

How Public Utilities Increase Productivity for Annual FOG Inspections

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Presentation Outline

- What is a FOG Program?
- Answering the How?
- Technology Parts and Pieces
- SRU FOG Program Case Study
- Conclusion
- Q & A

What is a FOG Program?

FOG - Fats, Oils, And Grease Are Byproduct Of Food Preparation Process

Restaurants are estimated to produce between 800 and 17,000 pounds each year (1)



(1) National Service Center for Environmental Publications (NSCEP)

What is a FOG Program?

Cont



Program Mandated By
EPA and State
Government



Includes Education
and Enforcement For
Customers

Answering the How?

Information technology (IT) is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, often in the context of a business or other enterprise.
(Wikipedia)

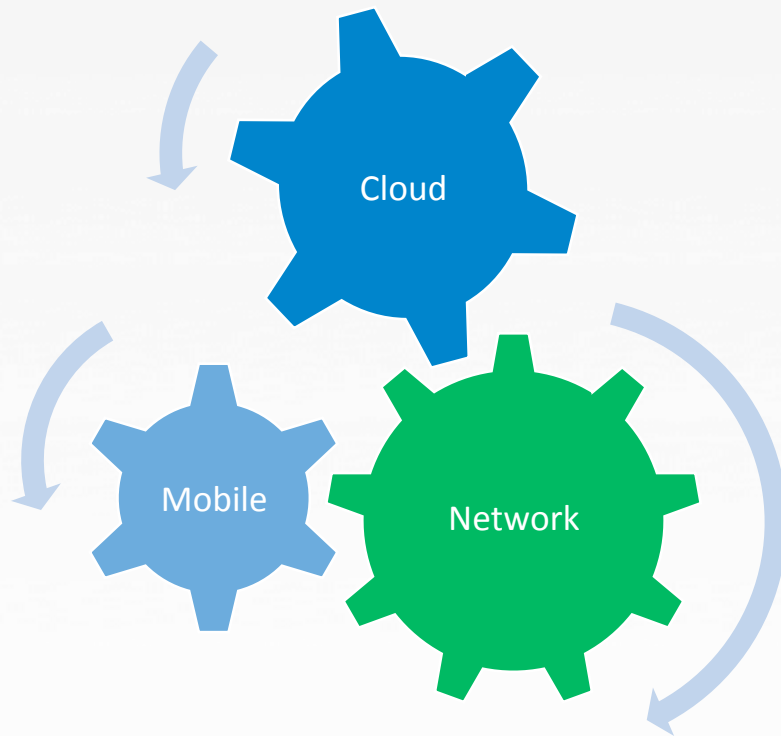
Answering the How? Cont.

Mobile Operations Management Software is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, in the context of business or enterprise operations.

Technology Parts and Pieces

2

Technology



Network

Mobile

Cloud

Software

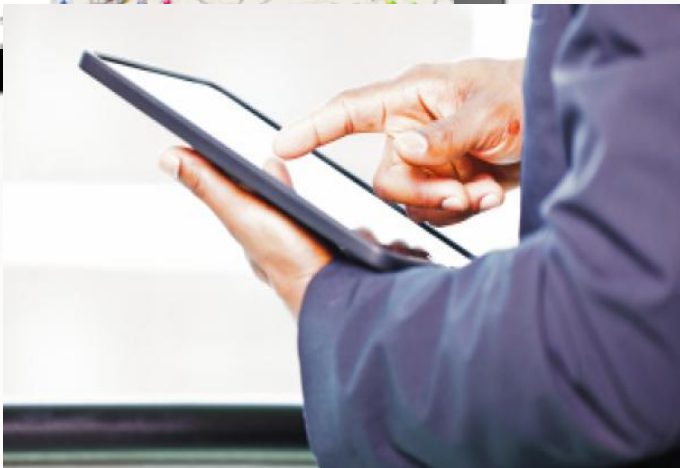
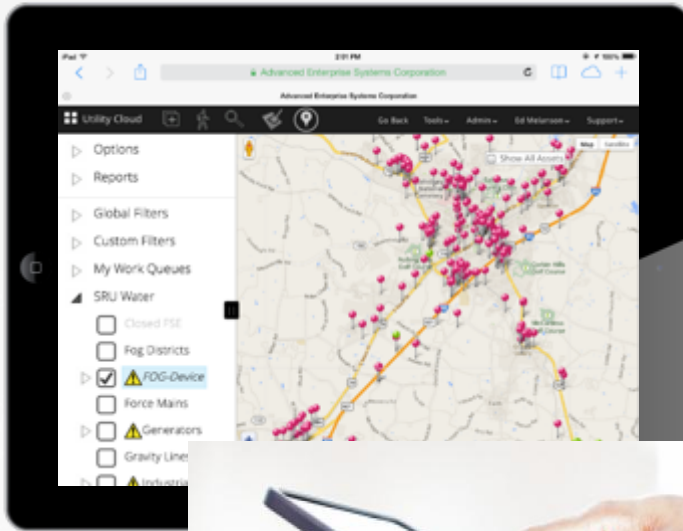
Network

Widely Available 3G And
4G Coverage Nationwide

High Speed WIFI
802.11ac And 802.11n



Mobile



Lightweight
Long Battery Life
Many Manufacturers

Built In Networking
Powerful Processors
Strong Graphic
Capabilities

HTML5 Compliant
Built-in Multimedia & GPS



utilitycloud



iPad



amazon



Microsoft



SAMSUNG



Google

Cloud

Elastic Infrastructure
Multi User – Shared Cost

Widely Available, Off-Site
Infrastructure Designed to
Reduce In-house IT
Needs

Strong Security
High Data Reliability
Low Cost



Software

Web vs App Platform
Proprietary vs Open Platform

User Friendly
Intuitive Operations Platform

Collect, Store, Retrieve,
Transmit, Manipulate and
report data

Case Study: Salisbury-Rowan Utilities FOG Program

Salisbury-Rowan Utilities

Located in the City of Salisbury,
North Carolina

Medium Size Utility Responsible
For Water, Wastewater And
Stormwater for residential and
business customers in the cities
of Salisbury, Rockwell, Spencer,
East Spencer, Granite Quarry,
and Rowan County North
Carolina



