



Wastewater
Treatment
Technologies

NitROE® 2KM Waste-Water Treatment System

Summary Update

2024



NitROE[®] 2KM WWTS Concept

Treats Flowrates Ranging from 700 to 2,000,000 Gallons per Day

Apartment Buildings, Condominiums,
Retail Facilities, Housing Developments,
Small Communities

Air Pump
w/Remote
Sensor

Close to Surface
with
Access Ports

Step 4. Permitted
Discharge
Or Reuse (Goal)

Step 1
Enhanced Settling
Tank (EST)

Step 2
Submerged
Aeration
Chamber
(SAC)

Step 3
Denitrification
Chamber
(DC)

NitROE[™] System Goal - 100 percent gravity flow

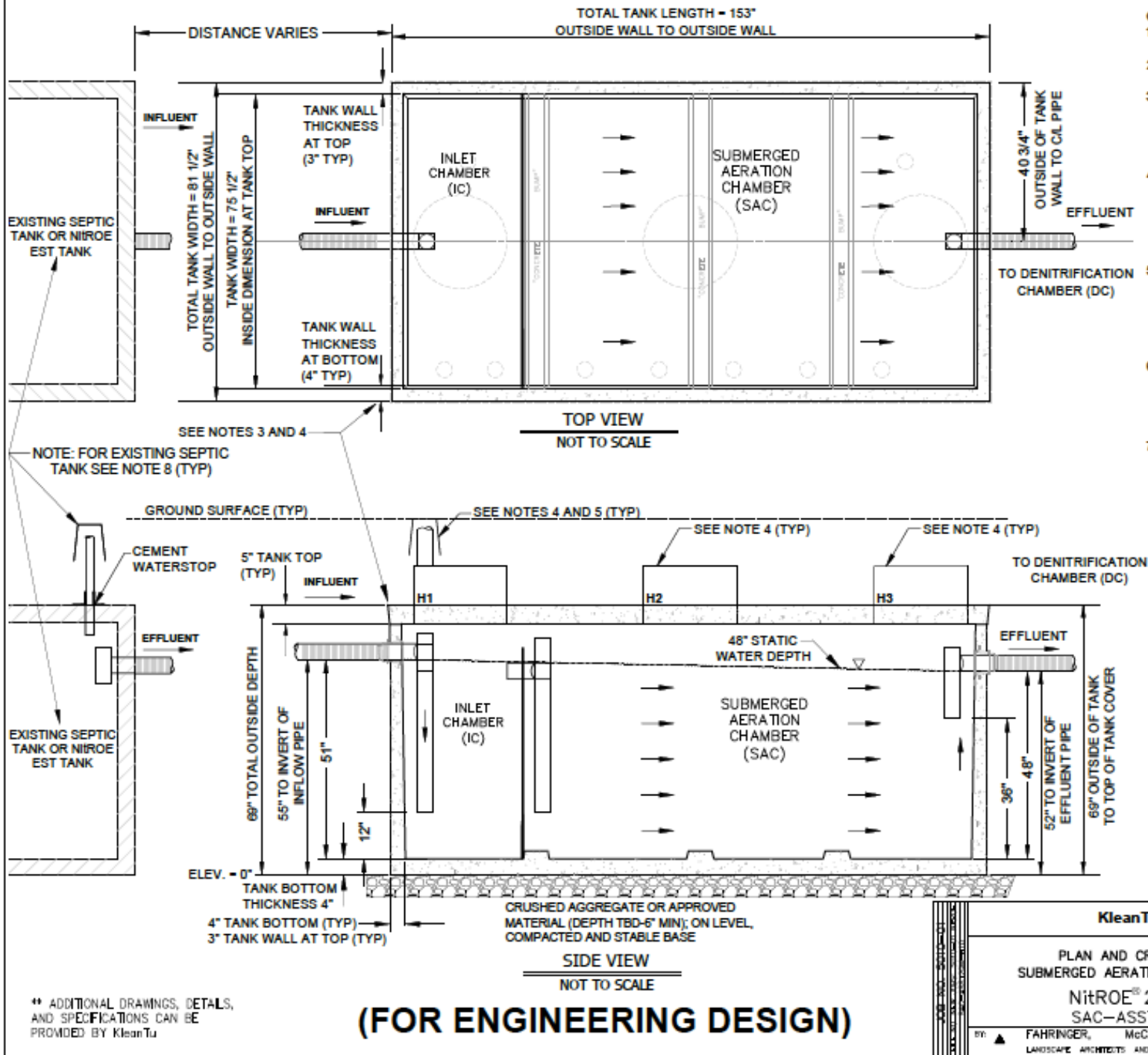
SOIL

GROUNDWATER



2,000-Gallon Aeration Tank for Nitrification

(13'L x 7'W x 6'D)



