RESOLUTION
REQUESTING NEW YORK STATE RURAL WATER'S
ASSISTANCE WITH SMOKE TESTING OF COLLECTION SYSTEM

BE IT HEREBY RESOLVED, that the Town Board, Town of Amsterdam requests New York State Rural Water to provide assistance with smoke testing of collection system;

FURTHER RESOLVED, that the Town Board, Town of Amsterdam authorizes Thomas P. DiMezza, Town Supervisor to sign Hold Harmless & Indemnification Agreement with New York State Rural Water Association, Inc.

Sponsored by:
Seconded by:

Adopted this 15th day of March 2023.

_____
Linda Bartone Hughes, Town Clerk

New York Rural Water Association, Inc.
P.O. Box 487
Claverack, NY 12513
518.828.3155
www.nyruralwater.org

NEW YORK RURAL WATER ASSOCIATION, INC.

HOLD HARMLESS & INDEMNIFICATION AGREEMENT

The undersigned Town/Village/City/Entity agrees to hold harmless the New York Rural Water Association (hereafter NYRWA), its Board of Directors, agents, servants and employees, and all affiliated entities thereof as may now or may hereafter exist, against all claims, suits, losses or expenses by reason of any liability arising out of or in consequence of the performance of the NYRWA assistance provided and/or imposed by law upon any and all loss or damage, claim, demand, suit or action including death, damage to property, and from all costs and expenses incurred on account of any such claim, including, without limitation, attorneys' fees and disbursements, caused by or directly or indirectly arising throughout the duration of any work/assistance provided by the NYRWA and authorized under the Town/Village/City/Entity receiving such assistance, except in the case of negligence caused by NYRWA.

Town/~~Village/City~~/Entity: Amsterdam

By: _____

Title: Town Supervisor

Date: 03/15/2023

New York Rural Water Association, Inc.

By: _____

Title: _____

New York Rural Water Association

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To help NYRWA provide your system with smoke testing, there are a few things that should be done before the actual smoke testing begins:

1. Do you have maps of the collection system and other information that will help in defining what needs to be done?
2. Try to determine the age or ages (if system was installed at different times) and start with the oldest areas first.
3. Divide the system into workable areas: (Do not try to do too much at one time).
4. Using the Manhole Inspection Report supplied with your info packet try to do a dry weather and wet weather flow comparison.
5. Please have a copy of the consent schedule available and any other information that may be helpful (i.e. engineering studies).

NYRWA will work with you if you are not sure what is needed to start a collection system inflow and infiltration (I & I) evaluation.

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BENEFITS of Smoke Testing a Collection System

Smoke Testing is one of the most efficient and cost effective ways to locate and identify the source of an overflow or infiltration problem! It is important to find and identify these sources because they may seriously affect the efficiency of the wastewater treatment facility and increase operating expenses.

Some examples of the impact that ***Inflow*** and ***Infiltration*** may cause are as follows:

-Pump Stations handling large volumes of unnecessary water.

-Hydraulic Overloads that will greatly reduce system efficiency.

-Increased operating expenses due in the processing of ground water and storm water that does not require treatment.

-Unnecessary equipment wear.

-Increased collection system maintenance and cleaning.

There are a few factors to consider when deciding if implementing a smoke testing program will be beneficial to your system .What are the age and type of materials used in the collection system? Many sanitary systems are 50–100 years old and are constructed of out-dated materials. Over time joints weaken and roots break in the lines that will permit excessive infiltration during wet periods.

The presence of undesired connections such as basement and yard drains, catch basins, cross connections from storm sewers, foundation drains and roof down spouts will cause elevated flows every time it rains. The easiest ways to tell if this exists in your collection system is to have a look at the plant's flow meter.