SRU Facilities Include:

- 3 WWTP
- 1 WTP
- 36 WW PS
- 8 W PS
- 13 Storage Tanks
- 21,000 Water Services
- 450 Miles Water Mains
- 450 Miles Sewer Mains
- 3,000 Hydrants
- 9,000 Manholes
- 300 FOG Devices

SRU Initial FOG Program

Started 2010 Using Paper Forms And Spreadsheets

Paper Intensive Process Didn't Work Well For Field Activities

Challenges: More Time Spent Planning Work Than Doing Work

Fat, Oil, Grease, & Wax (F.O.G.) Control Program

Grease Interceptor/Trap Inspection Report


Facility Name		Interceptor Information			
Service Address		MR			
		Type	GI		
		Size	1000		
Generator Type	Restaurant	Permit Num			
Location	Left of Facility	Last Maint Date	08/03/2012		
Contact Name		Maint. Freq	90 Days		
District	C	Emergency Ph:			
Depths	Chamber	#1	#2	#3	
	Grease				
	Water				
	Solids				
Comments/Violations		OK	Not OK	NA	Corrective Actions
Solids Interceptor				X	None
Records Kept On Site		X			None
Access Points		X			None
Outlet Tee		X			None
Inlet Tee		X			None
Baffle Intact and Unobstructed		X			None
Kitchen Fixtures Consistent With Records		X			None
Flow Regulator				X	None
CORRECTIVE ACTIONS DEADLINE					None
Inspection Comments					
Verified inlet sanitary tee has been installed. No additional corrective actions at this time.					
Corrective Actions					
Inspector Name:		Date of Inspection:		11/01/2012	
Owner/Manager Signature:		Time of Inspection:		2:05 PM	

SRU Initial FOG Program Cont

Updating Customer information was difficult

Tried a work management software on a laptop and air card but unreliable

Began looking ways to streamline data collection, scheduling & reporting



FOG Control Program, 137 N. Main Street, Salisbury, NC 28144 (704) 216-7596

FAT, OIL, GREASE AND WAX (FOG) CONTROL PROGRAM
GREASE INTERCEPTOR/GREASE TRAP SERVICE RECORD

Per Section 31D.3. of the Salisbury-Rowan Utilities FOG Control Program User Guidance Document and SRU Implementation Plan, all service records must be maintained on site and made available for inspection upon request by SRU for 3 years from date of service.

Facility Name: _____
Address: _____
Phone: _____

GREASE INTERCEPTOR/TRAP SERVICE INFORMATION

Service Date: _____ Time: _____ Service Frequency: _____ days or weeks
(circle one)
Grease Interceptor/Trap Size: _____ Quantity: _____
Interceptor or Trap Physical Location: _____
Total waste removed (gallons): _____
Grease cap measurements (inches): _____ Solids measurements (inches): _____
Disposal Site Location: _____
Disposal Permit No.: _____
Grease Interceptor Service Company Name: _____
Address: _____
Phone: _____
Operator/Driver: (print) _____ (signature) _____

FOOD SERVICE ESTABLISHMENT PERSONNEL VERIFICATION INFORMATION

Name: _____ Title: _____
Signature: _____ Date: _____ Time: _____ am/pm

*The food service establishment may utilize a service record/manifest form provided by the service provider in lieu of this form as long as all of the information listed above is provided.

In Sept of 2012 SRU Decided to
Pilot a Mobile Web based
Operations Management
Software Program that Utilizes
Cloud Technology

Looking to

- View all scheduled grease trap/interceptor inspections easily
- Add or edit asset information as needed
- View real-time Status of work including; Inspections, location of field inspectors and work orders

Looking to Cont.

- Customize and configure asset information, workflows (inspection forms), schedules, notices and reports In House
- Send all notices and reports via email, mail or fax
- Create regulatory compliance reporting

Implementation Plan

- Setup Account – Establish User Roles
- Establish Asset Class; Naming, Attributes, Icon,
- Import Assets
- Build Electronic Form or Workflow

Implementation Plan Cont

- Build Custom Inspection Report in Google Docs
- Schedule Work/ Link to Google Docs
- Create Work Process Plan

NOTE: Normally can be completed in a single business day.

Setup Account

← User Editor

User

Accounts

Preferences

Security

Notes

History

Roles

*Available Roles

? Dispatcher

Add ▶

? Field Worker

Add ▶

Assigned Roles

◀ Remove

? Admin

Available Role Exceptions

? Access All Account Orders

Add

? Access Global Orders

Add

? Access My Account Orders

Add

? Autogenerate Work Queue for Scheduled Workflows

Add

? Billing Account Admin

Add

Role Exceptions

Remove ◀

? Can Change Asset Class On Asset



Has Right

Remove ◀

? Export To ESRI



Has Right

Create Asset Class

← Asset Class Editor ([334] FOG-Device) [PROTECTED(key: 6)]

Is Active

Details | **Attributes** | **Cost Data** | **Preferences** | **Advanced**



Name:

Description:

Asset Type:
Point

Default Asset Description:

Auto Generate Asset ID

Non-Linear Assets
Non-Linear Asset Class Icons
Work Due 
Work Completed 

Business Line(s)

