

# Is there FOG in FOOD waste?

## Case Studies

Presented by:

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**INTERCEPTOR**  
WHISPERER

**FOG**  
TRAINING INSTITUTE



AN AMERICAN NATIONAL STANDARD  
IAPMO/ANSI UPC 1 - 2018

# 2018 UNIFORM PLUMBING CODE®



2 0 1 8

INTERNATIONAL CODES™

# IPC®

A Member of the International Code Family™

INTERNATIONAL  
PLUMBING CODE®



# 2018 Uniform Plumbing Code

## **1014.1.3 Food Waste Disposers and Dishwashers**

**No food waste disposer or dishwasher** shall be connected to or discharge into a grease interceptor. Commercial food waste disposers shall be permitted to discharge DIRECTLY into the building's drainage system.

**Exception:** Food waste disposers shall be permitted to discharge into grease interceptors that are designed to receive the discharge of food waste.

# 2018 International Plumbing Code

## **1003.3.2 Food waste disposer restriction.**

A food waste disposer shall not discharge to a grease interceptor.

The question is:

Is there FOG in Food Waste?

# POLLING QUESTION 1



## COMMERCIAL FOOD WASTE DISPOSAL STUDY

New York City  
Department of Environmental Protection

WITH SUPPORT FROM

New York City Department of Sanitation  
New York City Economic Development Corporation  
Business Integrity Commission

Steven W. Lawitts, Acting Commissioner

December 31, 2008

# FSE Sampling for FOG Loading

<b>Category</b>	<b>No. of Samples</b>	<b>1664 Oil and Grease (g/kg food waste)</b>
Colleges and Universities	15	14.83
Medical Facilities	32	1.03
Retail Food Establishments (supermarkets)	29	6.16
Restaurants and hotels	61	18.59
Other FSEs (caterers, shelters, non-public schools, and senior centers)	35	18.21



# FSE Sampling for FOG Loading

<b>Category</b>	<b>No. of Samples</b>	<b>1664 Oil and Grease (mg/L food waste)</b>
Colleges and Universities	15	14830
Medical Facilities	32	1030
Retail Food Establishments (supermarkets)	29	6160
Restaurants and hotels	61	18590
Other FSEs (caterers, shelters, non-public schools, and senior centers)	35	18210



