

***Conserving Water, Improving Distribution Water Quality
While Saving Money – A New Water Main Cleaning
Technology to End Dirty Water Complaints and Stop
Wasteful Hydrant Flushing Practices!***



For
**2022 Emerging Water
Technology Symposium**
May 10th & 11th, 2022



Presented by: Chris Wilkinson

NO-DES
WATER CONSERVATION

Neutral Output Discharge Elimination Systems

...Leading by Example in Water Conservation

Current Flushing Methods Available



Conventional Flushing



Uni-Directional Flushing



NO-DES Flushing

**Pigging with
Ice or Foam**



And or,



Stop Flushing!

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**Utilities Must Provide Safe Drinking
Water At The Lowest Possible Cost.**

**The Message We Send to Our
Customers Must Be Clear and
Consistent**

**We'll Never Have Enough
Water To Waste!**

What Is Water Distribution System Flushing?

A process that cleans the inside of water mains by creating high flows out of fire hydrants to waste!

Most utilities flush as often as possible, sometimes 4 months every year or more.

Achieved by opening fire hydrants, blow-offs, or flushers.



Why Is Flushing Needed?

Clean the water main

Remove Bio-Film

Improve Water Quality

Eliminate Free Ammonia

Eliminate Nitrification

Improve Residuals

Drought and Limited, or Increasingly
Costly Supplies Make It Difficult to
Hydrant Flush

**Flushing Programs Are Put On Hold,
Often For Years!**

The Result?

The Real Result



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Conventional and Uni-Directional Flushing Program & Reactionary

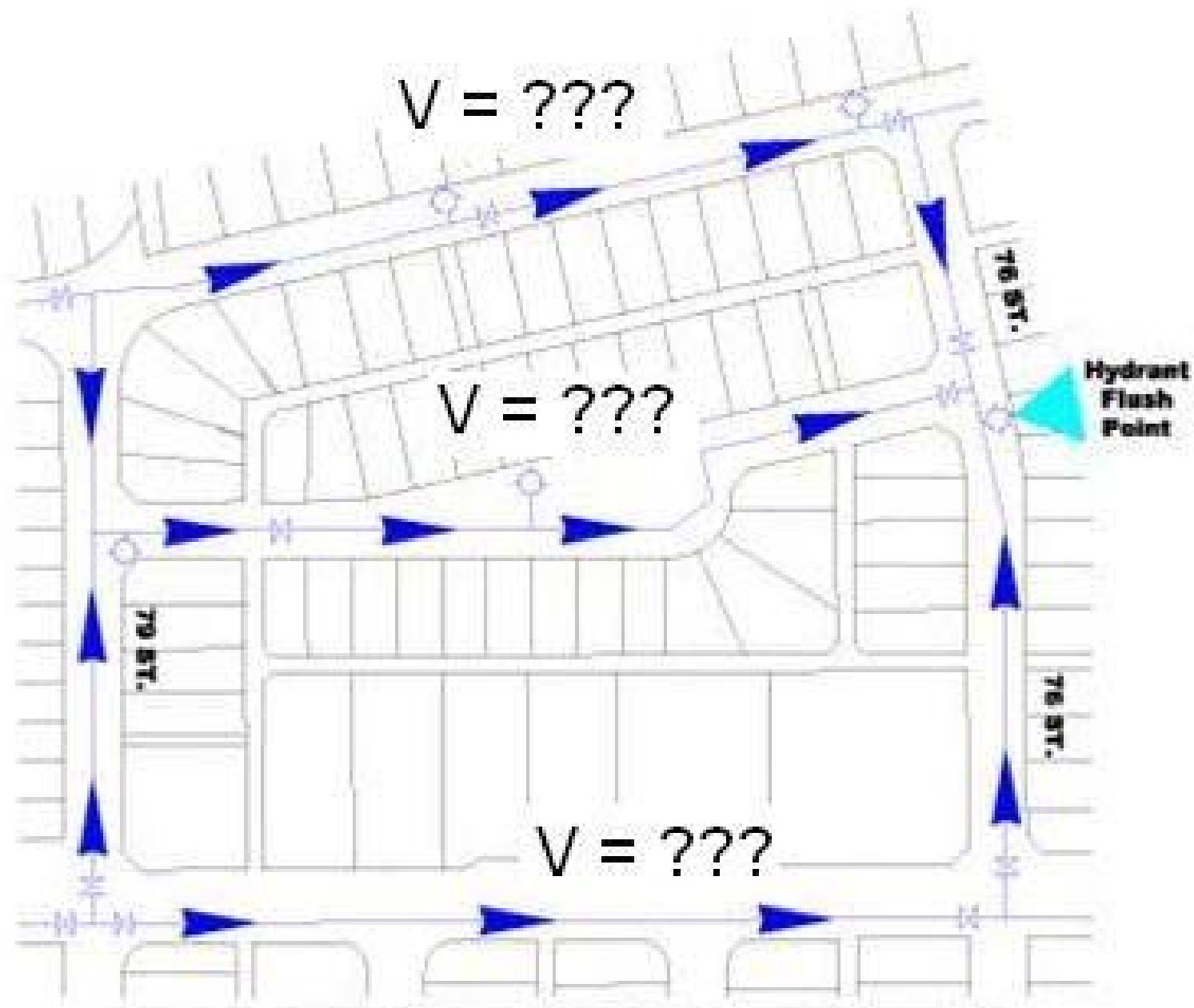
Cut Program, Increase Reactionary!