** ADDITIONAL DRAWINGS, DETAILS, AND SPECIFICATIONS CAN BE PROVIDED BY KleanTu

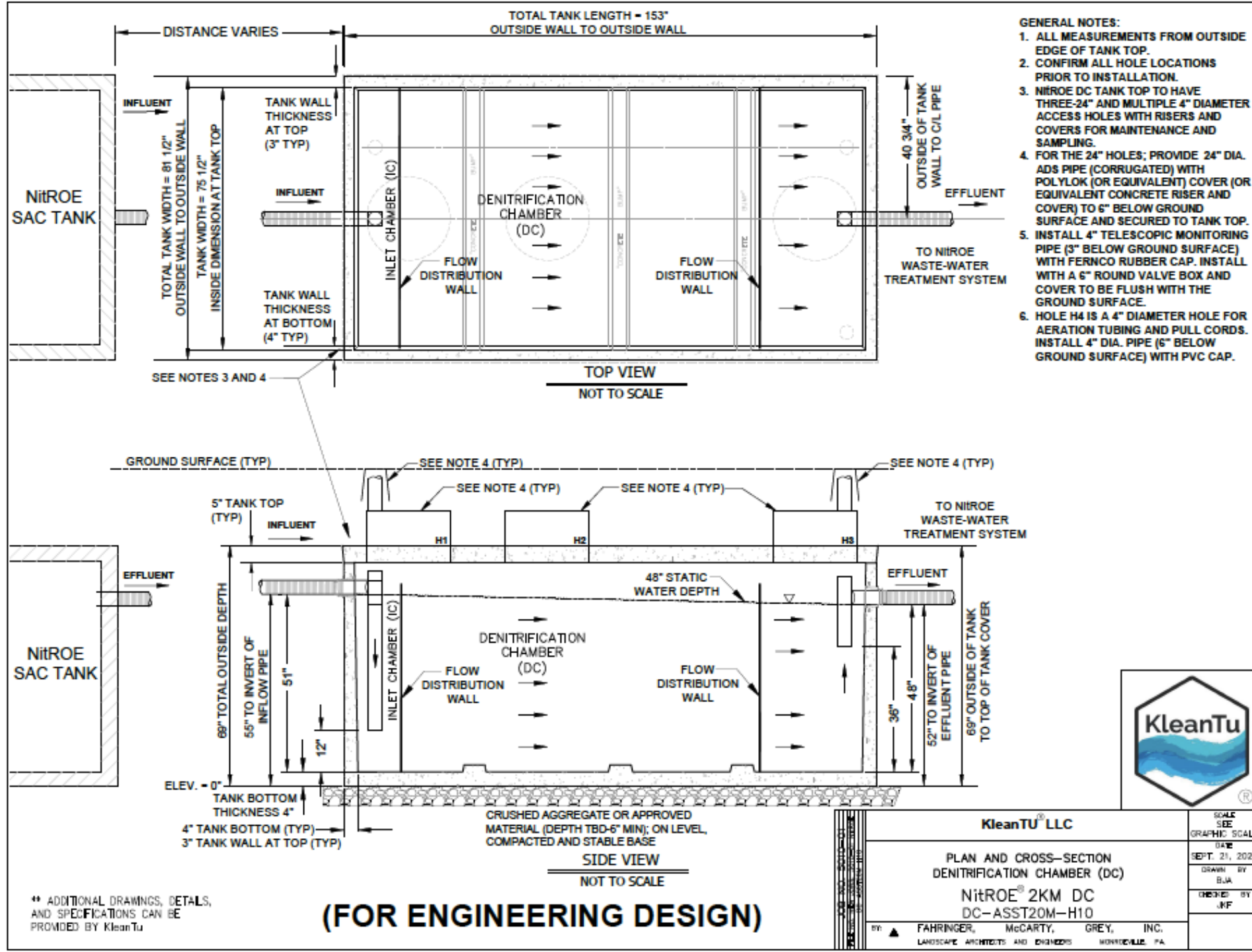


KleanTu® LLC		SCALE SEE GRAPHIC SCALE
PLAN AND CROSS-SECTION SUBMERGED AERATION CHAMBER (SAC)		DATE SEPT. 21, 2021
NitROE® 2KM SAC SAC-ASST20M-H10		DRAWN BY B.J.A.
BY: FAHRINGER, McCARTY, GREY, INC. LANDSCAPE ARCHITECTS AND ENGINEERS MONROEVILLE, PA.		CHECKED BY J.K.F.



2,000-Gallon Denitrification Tank

(13'L x 7'W x 6'D)





2024 NitROE® 2KM Installation

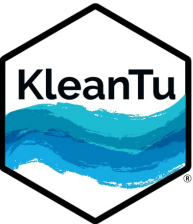


NitROE® 2KM WWTSs - 2,000 gpd

MV Island Housing Trust (12/2019)



	<u>Average</u>	<u>Median</u>
• Total Nitrogen.....	8 mg/l	4.7 mg/l
• BOD5.....	22 mg/l	9.25 mg/l
• TSS.....	21 mg/l	16.0 mg/l
• Alkalinity.....	233 mg/l	260.0 mg/l (as CaCO3)
• pH.....	6.7	6.7



Our Design Focus is Simplicity of

- **Fabrication**
- **Installation**
- **Operation**

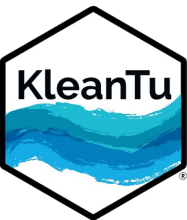
TO DELIVER

A Highly Treated Wastewater

AT

LOW COST

***Same Performance and Dependability as
Centralized Treatment Systems***



The DOs & DON'Ts of Your NitROE® WWTS

Avoid flushing the following items down your drain:

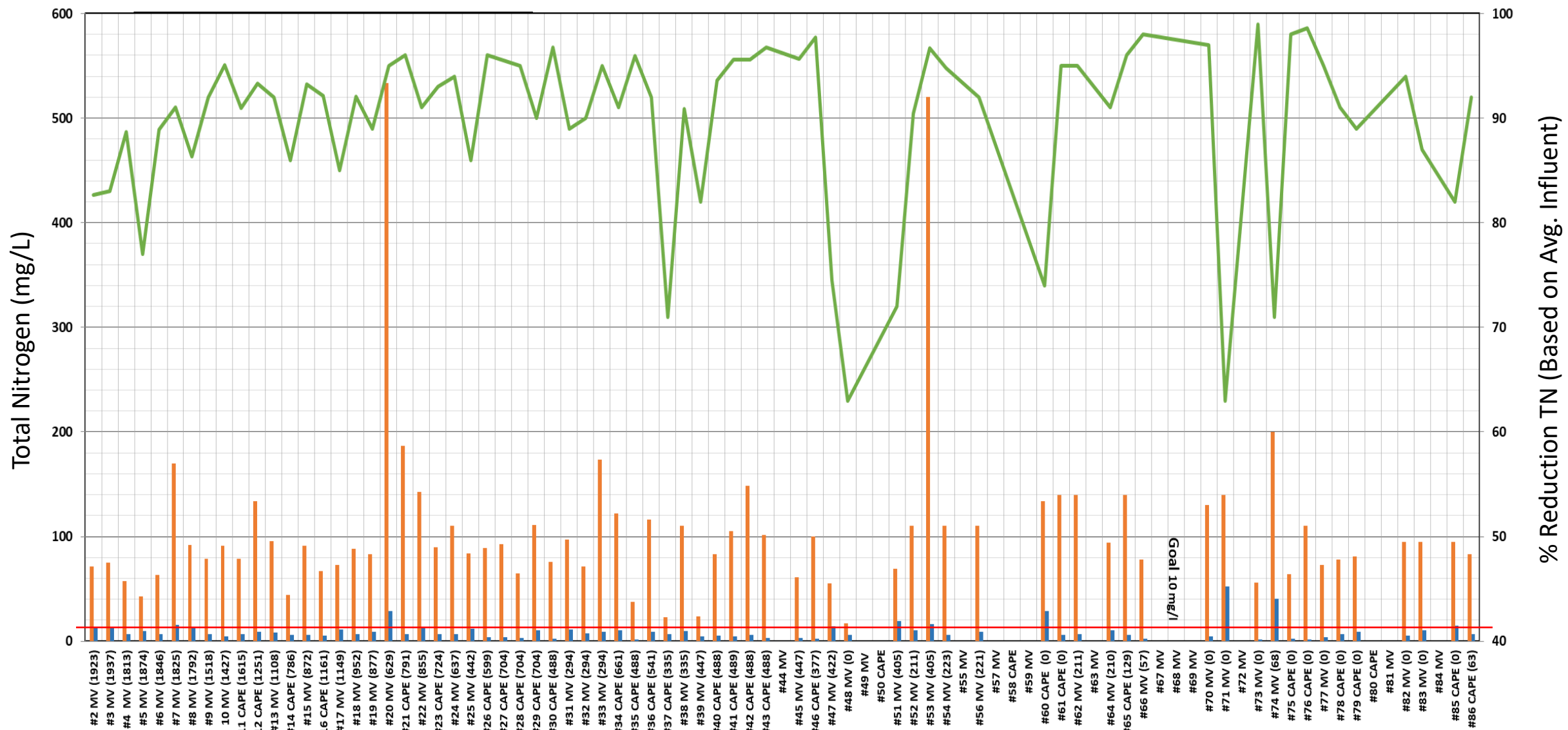
- Cooking Grease
- Baby Wipes/Cleaning Pads
- Q-Tips/Cotton Balls
- Pills
- Paints and/or Solvents
- Food
- Drain Cleaning Products
- Dental Floss
- Diapers
- Paper Towels
- Personal Hygiene Products
- Strong Chemicals (Acids/Bases)
- Highly Concentrated Chlorine

- *Flushing these items down the drain will clog pipes & could result in costly repairs for any septic system, including conventional systems*
- *With a NitROE® added to the septic system, these repairs could be more complex, more expensive & disrupt the biological treatment process*



Average Total Nitrogen – Influent & Effluent

INFLUENT - Average - Total Nitrogen = 107 mg/l
EFFLUENT - Average - Total Nitrogen = 9 mg/l
% Reduction (Based on Avg. Influent) = 91%