# **Hotel and Conference Center, Bismarck, ND**





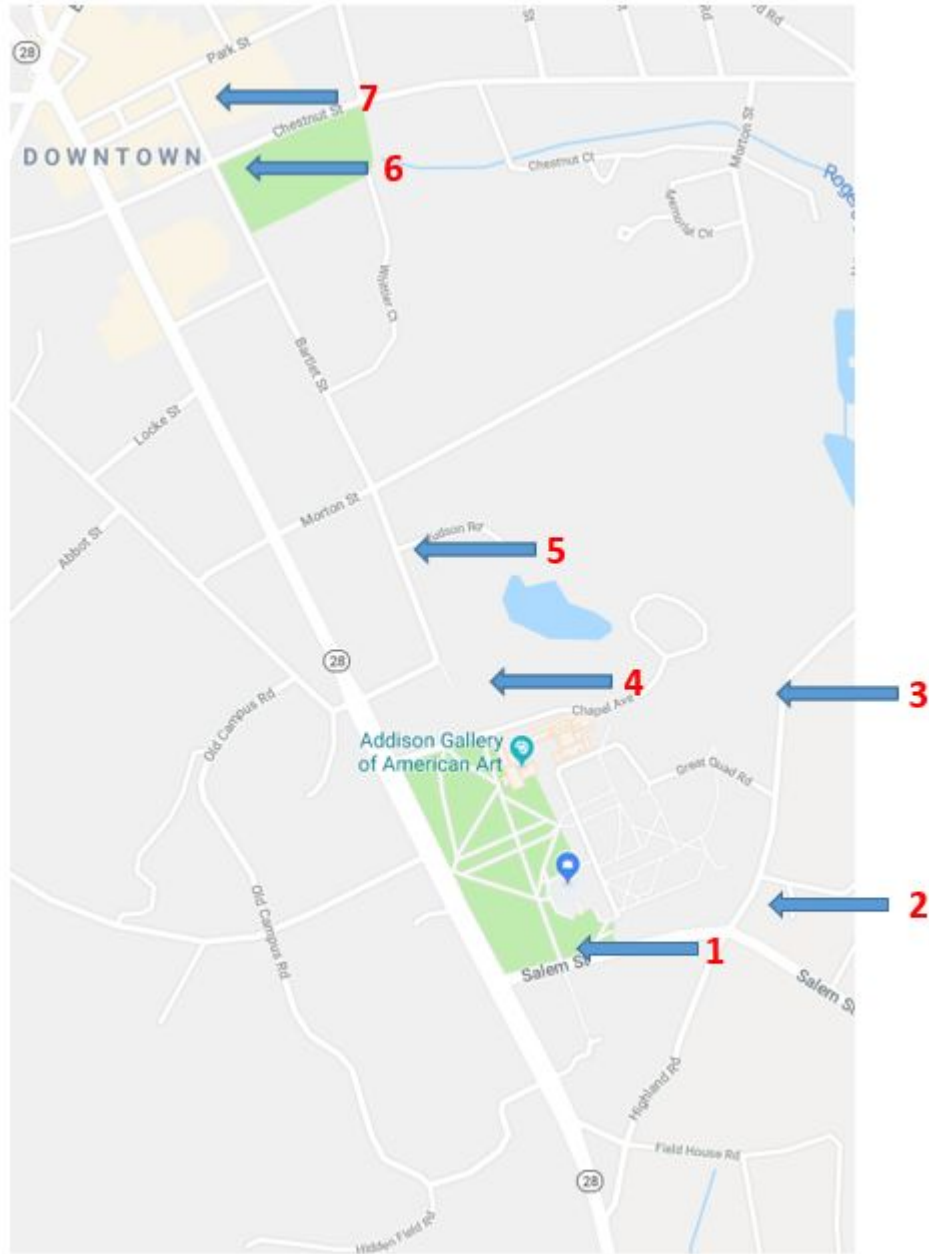


ECOLA  
Hand Sanitizer Dispenser  
Hand Soap Dispenser

Kleenex  
Handkerchiefs  
Soft  
2-Ply  
100% Cotton  
100% Recycled Paper  
100% Recycled Paper  
100% Recycled Paper



# **Private Secondary Education Facility, Andover, MA**



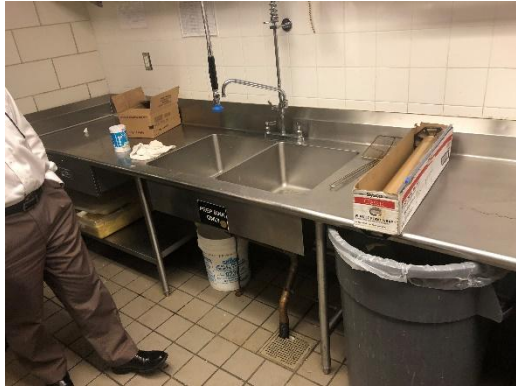
# Private Secondary Education Facility

















Quaternary Sanitizer  
Usage Procedures

- 1. Fill the sanitizer container with water.
- 2. Add the sanitizer concentrate to the water.
- 3. Stir the solution thoroughly.
- 4. Use the sanitizer solution to clean and sanitize surfaces.
- 5. Rinse surfaces with clean water after sanitizing.
- 6. Store the sanitizer solution in a cool, dark place.
- 7. Do not mix with other cleaning products.
- 8. Wear gloves and eye protection when handling the sanitizer.

SANITIZE/DESINFECTAR  
Water Line D

1.00  
Enjuagador SS 2

912 Sanitizer  
Usage Procedures

RINSE/ENJUAGUE  
Water Line D

WASH/LAVAR  
Water Line D

SANITIZE + DESINFECTAR  
WATER LINE

RINSE + ENJUAGAR  
WATER LINE

WASH + LAVAR  
WATER LINE

Person wearing a red and black patterned shirt and a green apron.