Smoke testing is a very quick and easy way to determine if buildings are properly connected to your system. Smoke should exit vent stacks of the surrounding properties within the testing area. If traces of the smoke or if odor enter the building, it is an

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indication that gases from the sewer system may also be entering. Smoke that enters a building can cause panic and stress to an unsuspecting individual. This will require some good public relations skills and allow for an opportunity to stress the importance of correcting the problem. Remind them that the smoke entering the building is their friend. If smoke is entering their home or business, DANGEROUS GASES could be entering as well. The smoke that is manufactured specifically for testing is not dangerous or toxic, leaves no residuals or stains, and has no effect on animals or plants. It has a distinctive, but not unpleasant, odor. The visible smoke and odor will only last for a few minutes where there is adequate ventilation. Sewer gases are dangerous! A few of these gasses have no odor and present the most serious problem because they can enter a building undetected. These gasses can cause anything from minor illness to death. Indentifying and correcting of any source of any smoke entering a building is urgently advised.

Possible causes for smoke entering the building are:

> ***The vents connected to the building's sewer lateral are inadequate, defective, or improperly installed.***
>
> ***The traps under sinks, tubs, basins, showers, floor drains, etc. are dry, defective improperly installed, or missing.***
>
> ***The pipes, connections, and seals of the building's sewer system are damaged, defective, have plugs missing, or are improperly installed.***

In the end, if the situation is handled properly, the property owner is usually grateful for the assistance and information that you provide.

Smoke testing can also be very useful in locating "lost" manholes. Although collection systems can cost millions of dollars they are often the first thing to be neglected when there is a decrease in funding and staffing levels because they are out of sight and out of mind until a problem occurs. The biggest benefit of conducting a smoke testing program is the high visibility and learning opportunities of the staff by being out in the collection system for a few days.

The public, in general, has a preconceived notion that the wastewater treatment plant operators don't do much. Make sure to seize the opportunities that will arise while conducting this testing to explain what you are doing. You will be surprised how grateful they are! Staff will also be provided a great chance to familiarize themselves with the design, function, location and condition of the collection system that they seldom have a chance to get out and work in.

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How does smoke testing work?

Smoke testing is conducted by placing a blower over a centrally located manhole and forcing non-toxic smoke-filled air through a sewer line. Depending on the equipment being used the smoke will be generated by lighting a smoke bomb or utilizing liquid smoke. Using liquid smoke will generally cut your labor costs. The smoke under pressure will fill the main lines plus any connections, and then follows the path of the leak to the ground surface quickly revealing the source of the inflow and infiltration. Only enough force to overcome atmospheric pressure is required.

After placing the blower and filling the lines with smoke, staff will have to perform a visual inspection of the area being tested. When using liquid smoke, you control the time you want to run it. Typically, you will let the smoke run until the crew has ample time to do a thorough inspection. A field crew should consist of a minimum of two people.

You should check all connected lines, including abandoned and supposedly disconnected service lines. Don't rush because minor leaks can easily overlooked. It is important to carefully check around houses with close attention given to cleanouts and roof drains. It is not uncommon to see smoke coming out of the grass, wooded areas, or cracks in the pavement. If smoke is found during the inspection it must be carefully recorded so that it can be corrected after the testing. Cameras make the job easier because a picture will help you to relocate the problem after testing so that you can take corrective measures. It is also proof of the leak found.

Blocking off a sewer line should <u>not</u> be necessary except when isolation is important. As long as openings exist for the smoke to follow, smoke tests are effective, regardless of surface type, soil type and depth of lines.

Best results are obtained when the water tables are low and on dry days because water is an excellent vapor barrier. Smoke testing should be avoided on windy days because even a very light breeze can disperse a wisp of smoke before it is visible at the source of a leak.

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Preparing to Smoke Test

Smoke test may involve many hours of labor, has the potential to affect the occupants of all buildings connected to the collection system, disrupt traffic, and cause people to summon Emergency Personnel. Therefore, advance preparation is essential to a successful smoke-testing program.

You must determine what areas of the collection system you would like to test and choose a reasonable period of time that you can truly devote enough staff to perform this work correctly.

You should obtain a comprehensive map with street names, addresses and the overall picture of the area to be tested. This map will show where the manholes are and which direction the lines flow. It will also show you where there are force mains, storm drains and any other items of importance. This is an excellent map to include your notes on. Good notes will prevent delays on the job. Manholes to be used for the blower placement should be predetermined and accessed prior to commencing the test. This will save a tremendous amount of time. When choosing the manholes to use always try to avoid busy intersections because creating a detour or closing an intersection will upset some drivers, thus causing dangerous situations.