Conventional and Uni-Directional Flushing

**Opening of hydrants in distribution system -
can take hours for some hydrants to clear**

Conventional and Uni-Directional Flushing

**Can cause water quality problems in system:
discolored water, low pressures, spread of
biofilms – loss of customer confidence when
they see discolored water!**



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Conventional Flushing

Loss of revenue (water and energy)

Never gets all of the water clean.

Not able to directly add chlorine to boost residuals - including chloramines

NPDES Issues – costly permits, paperwork, and possible fines

Liabilities – sewer backups and contamination, damage to yards, vehicles, streets, homes.

And:

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What Conservation Measures Are Taken By Water Utilities?

Education – change habits

Restrictions On Use – Odd/Even Days, Hours

Inclining Block Rates

Fines for Waste

Mandatory Rationing

Rebates: Toilets, Washing Machines, Shower Heads, Artificial Lawn, Xeriscape

Water Audits

**What's The Common
Denominator Here?**

**The Focus
Is On The
Customer!**

There's A Better Solution

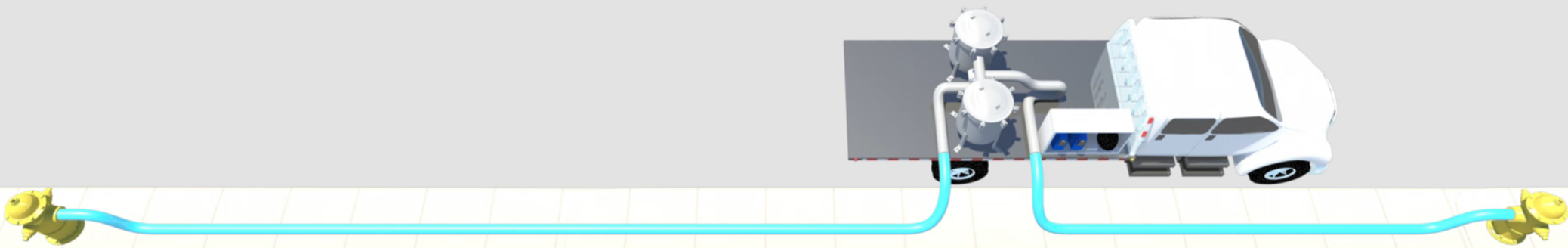
NO-DES Water Main Flushing



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There's A Better Solution

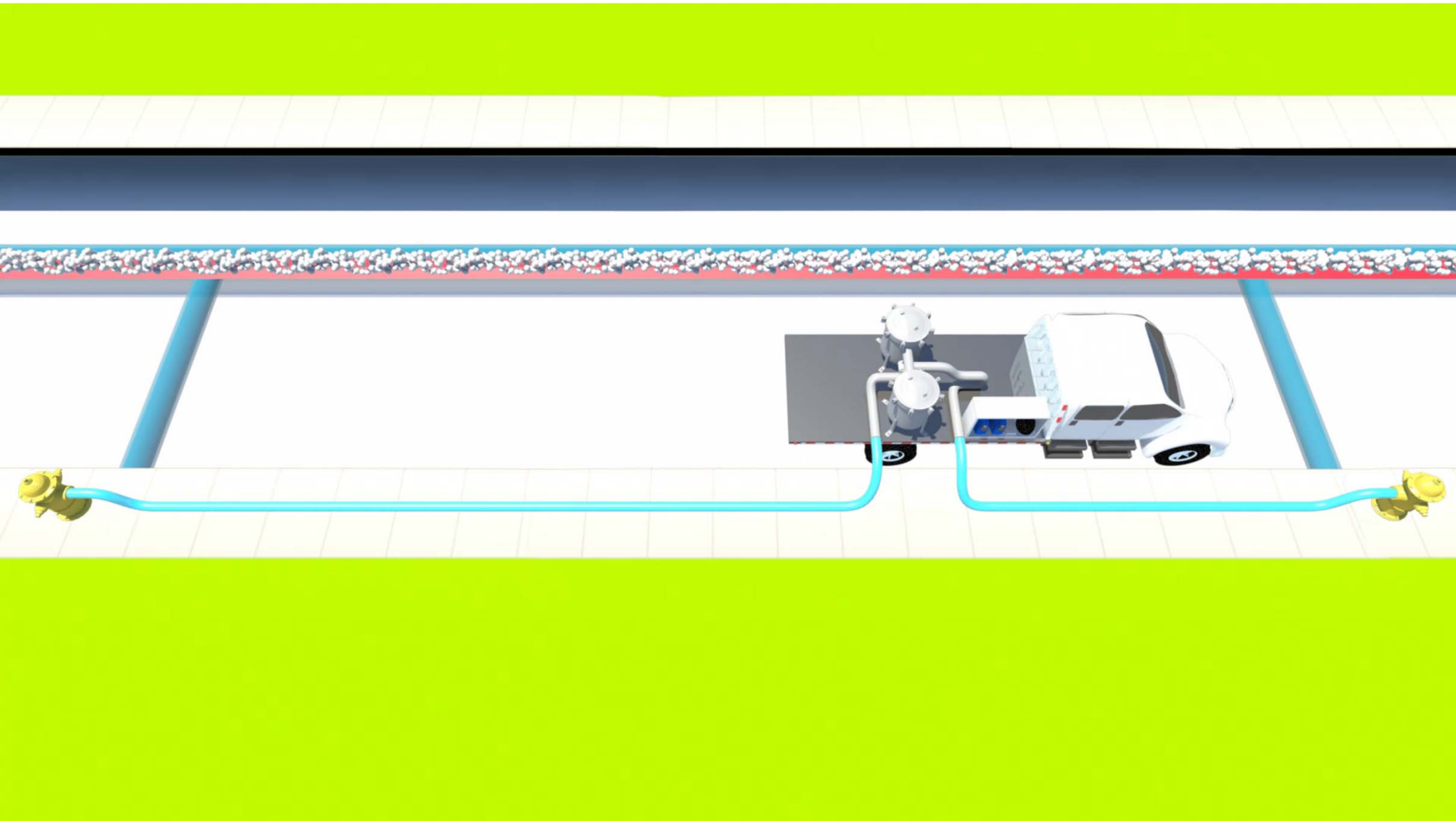
NO-DES Water Main Flushing



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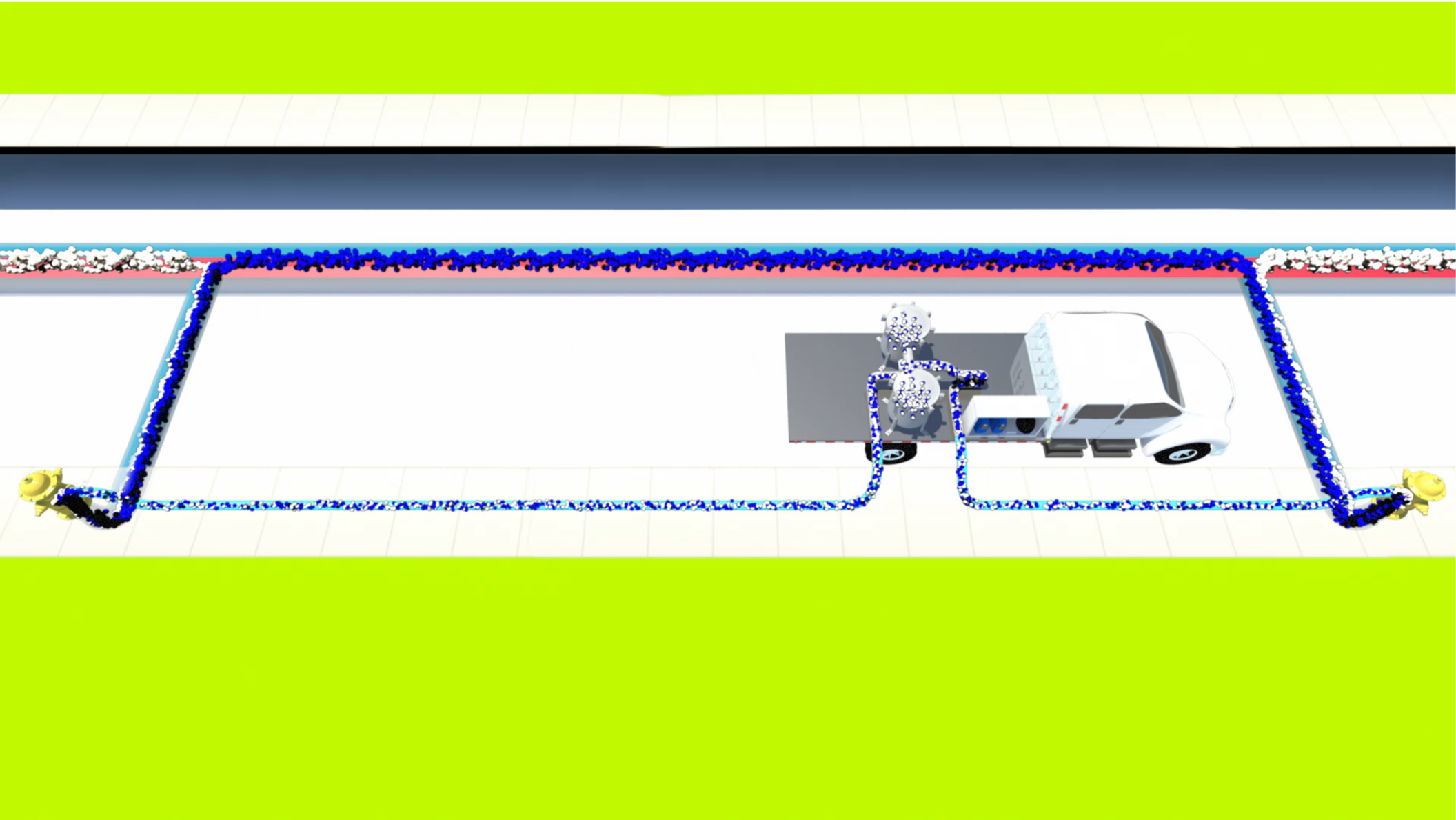
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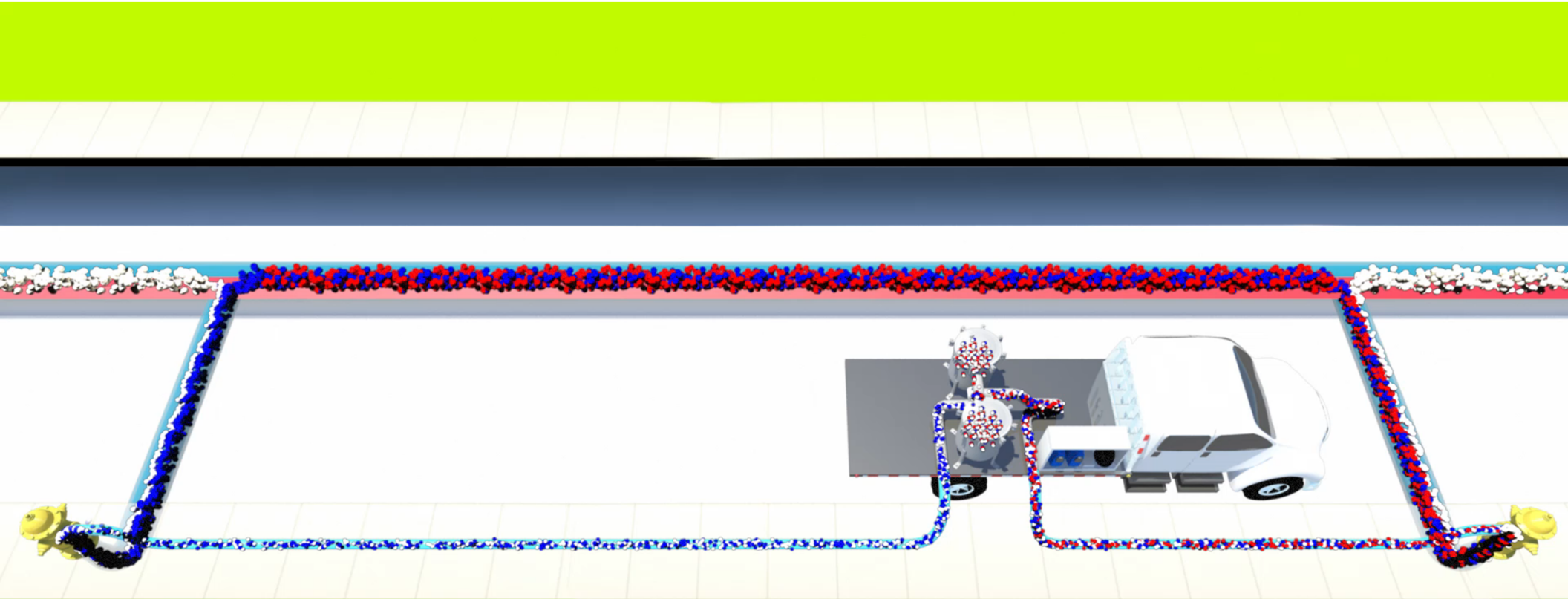
NO-DES Water Main Flushing