- SALISBURY-ROWAN UTILITIES
- SRU Water

Asset Class Attributes- Define descriptive data to be collected on each asset


[Details] [Attributes] [Cost Data] [Preferences] [Advanced] [Checkmark]									
[Create]									
Key	Field	ACFID	Type	List	Parent	Default	Required	Visibility	Conditional
⬆ ⬇	Contact	197	Text				<input checked="" type="checkbox"/>		<input type="checkbox"/>
⬆ ⬇	Title	198	Text				<input checked="" type="checkbox"/>		<input type="checkbox"/>
⬆ ⬇	Address	196	Text				<input checked="" type="checkbox"/>		<input type="checkbox"/>
⬆ ⬇	Facility Name	195	Text				<input checked="" type="checkbox"/>		<input type="checkbox"/>
⬆ ⬇	Mail To	539999	Text				<input checked="" type="checkbox"/>		<input type="checkbox"/>
⬆ ⬇	Mailing Address	199	Text				<input checked="" type="checkbox"/>		<input type="checkbox"/>

Import Assets- GIS, Excel List, One at a Time


The screenshot displays the utilitycloud GIS interface. At the top, a navigation bar includes icons for a menu, SRU, Add Asset, Walk, Find, Clear, All Assets, and Traffic. Below this, a sidebar on the left contains a 'Reports' section with links for 'Workflow Summary', 'Workflows Complete', and 'Workflow Compliance'. The main section of the sidebar is titled 'SRU Water' and lists various asset types with checkboxes and expandable icons: Closed FSE, Fog Districts, FOG-Device (checked), (0%) Grease Interceptor, Inspection, Force Mains, Generators, Gravity Lines, Industrial Pretreatment, Manholes, and Non FSE. The main map area shows a geographic region with a network of roads and water bodies. Numerous red circular markers are placed across the map, representing individual assets. The map includes labels for various locations such as Franklin, East Spencer, Correll Park, Faith, and Rockwell. A 'Map' and 'Satellite' toggle is visible in the top left of the map area.

Use Shared Workflow or Your own Build Electronic Inspection Form or Workflow Editor

Generator Inspection

 Details

Form Fields

 Advanced

Is Active

Workflow Title:

Generator Inspection

Proximity Verification (in feet):

200

Disable Proximity Verification

Workflow Description:

Indicator Text



Size:

10

Material Cost:

0

Preview before saving

Avg Man Hours:

Provide user with reference on success

Form Fields Text, Date, Multi-Choice Select, Numbers, Signature, etc...

Key	Field	WFFID	Type	List
⬆️ ⬆️	Inlet Tee	2022	Multiple Choice	Ok, Not Ok, Not Evaluated, N/A
⬆️ ⬆️	Outlet Tee	2021	Multiple Choice	Ok, Not Ok, Not Evaluated, N/A
⬆️ ⬆️	Access Points	2020	Multiple Choice	Ok, Not Ok, Not Evaluated, N/A
⬆️ ⬆️	Condition of Walls and Bottom	2023	Multiple Choice	Ok, Not Ok, Not Evaluated, N/A
⬆️ ⬆️	Baffle Intact and Unobstructed	2024	Multiple Choice	Ok, Not Ok, Not Evaluated, N/A
⬆️ ⬆️	Flow Regulator	2036	Multiple Choice	Yes, No, N/A
⬆️ ⬆️	Maintenance Provider	2027	Text	
⬆️ ⬆️	Date Last Serviced	2028	Date	

Build Custom Inspection Report in Google Docs



FOG Program Coordinator
132 N. Main Street
Salisbury, NC 28144
Phone: 704-216-7568, Fax: 704-638-8481



Gerald Wood
Po Box 610
Rockwell, NC 28138
704-279-4550
selectbakery@carolina.rr.com

Facility Name: Select Bakery
Facility Address: 607 Palmer Road

Device Type: GI Device Rate: - Device Model: Per 55-8A
Trap Location: Left rear corner in grassy area Device Volume: 1500

Fat, Oil, Grease, and Wax (FOG) Control Program
Grease Interceptor/Trap Inspection Report
1/6/2014
Re-Inspection Required

Inspections

INSPECTION ITEMS (OK, NOT OK, NA)		MAINTENANCE RECORDS	
Access Points:	OK	Provider:	Valley Proteins
Outlet Tee:	NOT OK	Are Records Available:	YES
Inlet Tee:	NOT OK	Date Last Serviced:	11/6/2013
Condition of Walls and Bottom:	NOT OK	Amount Removed:	1500
Baffle Intact and Unobstructed:	NA	Maintenance Schedule:	90 days
Flow Regulator:	N/A	Kitchen Fixtures Consistent with Records:	YES

Measurements

Chamber	Additional Information
Grease: 52 inches	Solids interceptor: N/A
Solids: 6 inches	Rendering container: N/A

Action (Please click [here](#) or visit <http://salisburync.gov/> for additional FOG Program information.)

Observations/Comments:	Ensure each grease device service record is kept on site for 3 years. Observed high water level with inlet and outlet tees nearly submerged. Water was gurgling in the outlet tee. Noted grease accumulation in the lift pump vault with high water level. Appeared to have gutter downspout connected to the lift pump.
Corrective Actions:	GI and lift pump needs to be evaluated to determine operating properly. Storm water discharge to sanitary sewer is prohibited. If corrugated pipe discharging into lift pump vault is storm water, cap or remove pipe to eliminate storm water discharge going to lift station.]
Corrective Action Due by:	2/7/2014 (please call 704-216-7568 to schedule a re-inspection when work is complete)

Inspected By: Teresa Barringer
Date: 1/6/2014
CC: tbarr@salisburync.gov

Ron
Facility Representative

Schedule Work-Frequency, Start Date, Stakeholder

Schedule Work

1 Select the assets to be worked on:

FOG-Device

2 Select the work to do:

Grease Interceptor Inspection

3 Perform work every:

1

Years

Starting:

01/01/2016 12:00 AM

4 Select who is informed about the progress of work:

FOG Inspector

AESC Admin for SRU

✕ Remove

FOG Inspector

Sonja Basinger

✕ Remove

+ Add Additional Stakeholders

Setup Report Generation Google Doc

Reporting (Optional)

1 Select the Google Sheet to publish each time this work is performed:

Google Workbook:

FOG Report

Report Tab:

Report

2 Publish report to:

Workflow Scheduled Stakeholders

Workflow Stakeholders

Asset Class Stakeholders

Asset Stakeholders

Account Stakeholders

Asset Attachments

3 Insert data to this Google sheet before publishing:

[? report publish help](#)

Google Workbook:

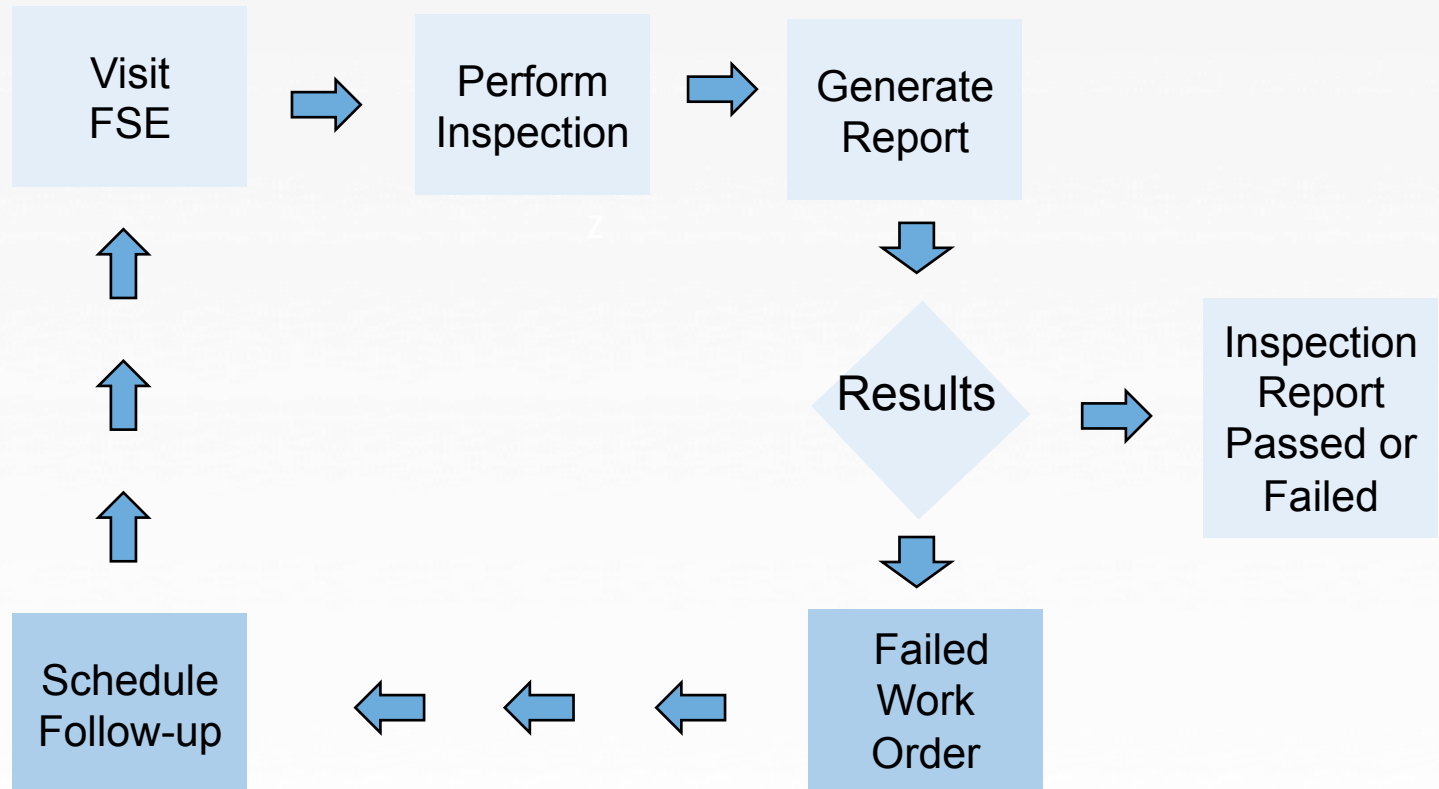
FOG Report

Data Log Tab:

Data



Inspection Workflow Process



Logging in -Dash Board

Map	My Work	Assets	Works
Asset Classes	Workflows	Work Scheduler	Work Queues
Users	Accounts	Audit Trail	Message Service
Security Roles	Stakeholder Roles	Asset Icons	Analytics
Business Lines	List Definitions	Sequences	Work Report
Asset List Filter	QR Code Scanner	Jobs	Store

Global Work (1)

Grease Interceptor Inspection

FOG-Device
2% Work Complete
6% Time Complete

Work Orders (2)

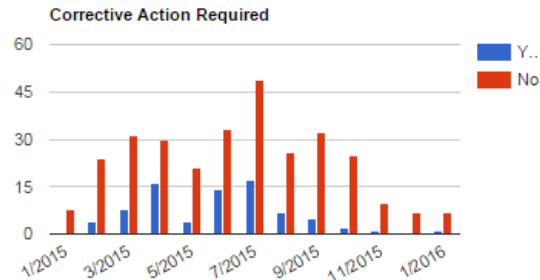
Grease Interceptor Inspection

Major Repair Due 05/01/2015
Liberty Commons (fog-223)
Manual Comments |
Have a NC Licensed Plumber verify or install a...
AESC Admin for SRU 4/1/2015 1:29:20
PM

Grease Interceptor Inspection

Major Repair Due 05/01/2015
Wilco Hess - 3410 S Main St (fog-005)
Manual Comments |
Have a NC Licensed Plumber verify or install a...
AESC Admin for SRU 4/1/2015 2:01:30
PM

