	
Min. TS%	93%	
Condensate	Gravity to sewer	
Final conveyance	Belt conveyor	
Building	Yes	Shared with other unit processes (dewatering, cake receiving, etc)
HVAC required	Yes	Per NFPA 820 requirements
Final Product storage	7 days	At MW conditions
Final Product storage silo Volume, CY	1,110	At MW conditions
Operating time	168 hours/week	7 days/week, 24 hours/day
Total Electrical usage per year, kWh	3,409,125	