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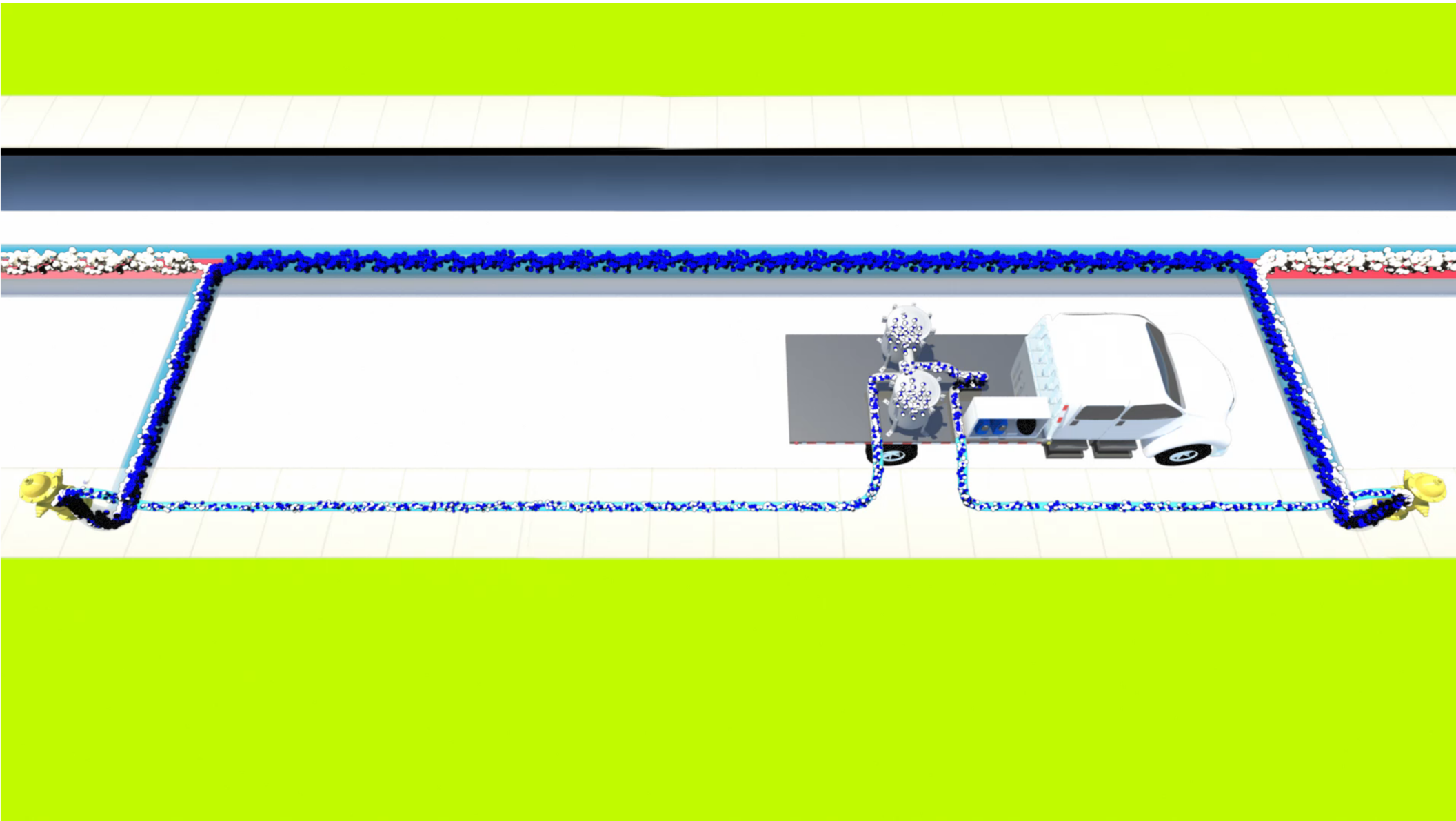