Notification Procedures

Get a list of all property owners that are in the surrounding area of the vicinity that you have chosen to test. The people that do the billing are usually very helpful. Approximately two weeks in advance of the starting date, you must send the owners notification letters that include all pertinent information to the homeowner. This letter should be similar to the following sample:

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(Sample letter)

Dear Resident,

The Water Pollution Control Facility (WPCF) anticipates conducting ___ days of leak tests in the sanitary sewer system beginning *DATE.* A non-toxic smoke will be blown into the system to reveal leaks that allow storm water and other surface waters to enter. Locating and correcting these leaks will conserve expensive capacity at the treatment facility. A record of leaks will be made.

The smoke is manufactured specifically for this purpose, leaves no residual or stains, and has no effects on plants or animals. It has a distinctive, but not unpleasant odor. The visible smoke and odor only last a few minutes where there is adequate ventilation.

The smoke should not enter your home. However, if smoke does enter your home any of the following items are the probable cause:

The vents connected to the building's sewer lateral are inadequate, defective, or improperly installed.

The traps under sinks, tubs, basins, showers, floor drains, etc. are dry, defective improperly installed, or missing.

The pipes, connections, and seals of the building's sewer system are damaged, defective, have plugs missing, or are improperly installed.

During the week prior to *DATE* pour water down ALL drains in your home or building to ensure that all traps are full.

If traces of the smoke or its odor enter your house or building, it is an indication that odor from the sewer system may also be entering. This can be unpleasant, dangerous and a potential health hazard. The location, identification and correction of the source of any smoke entering your house is urgently advised.

The WPCF can provide assistance in locating the source of smoke entering your house. However, correction of any defects in the pipes and sewer on private property is the responsibility of the owner. If smoke is observed in your home and the source is not readily identified or you have questions, please call PHONE NUMBER.

Sincerely,

Superintendent

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A news release and smoke testing CAUTION letter is sent out to the media and other officials to let them know your plans. This is usually done one week in advance. The news release should include the days and exact location, why you are doing the test and where they can expect to see smoke. List your phone number for questions. Remember that this is just a reminder. Your notification letter should have covered all the necessary details.

The reminder should be similar to the enclosed sample:

Smoke Testing of the Sanitary Sewer System

The Water Pollution Control Facility inspection crew will be conducting a survey of the sanitary sewer system. The survey will involve opening manhole to the streets and easements. A non-toxic smoke will be blown into the sewer mains to locate breaks and defects on the sewer system. The smoke that may be seen coming from vent stacks on buildings or holes in the ground is non-toxic, harmless, and creates no fire hazard. The smoke should NOT enter your home unless the plumbing is defective or drains have dried up. If you have any seldom used drains, poor water into the drain to fill the trap.

If smoke should enter your home or building, correction of defects on private property are the responsibility of the owner. A licensed plumber should be consulted to ensure the corrections are properly made. If smoke is observed, you may contact a member of the survey crew working in your area. They will be pleased to assist you in identifying the source of the smoke.

Some sewer mains and manholes may cross property easements or other rights of way. Whenever these lines require investigation, the crew will need access to sewer mains and manholes. Clearing of some easements to facilitate access may be performed prior to the survey.

Photographs and or written records are to be made of the leaks that are found. The survey should begin on DATE and require ___ days for fieldwork. If you have any questions or observe smoke in your home, please call PHONE NUMBER.

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Advance notification allows anybody with specials requirements, such as health concerns, enough time to inform you of their situation so that necessary arrangements can be made. Don't forget to include any concerns with your notes.

Commencing the Smoke Test

Before commencing work each and every day of the smoke testing be sure to call /or dispatch and/or the Fire Department to inform them. They also need to be informed when you are done for the day. Even with all your preparation, you will undoubtedly get a panic call sooner or later. The emergency personnel in your area need to be aware of this so they can sort out a panic call from a real emergency.

A truck that has been stocked with all the necessary equipment and materials prior to the morning of the project will once again save lots of valuable time in the field.

Concluding a Smoke Test

All of the notes, pictures and findings that are accumulated in the field should be put into a comprehensive report summarizing the smoke test work.