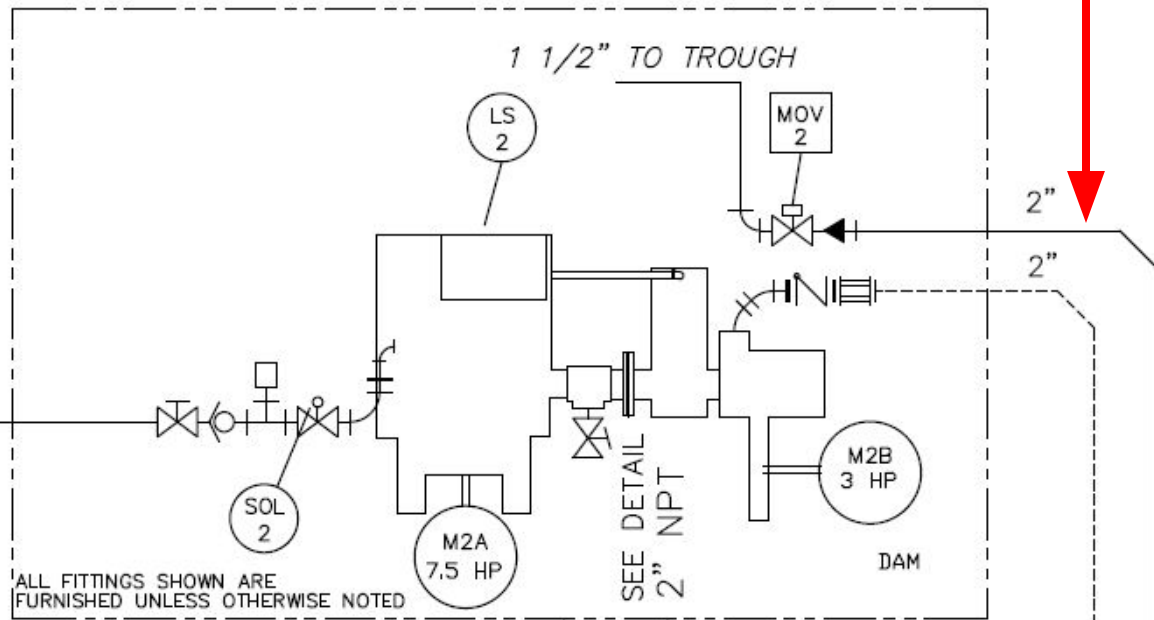






ITEM#367  
SP-75S  
SERIAL # 8980-3

3/4" POTABLE FRESH WATER SUPPLY  
18 GPM @ 30 PSIG MINIMUM



FLOOR SINK WITH  
3" TAKEAWAY

Return from  
Hydra Extractor

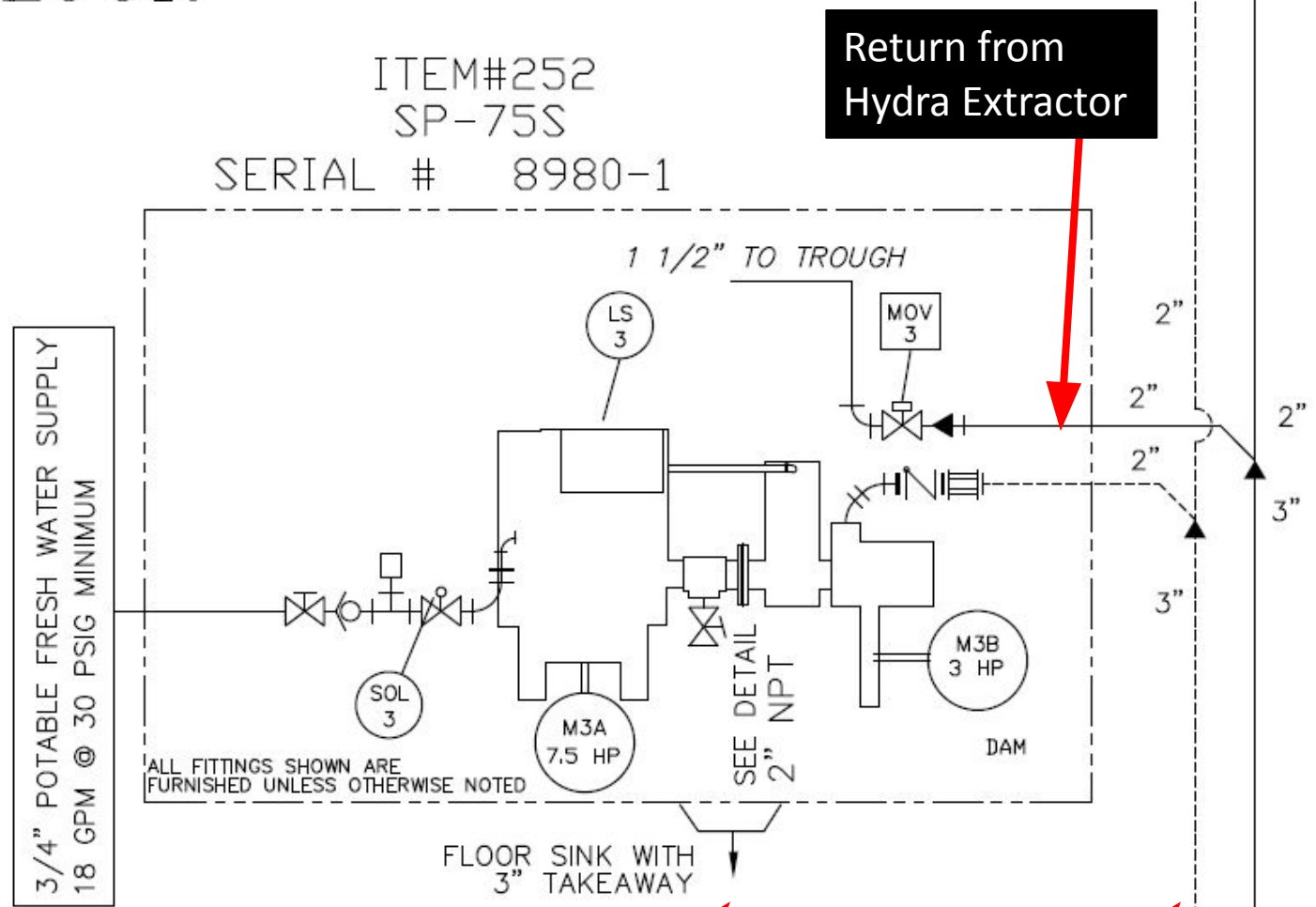
2ND FLOOR

GROUND FLOOR

Drain connection  
for TROUGH –  
discharges to Floor  
Sink

Discharge from  
Pulper to Hydra  
Extractor

# GROUND FLOOR



Return from  
Hydra Extractor

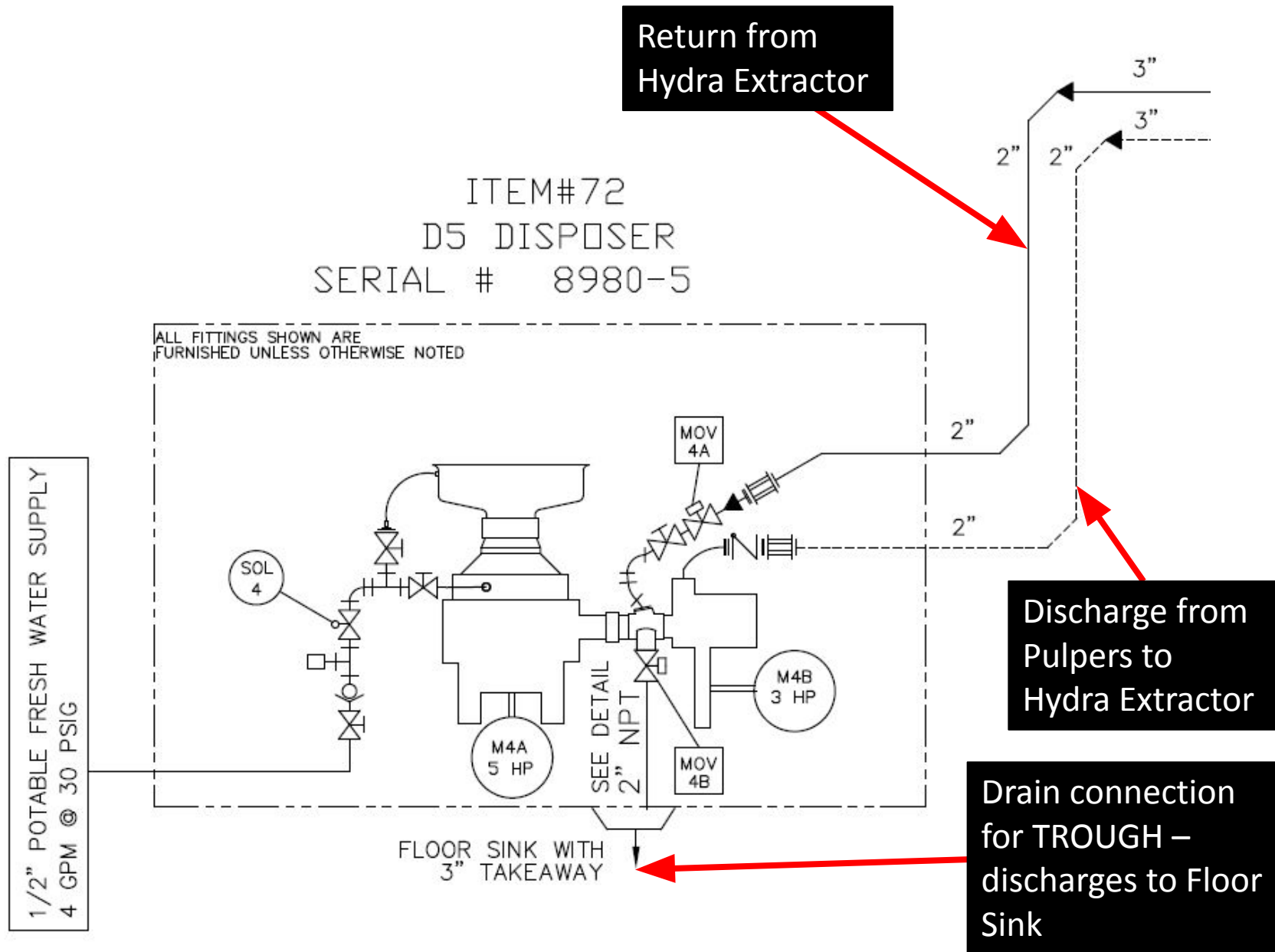
# GROUND FLOOR

# BASEMENT

Drain connection  
for TROUGH –  
discharges to Floor  
Sink

Discharge from  
Pulpers to  
Hydra Extractor

# BASEMENT

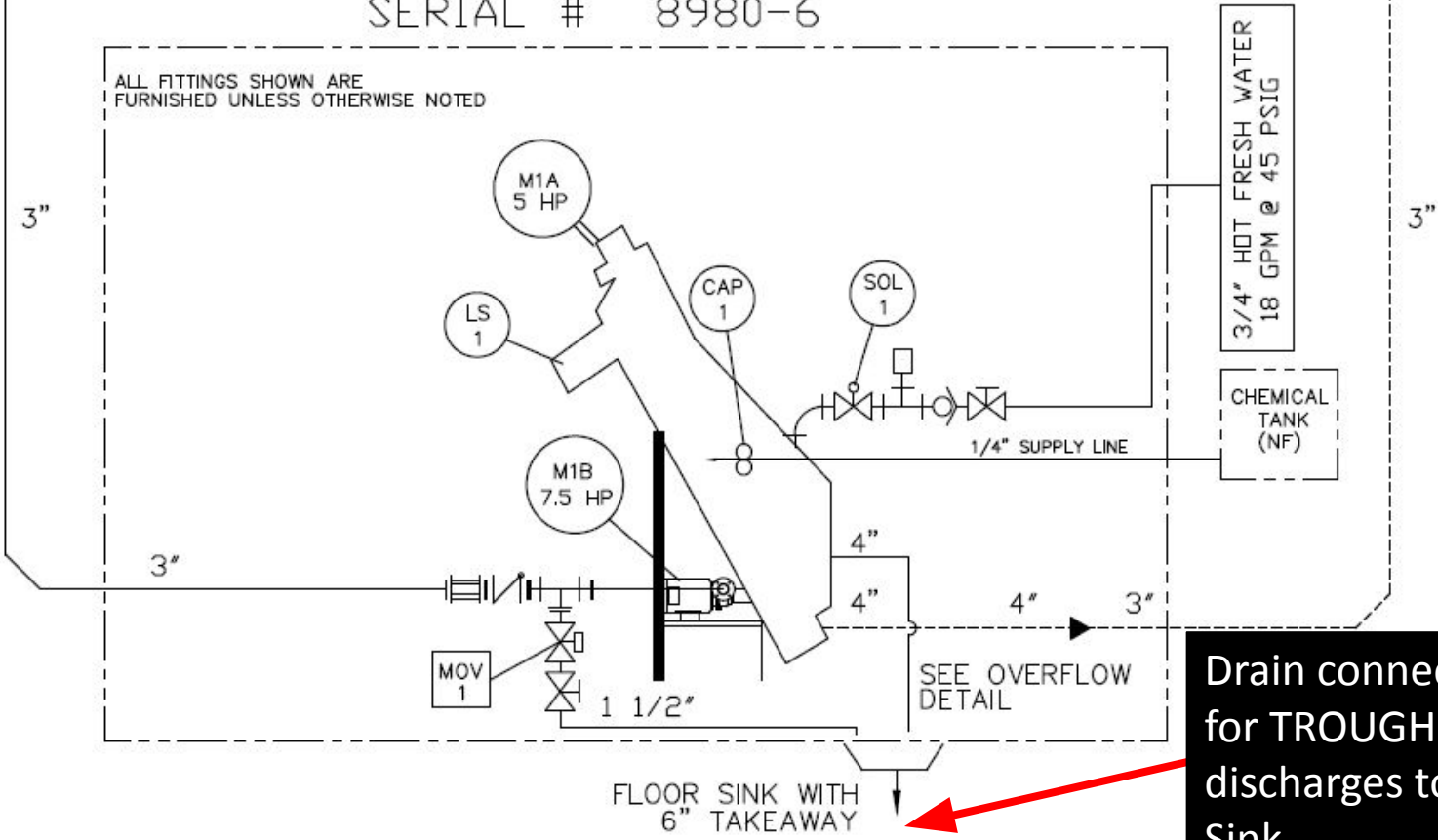


Discharge from  
Pulpers to  