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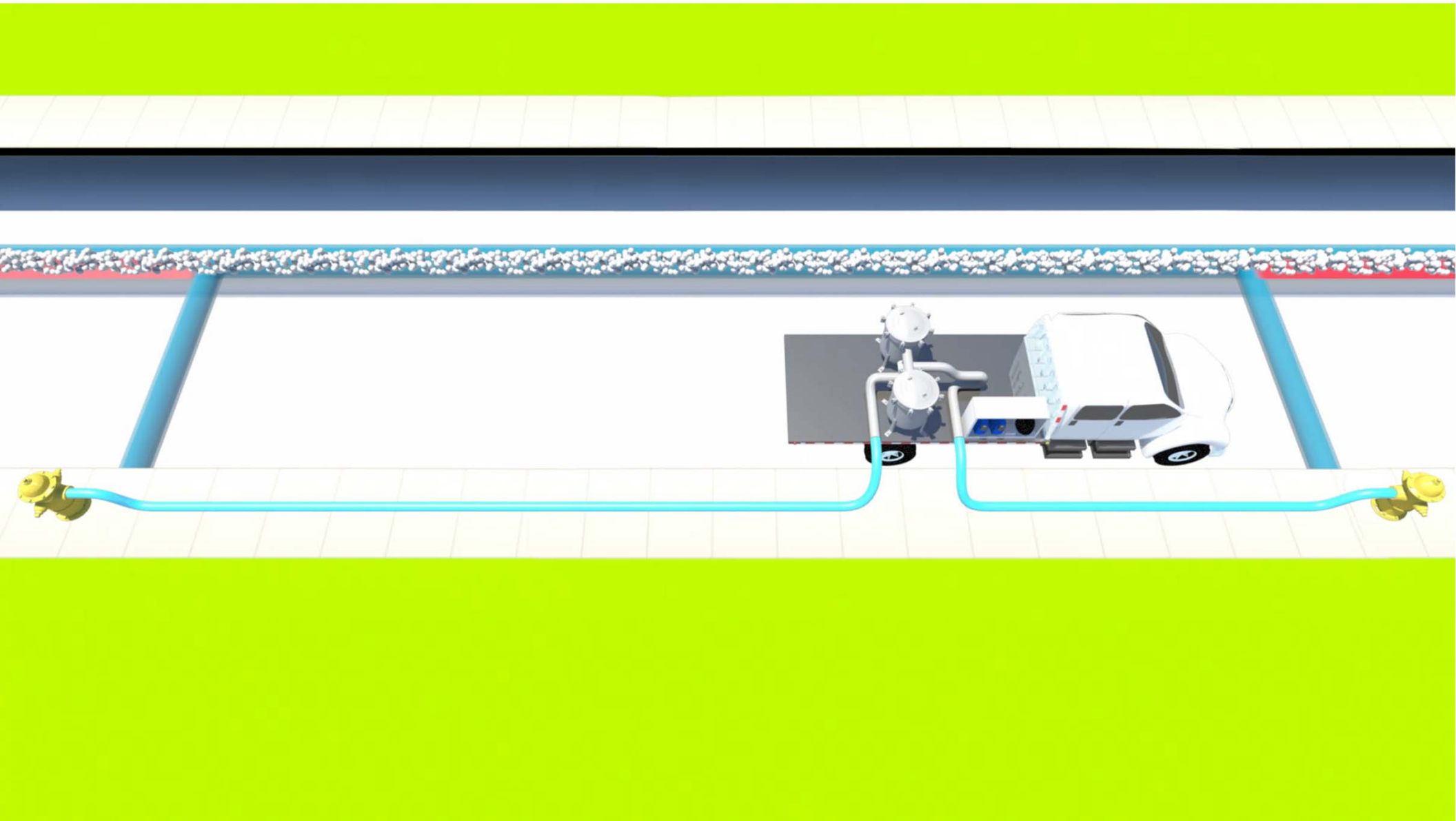
NO-DES Water Main Flushing