Send a letter to all property owners who need to do repair work. Be sure to cite and include the rule or sewer use ordinance that they are in violation of. Give them all the information they need to do the repairs, such as permits required, repair methods and a phone number that they may use to obtain further information. Be sure to set a time limit and always do a follow up inspection.

The New York Rural Water Association owns all the necessary equipment and will gladly assist you with any or all of the requirements involved with a smoke-testing project.

Please call ***Steve Grimm, NYRWA Wastewater Technician at 518-828-3155 ext. 18*** for details and information.

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MATERIAL SAFETY DATA SHEET

Rev Date: 8/26/98, UN Number: N/A

SECTION 1: PRODUCT IDENTIFICATION

Company Address:	3995 Commercial Ave., Northbrook IL 60062
Telephone Number	(847) 291-7000
Chemical Family:	Petroleum Hydrocarbon Oil
Trade Name:	PlantPro® Smoke Fluid
CAS Registry Number & Name:	64741-77-1, Light Hydrocracked Distillate

2. Composition / Information on Ingredients

Component/CAS No.	LO%	HI%	TWA	STEL	TWA	STEL	TWA	STEL	UNIT
Limits for the Product:					No Specific Limit				
Light Hydrocracked Distillate									
64741-77-1	00	100.0	5						mg/m³

3. Hazards Identification

Emergency Overview——————

Danger: Harmful or Fatal if swallowed. Swallowing fluid can cause it to enter lungs and cause damage, pulmonary aspiration hazard.

Appearance-- Light Fluid Odor--Little Odor

Potential Health Effects——————

Primary Routes of Entry - Inhalation (X) Skin (X) Eye (X) Ingestion (X)

Inhalation——————

Excessive exposure to mists or vapors generated by heat may cause irritation to eyes, nose, throat and lungs. Respiratory tract;

Skin——————

Practically non-toxic if absorbed (LD_{50} greater than 2000 mg/kg). May cause mild irritation with prolonged or repeated contact.

Eye——————

Contact with the eye may cause minimal irritation.

Ingestion——————

Estimated oral LD_{50} in rats is: > 15 g/kg. Harmful or fatal if swallowed. Pulmonary aspiration hazard if swallowed and/or vomiting occurs - it can enter lungs and cause damage.

Carcinogen listed by- IARC (NO) NTP (NO) OSHA (NO) OTHER (NO)

Pre-Existing medical conditions aggravated by exposure——————

Skin disorders, respiratory, pulmonary and lung disorders (e.g. asthma-like conditions).

4. First Aid Measures

Inhalation——————

Move person to fresh air. If not breathing, give artificial respiration, obtain medical assistance.

N/A = Not Applicable N.D. = No Data / Not Determined

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Skin----------

Wash with soap and water until no odor remains. If redness or swelling develops, obtain medical assistance. Immediately remove soaked clothing. Wash clothing before reuse.

Eye----------

Flush with water for at least 15 minutes. If irritation persists, obtain medical assistance.

Ingestion----------

Do not induce vomiting! Do not give liquids! Obtain emergency medical attention. Small amounts which accidentally enter mouth should be rinsed out until taste of it is gone.

5. Fire Fighting Measures

Flash point: 250 (Deg. F) minimum COC, 120 (Deg. C) minimum COC
Autoignition temp.: Not determined

-----Flammable Limits in air-----
Lower explosive limit (LEL): Not determined % volume
Upper explosive limit (UEL): Not determined % volume

Fire and Explosion Hazards----------
Can be made to burn (Flash point greater than 200F)

Extinguishing-Media----------
Water spray. Regular foam. Dry chemical. Carbon dioxide.

Special Fire Fighting Instructions----------
Wear self-contained breathing apparatus. Wear structural firefighters protective clothing.

NFPA/HMIS Classification
Health - 0 / 0
Fire - 1 / 1
Reactivity - 0 / 0
Personal Protection Index - X

Hazard Rating
0 = Least 1 = Slight
2 = Moderate 3 = High
4 = Extreme

Specific Hazard: None Listed

6. Accidental Release Measures

Contain spill. Use personal protective equipment stated in section 8. Advise EPA; State Agency if required. Absorb on inert material. Shovel, sweep or vacuum spill.