Corrective Action Required



My Messages

Ari's. Pizza - Grease Interceptor Inspection

Workflow Report Results.
Click here to open the results.
 1/21/2016 4:15:47 PM

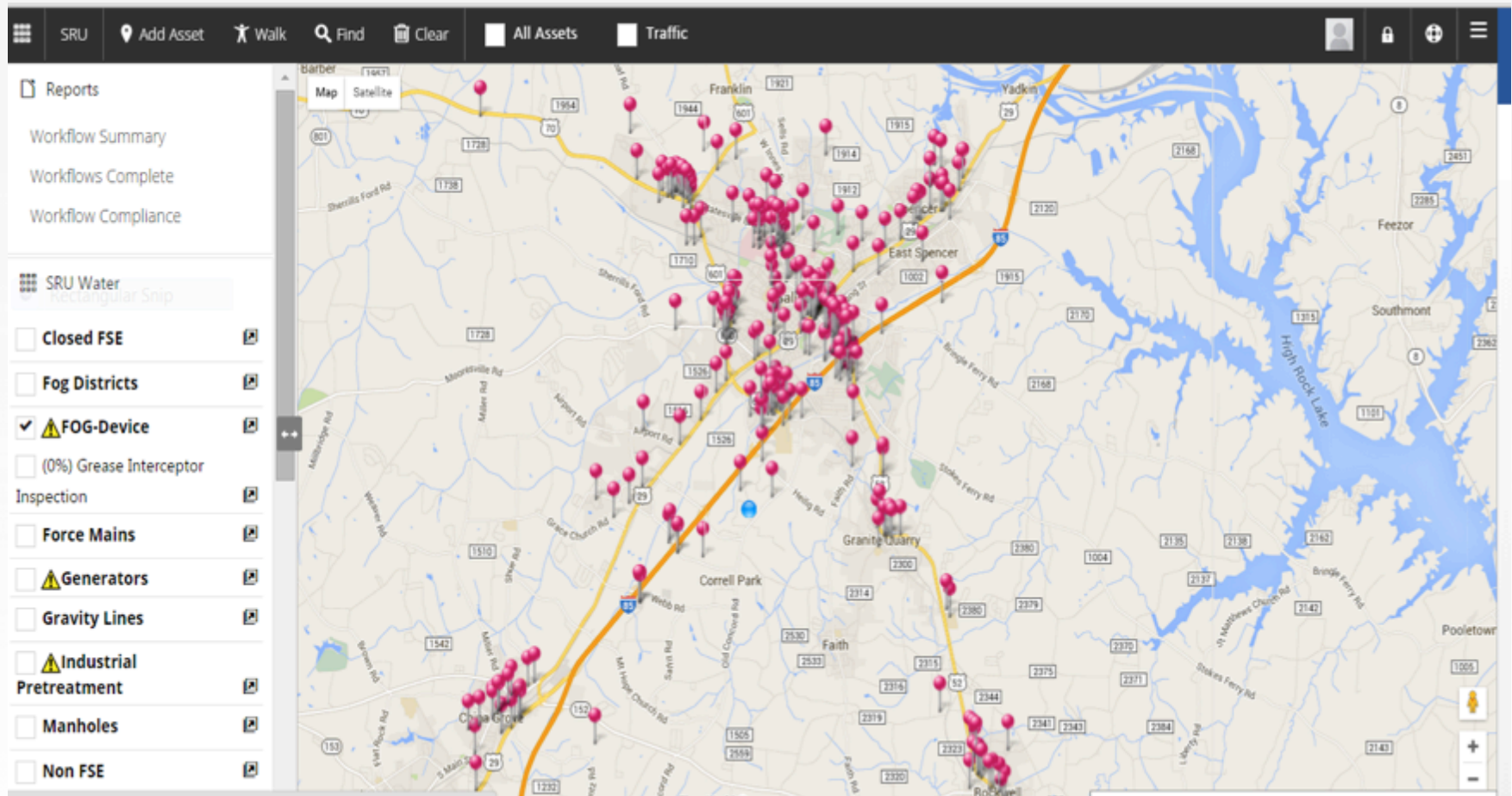
Ari's. Pizza - Grease Interceptor

ps://uclid.us/app/views/userrole.html

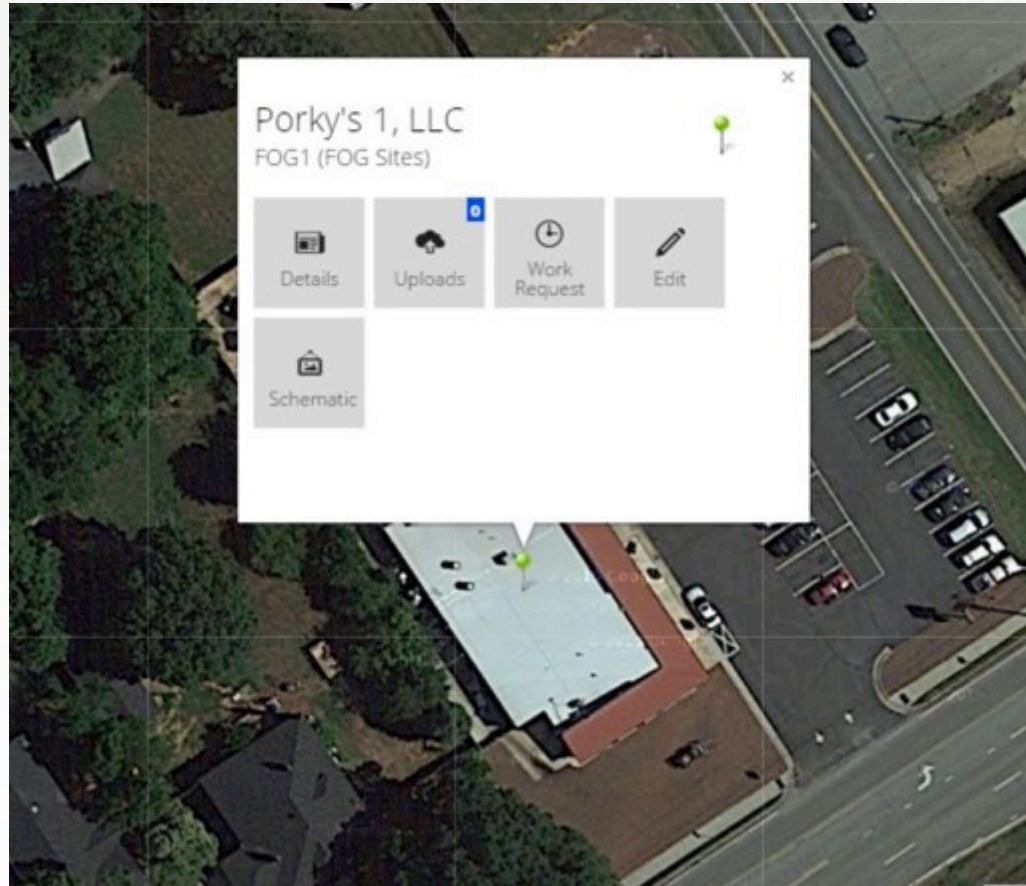
Location of Field Staff



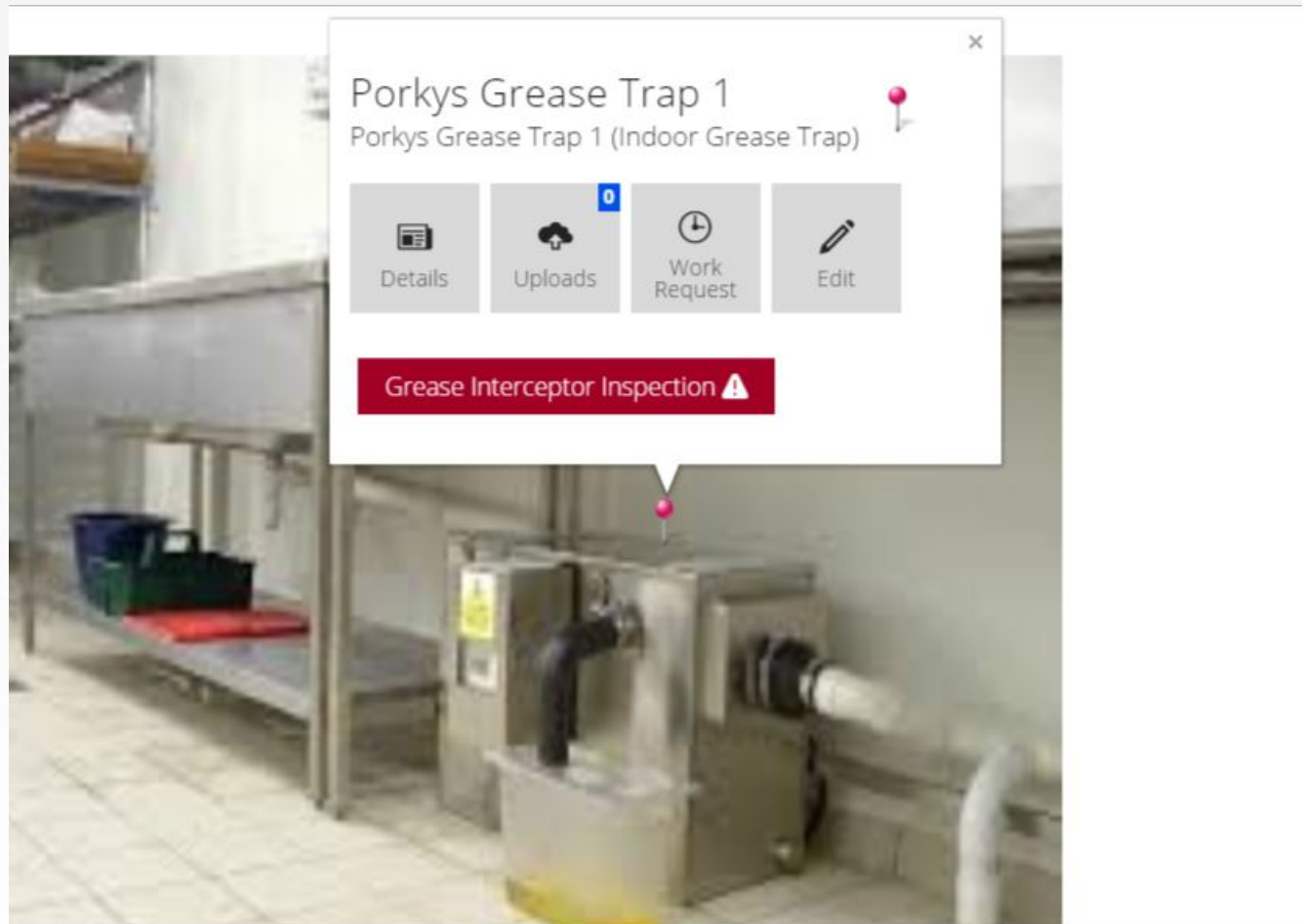
Visual of Inspection Site



Visit Site Click Icon



Show Grease Trap Inside the Kitchen



Open and Complete Workflow

← Porky's 1, LLC (fog-143)

Grease Interceptor Inspection

Admin Timestamp:
01/16/2016 03:14 PM

Workflow Fields

Inlet Tee:
[Dropdown] **▲ Inlet Tee is required**

Outlet Tee:
[Dropdown] **▲ Outlet Tee is required**

Access Points:
[Dropdown] **▲ Access Points is required**

Condition of Walls and Bottom:
[Dropdown] **▲ Condition of Walls and Bottom is required**

Asset Attributes [Edit](#) ▼

Title (Description)	Value
Contact	Ricky & Michelle Register
Title	Owner
Address	1309 N. Main Street, China Grove
Facility Name	Porky's 1, LLC
Mail To	Ricky & Michelle Register
<i>(Owner)</i>	
Mailing Address	PO Box 347
City	Landis
State	NC
Zip	28088
Phone	704-202-0332
Type	GI
Model	Unknown
Volume	1200
<i>(Gallons)</i>	
Rate	0
<i>(GPM)</i>	
Device Location	Rear of building in asphalt area
District	G