Hydra Extractor

Return from  
Hydra Extractor

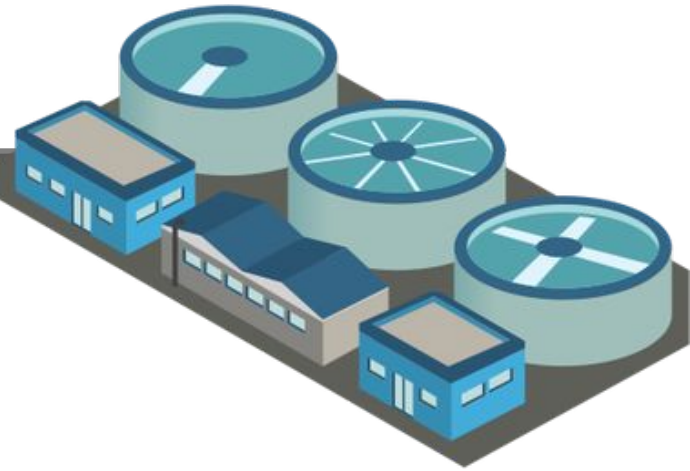
ITEM #18  
HE-9S  
SERIAL # 8980-6

ALL FITTINGS SHOWN ARE  
FURNISHED UNLESS OTHERWISE NOTED



Drain connection  
for TROUGH –  
discharges to Floor  
Sink





# POLLING QUESTION 2

Table 2

Type	Menu	Grease Factor ->	without Fryer	without fryer	with fryer	with fryer
			without flatware	with flatware	without flatware	with flatware
			A	B	C	D
1	Bakery		0.025	0.0325	0.035	0.0455
2	Bar and Grille		0.005	0.0065	0.025	0.0325
3	Barbeque		0.025	0.0325	0.035	0.0455
4	Breakfast Bar - Hotel		0.005	0.0065	0.025	0.0325
5	Buffet		0.035	0.0455	0.058	0.075
6	Burger and fries, fast food		0.025	0.0325	0.035	0.0455