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There's A Better Solution

NO-DES Water Main Flushing



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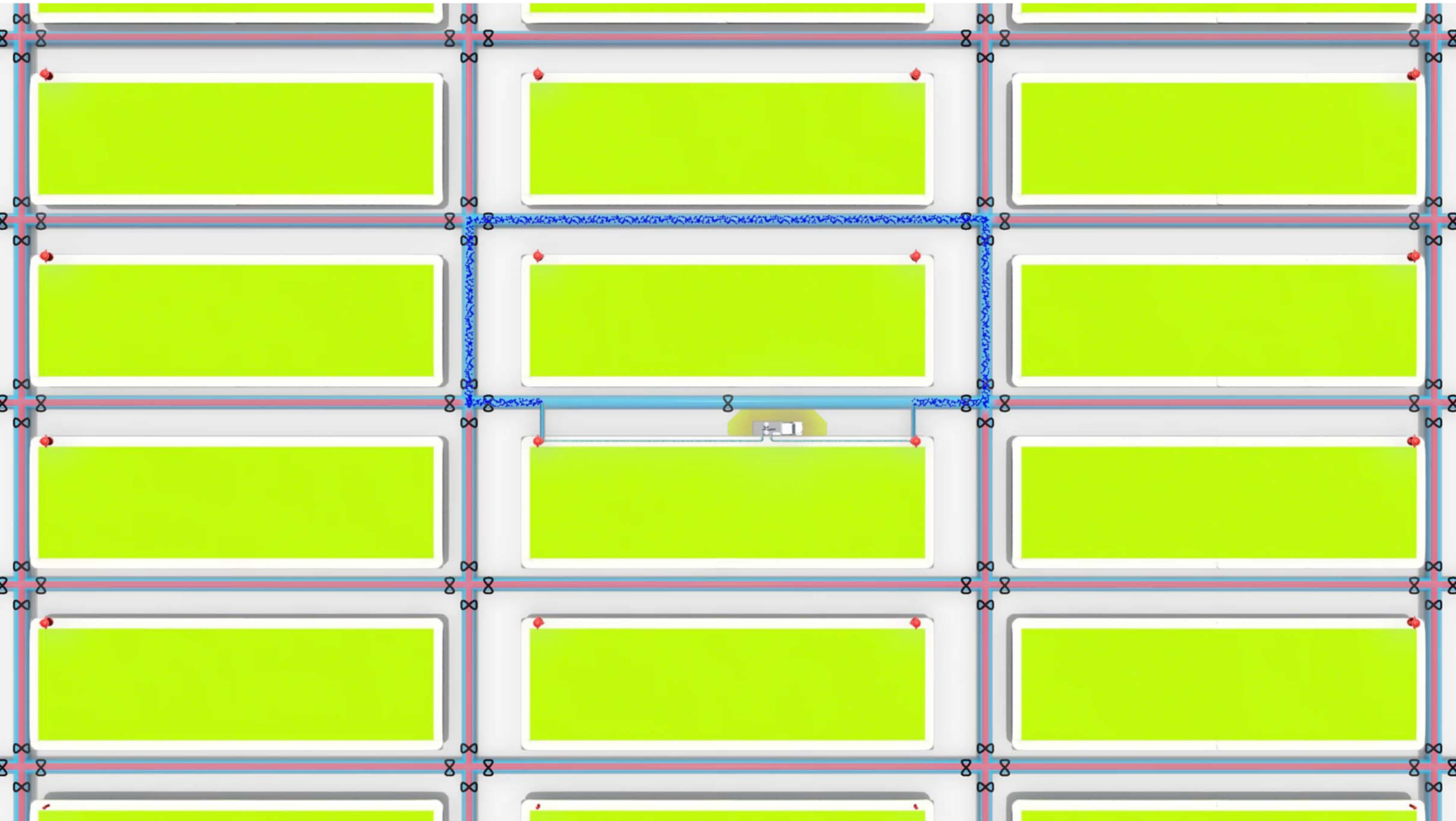
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NO-DES Water Main Flushing