Workflow History ▼

Asset Work History


Access Points: <input type="text"/>	(Gallons) Rate 0
⚠ Access Points is required	(GPM)
Condition of Walls and Bottom: <input type="text"/>	Device Location Rear of building in asphalt area
⚠ Condition of Walls and Bottom is required	District G
Baffle Intact and Unobstructed: <input type="text"/>	
⚠ Baffle Intact and Unobstructed is required	
Flow Regulator: grease trap only <input type="text"/>	
⚠ Flow Regulator is required	
Maintenance Provider: <input type="text"/>	
Date Last Serviced: mm/dd/yyyy <input type="text"/>	
Amount Removed: <input type="text"/>	

Workflow History	
◀▶	
File Date: Wed Feb 11 2015 13:51:00 GMT-0500 (Eastern Standard Time)	
Filed By: Teresa Barringer	
Description	Value
Inlet Tee	OK
Outlet Tee	OK
Access Points	OK
Condition of Walls and Bottom	OK
Baffle Intact and Unobstructed	OK
Flow Regulator	N/A
Maintenance Provider	ERCO
Date Last	2015-02-11

Sign and Save Workflow



Deadline to have corrective actions completed:
mm/dd/yyyy --:-- --

Facility Representative:

 Facility Representative is required

Witness Signature:

[Clear](#)

 Save  Cancel

Powered by Utility Cloud™

Inspection Report is Automatically Generated and Emailed to Owner



FOG Program Coordinator
 132 N. Main Street
 Salisbury, NC 28144
 Phone: 704-216-7568, Fax: 704-638-8481



Ricky & Michelle Register
 Po Box 347
 Landis, NC 28088
 704-202-0332
 tbarr@salisburync.gov

Fat, Oil, Grease, and Wax (FOG) Control Program
Grease Interceptor/Trap Inspection Report
2/11/2015

Facility Name: Porky's 1, LLC
Facility Address: 1309 N. Main Street, China Grove

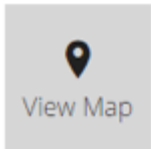
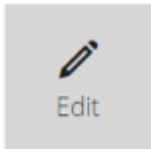
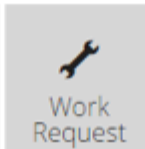
Device Type: GI **Device Rate:** 0 **Device Model:** Unknown
Trap Location: Rear of building in asphalt area **Device Volume:** 1200


Inspections

INSPECTION ITEMS (OK, NOT OK, NA)		MAINTENANCE RECORDS	
Access Points:	OK	Provider:	ERCO
Outlet Tee:	OK	Are Records Available:	YES
Inlet Tee:	OK	Date Last Serviced:	2015-02-05
Condition of Walls and Bottom:	OK	Amount Removed:	1000
Baffle Intact and Unobstructed:	OK	Maintenance Schedule:	90 days
Flow Regulator:	N/A	Kitchen Fixtures Consistent with Records:	YES


Asset Details

← Asset Details

 View Map  Edit  Work Request

 Porky's 1, LLC (fog-143)

 Overview  Work History  Attachments  Notes  Asset Relationships  Asset History

 Porky's 1, LLC (fog-143)