7	Cafeteria		0.025	0.0325	0.035	0.0455
8	Caterer		0.005	0.0065	0.025	0.0325
9	Chinese		0.035	0.0455	0.058	0.075
10	Coffee shop		0.025	0.0325	0.035	0.0455
11	Convenience Store		0.005	0.0065	0.025	0.0325
12	Deep fried Chicken / seafood		0.035	0.0455	0.058	0.075
13	Deli		0.005	0.0065	0.025	0.0325
14	Family Restaurant		0.005	0.0065	0.025	0.0325
15	Frozen Yogurt		0.005	0.0065	0.025	0.0325
16	Greek		0.005	0.0065	0.025	0.0325
17	Grocery Bakery		0.005	0.0065	0.025	0.0325
18	Grocery Deli		0.025	0.0325	0.035	0.0455
19	Grocery Meat Department		0.025	0.0325	0.035	0.0455
20	Ice Cream		0.025	0.0325	0.035	0.0455
21	Indian		0.005	0.0065	0.025	0.0325
22	Italian		0.025	0.0325	0.035	0.0455
23	Mexican, fast food		0.025	0.0325	0.035	0.0455
24	Mexican, full fare		0.035	0.0455	0.058	0.075
25	Pizza		0.025	0.0325	0.035	0.0455
26	Religious Institution		0.005	0.0065	0.025	0.0325
27	Sandwich shop		0.005	0.0065	0.025	0.0325
28	Snack Bar		0.005	0.0065	0.025	0.0325
29	Steak and seafood		0.035	0.0455	0.058	0.075
30	Sushi		0.005	0.0065	0.025	0.0325

Grease  
Factor from  
Table 2

X

Meals or  
Customers  
per day

X

Days  
between  
pump-outs

=

Grease  
Capacity  
Required



$$\begin{aligned} 0.0455 \times 3571 \times 1 &= 162 \text{ pounds of grease per day} \\ 0.0455 \times 3571 \times 30 &= 4,860 \text{ pounds of grease per month} \\ 0.0455 \times 3571 \times 90 &= 14,580 \text{ pounds of grease per quarter} \\ 0.0455 \times 3571 \times 360 &= 58,320 \text{ pounds of grease per year} \end{aligned}$$



3 per week  
12 per month  
48 per quarter  
144 per year

Category	No. of Samples	1664 Oil and Grease (mg/L food waste)
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11,200 gallons DAILY water usage, estimated  
10% through SOMAT system

18,210 mg/L = 0.151 lbs/gallon

$0.151 \times (11200 \times 10\%) \times 1 = 169$  pounds of grease per day  
 $0.151 \times (11200 \times 10\%) \times 30 = 5,070$  pounds of grease per month  
 $0.151 \times (11200 \times 10\%) \times 90 = 15,210$  pounds of grease per quarter  
 $0.151 \times (11200 \times 10\%) \times 360 = 60,840$  pounds of grease per year