7. Handling and Storage

NFPA class IIIB storage. Avoid prolonged breathing of mist or vapor. Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Wash thoroughly after handling.

8. Exposure Control / Personal Protection

Consult with a Health/Safety Professional for specific selection.

Ventilation----------
None normally needed.

N/A = Not Applicable N.D. = No Data / Not Determined

Personal Protective Equipment

Eye

Splash proof chemical goggles or full face shield recommended to protect against splash of product.

Gloves

Protective gloves recommended when prolonged skin contact cannot be avoided. The following glove materials are acceptable: Polyethylene; polyvinyl chloride (PVC); Neoprene; Nitrile; Polyvinyl Alcohol, Viton.

Respirator

Concentration-in-air determines protection needed. Use only NIOSH certified respiratory protection. Respiratory protection usually not needed unless product is heated or misted. Half-Mask air purifying respirator with dust/mist filters or HEPA filter cartridges is acceptable to 50 mg/m³. Full-Face air purifying respirator with dust/mist filters or HEPA filter cartridges is acceptable to 250 mg/m³ exposure limit. Protection by air purifying respirators is limited. Use a positive pressure-demand full-face supplied air respirator or SCBA for exposures above 250 mg/m³.

Other

If contact is unavoidable, wear chemical resistant clothing. The following materials are acceptable as protective clothing materials: Polyvinyl Alcohol (PVA); Polyvinyl Chloride (PVC); Neoprene; Nitrile; Viton; Polyurethane; Safety shower and eye wash availability recommended. Launder soiled clothes. For non-fire emergencies, respiratory protection may be necessary, wear appropriate protective clothing to avoid contact.

9. Physical and Chemical Properties

Boiling Point	:	Wide Range 485F to 685F
Melting Point	:	N/A
Specific Gravity	:	0.86 (Water = 1)
Packing Density	:	N/A
Vapor Pressure	:	<0.08 (mm Hg @ 20 Deg. C)
Vapor Density	:	5+ (Air = 1)
Solubility in Water	:	NIL
PH Information	:	N/A
% Volatiles by Vol	:	NIL
Evaporation Rate	:	1000x slower (Ethyl Ether = 1)
Octanol/Water Coeff.	:	N.D.
Appearance	:	Light Fluid
Odor	:	Little Odor
Odor Threshold	:	N.D.
Viscosity	:	38.0 SUS @ 100 Deg. F .. 3.45 CST @ 40 Deg C.
Molecular Weight	:	204 (average)

10. Stability and Reactivity

Stability

Stable

Incompatible Materials

Strong Oxidizers

Hazardous Decomposition

Carbon Monoxide and Asphyxiants

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15. Regulatory Information

SARA 302 Threshold planning quantity..... N/A
SARA 304 Reportable quantity.....N/A
SARA 311 Categories..... Immediate (Acute) health effects..... Y
Delayed (Chronic) health effects.. ....N
Fire Hazard.....N
Sudden release of pressure hazard...N
Reactivity Hazard.....N

This product or all components of this product are listed on the U.S. TSCA inventory.

16. Other information

WHMIS Classification: Not controlled

N/A = Not Applicable N.D. = No Data / Not Determined

Linda Bartone-Hughes

From: Steven Grimm <stevegrimm@hotmail.com>
Sent: Thursday, February 09, 2023 7:16 AM
To: Linda Bartone-Hughes
Cc: Tom DiMezza Gmail
Subject: smoke testing
Attachments: Hold Harmless Form.docx; Benefits of Smoke Testing.pdf

Linda,

Tom asked me to e-mail you the attached. The first is the hold harmless agreement. A motion needs to be made at the board meeting requesting New York Rural Water's assistance with smoke testing, and Tom needs to sign and date the agreement. You can e-mail me the signed form. The other is an article on smoke testing that includes a sample public notification. I have explained all this to Tom yesterday. Please don't hesitate to contact me if you have any questions. Thanks.

Steve

Steven Grimm
Wastewater Technician
New York Rural Water Association
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518 929-0987 (Cell)