Account: SRU Water
Class: FOG-Device
Installed: 8/27/2012

Created Date: 2/1/2015
Created By: Mark Moreau


Attributes





1 of 10





Work History


 Overview

 Work History

 Attachments

 Notes

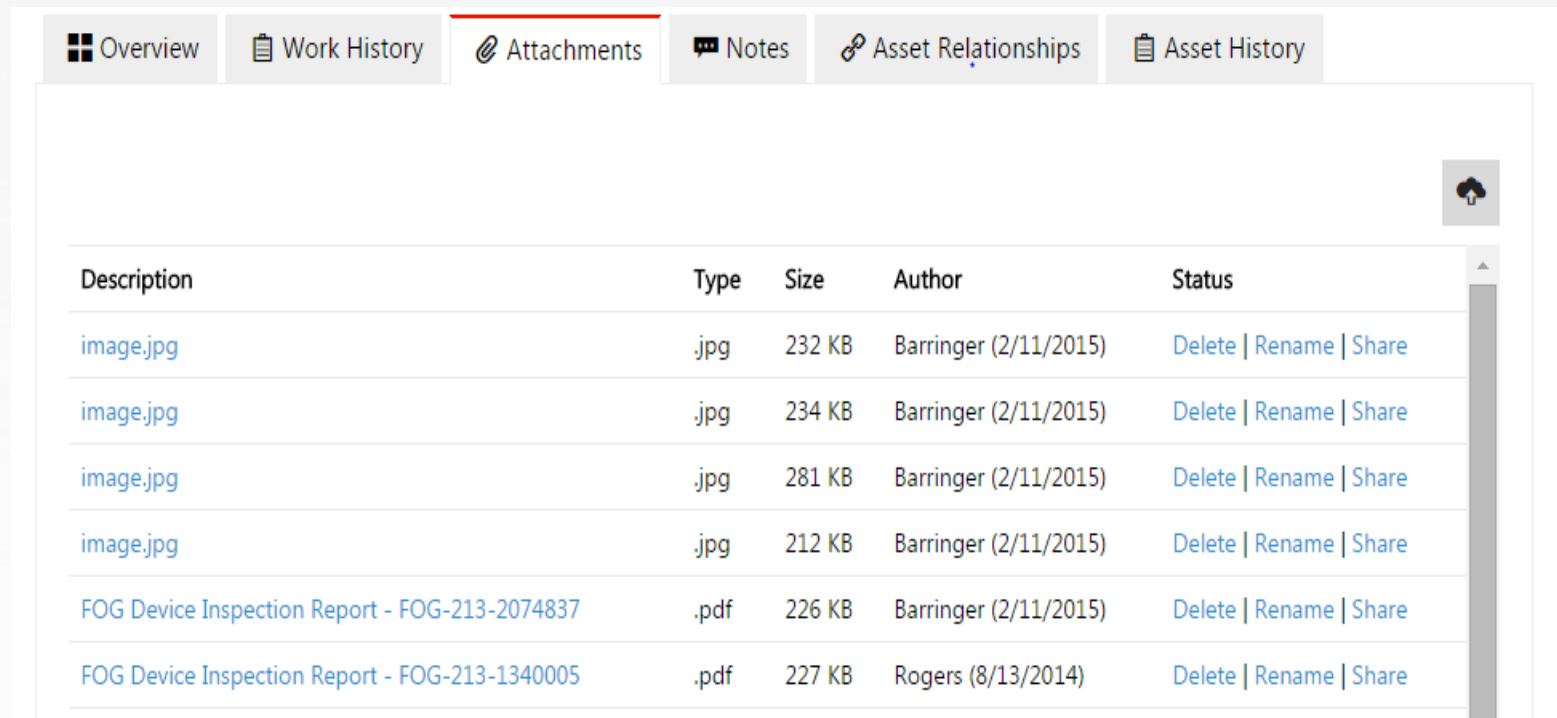
 Asset Relationships

 Asset History



Type	Date	Description	Status
WF	2/11/2015 1:51:00 PM	Grease Interceptor Inspection	View
WO	8/13/2014 8:37:00 AM	Grease Interceptor Inspection	View
WF	7/29/2014 1:32:00 PM	Grease Interceptor Inspection	View
WF	8/12/2013 1:39:00 PM	Grease Interceptor Inspection	View

Attachments- Folder for Pictures, As Built Drawings, O & M Manuals MSDSs, SOP Manuals etc...



The screenshot shows a software interface with a navigation bar at the top containing tabs: Overview, Work History, Attachments (selected), Notes, Asset Relationships, and Asset History. Below the navigation bar is a table of attachments. The table has columns for Description, Type, Size, Author, and Status. The 'Status' column contains links for Delete, Rename, and Share. There are six rows of data, including four image files and two PDF reports.


Description	Type	Size	Author	Status
image.jpg	.jpg	232 KB	Barringer (2/11/2015)	Delete Rename Share
image.jpg	.jpg	234 KB	Barringer (2/11/2015)	Delete Rename Share
image.jpg	.jpg	281 KB	Barringer (2/11/2015)	Delete Rename Share
image.jpg	.jpg	212 KB	Barringer (2/11/2015)	Delete Rename Share
FOG Device Inspection Report - FOG-213-2074837	.pdf	226 KB	Barringer (2/11/2015)	Delete Rename Share
FOG Device Inspection Report - FOG-213-1340005	.pdf	227 KB	Rogers (8/13/2014)	Delete Rename Share

Asset Relationship - Upload Picture or Schematic

Overview Work History Attachments Notes Asset Relationships Asset History

+

Component Schematic



Google Map data ©2016 Google Terms of Use Report a map error


Upload Schematic


Choose File No file chosen Save Remove

- Grease Trap
- Porkys Grease Trap 1

Edit- Move Asset, Edit Attributes

← Asset Editor

 Details

 Advanced

Active

Asset ID:

fog-143

Account:

SRU Water

Asset Class:

FOG-Device

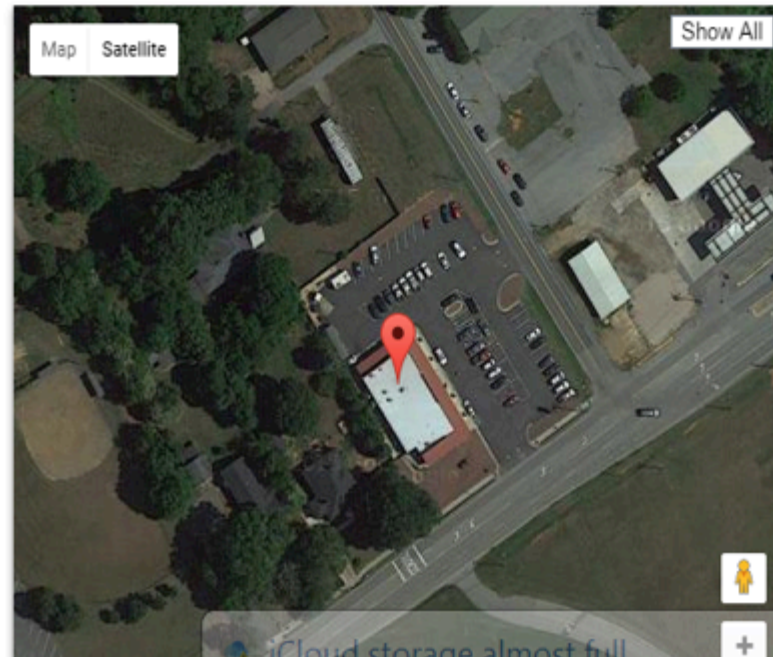
Asset Description:

Porky's 1, LLC

Date Installed:

08/27/2012

Parent Asset Key:



Work Order Tile- Assign staff, workflow, Due Date, Prioritize, Type

← Work Order Create



Porky's 1, LLC
fog-143 (FOG-Device)

Description of Work:

Assigned



Select Workflow

click here to select a workflow



Due:

mm/dd/yyyy

Priority:

Type:

Add Cancel

Conclusion

2

How Did this Public Utility Increase Productivity for Annual FOG Inspections?

By Applying

Information Technology also called a

Mobile Operations Management Tool

Results

- Measurable Time Savings - 40%
Less Staff Time to Complete Program
- Real-time access to Asset Data –
Everybody Knows What's Going On
- Increased Customer Compliance –
The Number One Goal of the
Program

Questions?

Ricky Langley
(252) 714-5791

ricky.langley@utilitycloud.us

www.uclid.us

Booth C 4th Floor