Thermaco Big-Dipper W-750-IS, 75 gpm AGRD

55-gallon drum emptied every 2 weeks

55 gallons x 7.3 lbs/gallon = 400 lbs grease

26 (every 2 weeks) x 400 = 10,400 lbs captured annually



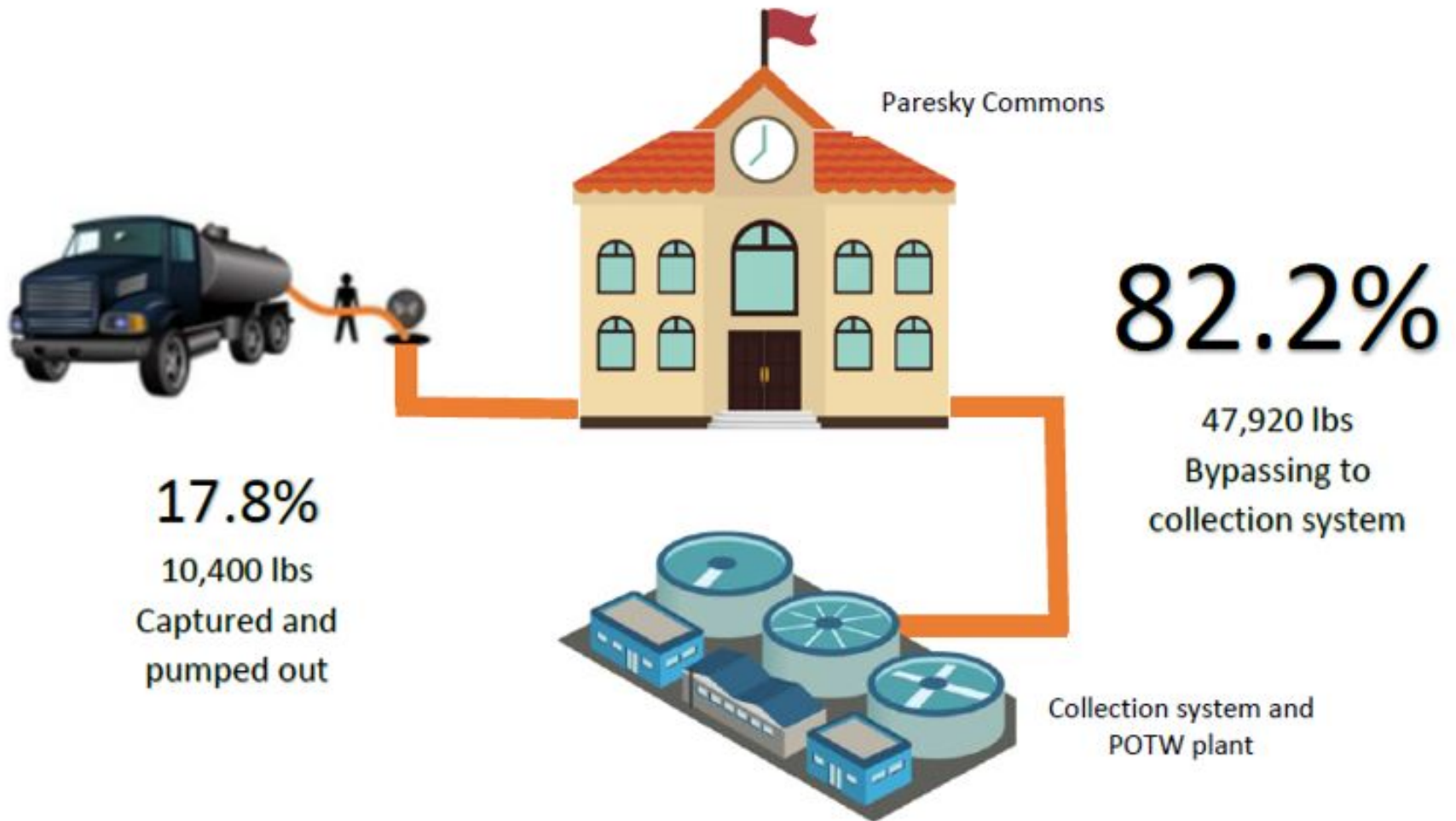


Figure 2: Percentage of Illicit FOG Discharges

**Is there FOG in Food Waste?**

**YES!**

# Questions?

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