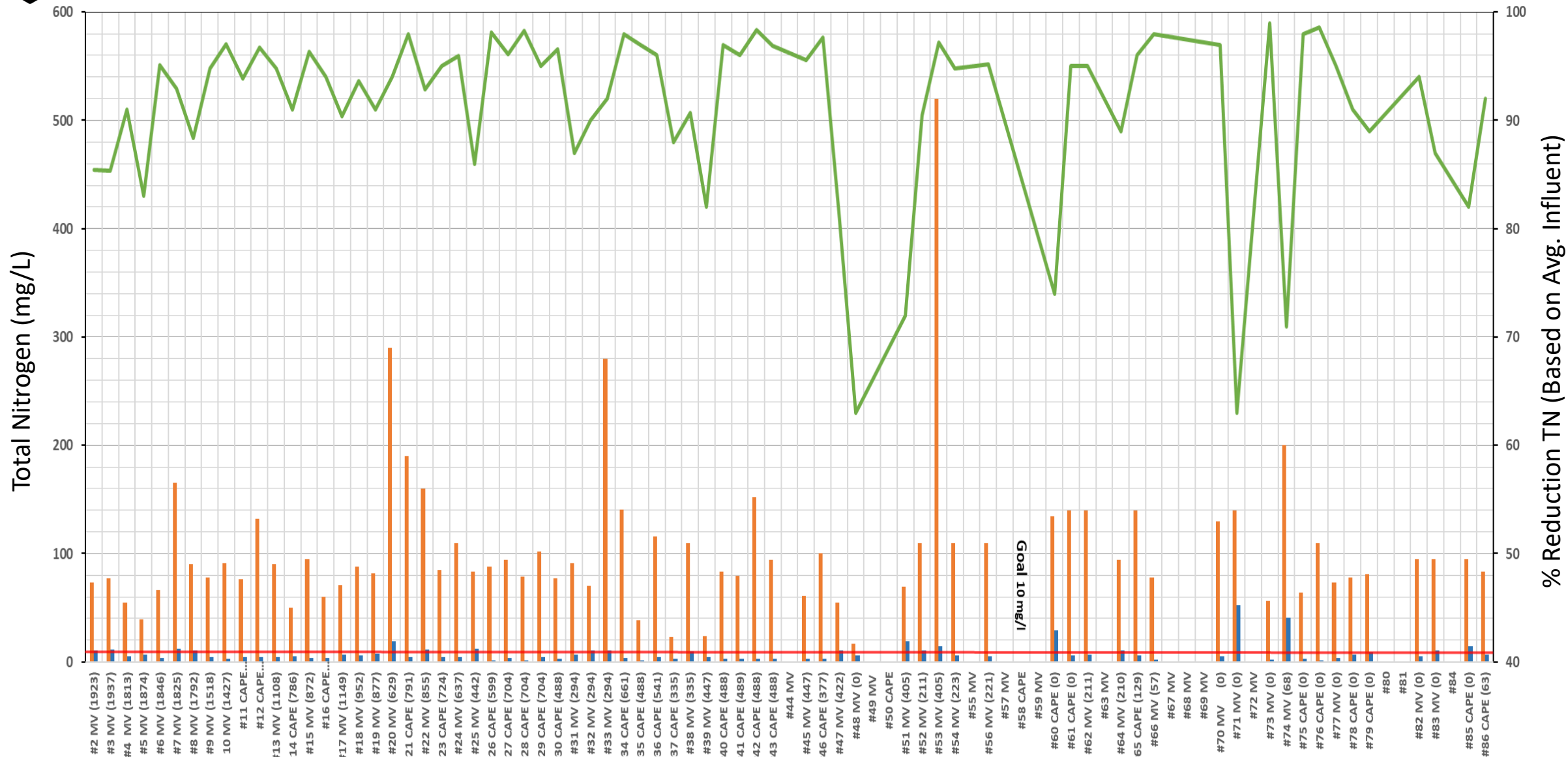


Installation #; Location (MV/Cape); Total Days in Operation



Median Total Nitrogen – Influent & Effluent

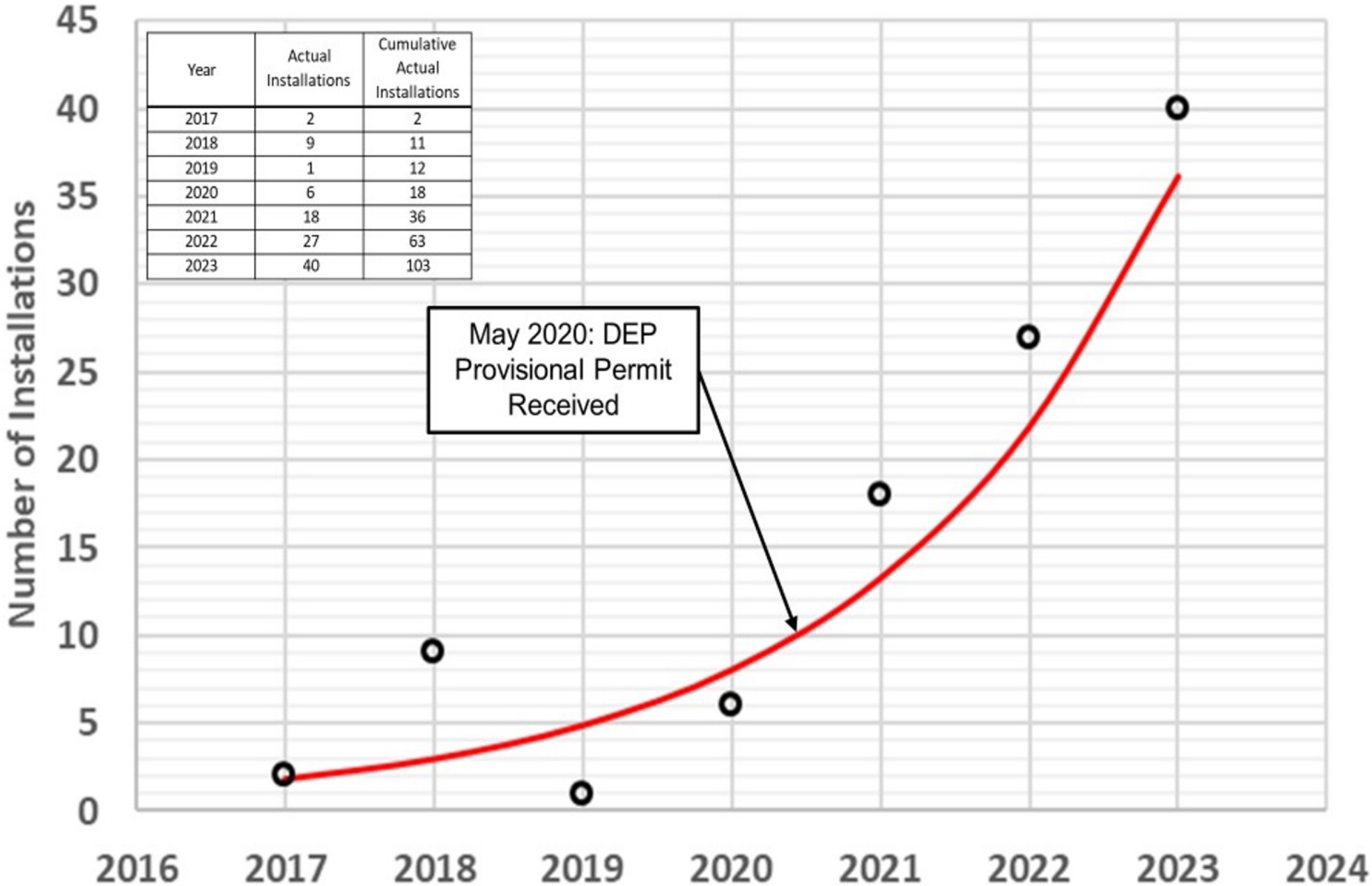
INFLUENT - Median - Total Nitrogen = 91 mg/l
EFFLUENT - Median - Total Nitrogen = 5 mg/l
% Reduction (Based on Median Influent) = 94%





103 NitROE®
Installs from
2017-2023

110 NitROE®
Installs
Currently





Background Links of Cape Cod Nitrogen Issue and NitROE® WWTS Technology

1. White Paper on Cape Cod Nitrogen Issue Due to Septic Systems:
<https://www.newea.org/2020/10/09/distributed-nitrogen-removing-i-a-septic-systems-a-2020-primer-for-cape-cod/>.
2. Video on Town of Barnstable Septic Wastewater Plan of NitROE® WWTS Technology:
<https://vimeo.com/480777210>
3. Link to Overview Video of a Conventional Title 5 Septic System
https://www.youtube.com/watch?v=zDggET_UGOg&feature=youtu.be
4. Link to Overview Video of KleanTu's NitROE® 2KS Waste-Water Treatment System (WWTS) as a Supplement to a Conventional Title 5 Septic System for Enhanced Total Nitrogen Reduction
<https://youtu.be/wgOP-WDXxww>



FOR INFORMATION

Contact
Maureen Thomas
mthomas@kleantu.com