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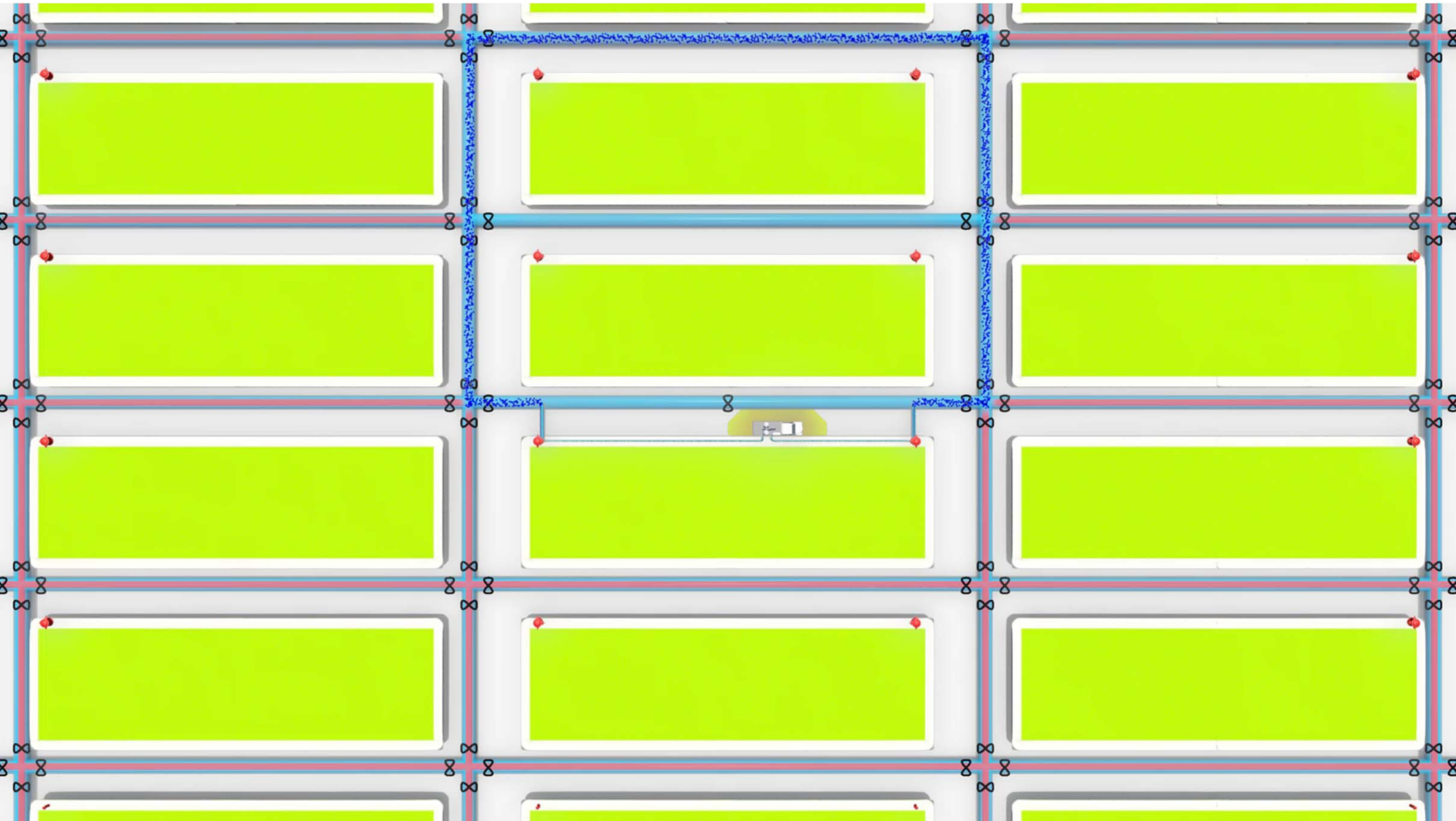
NO-DES Water Main Flushing



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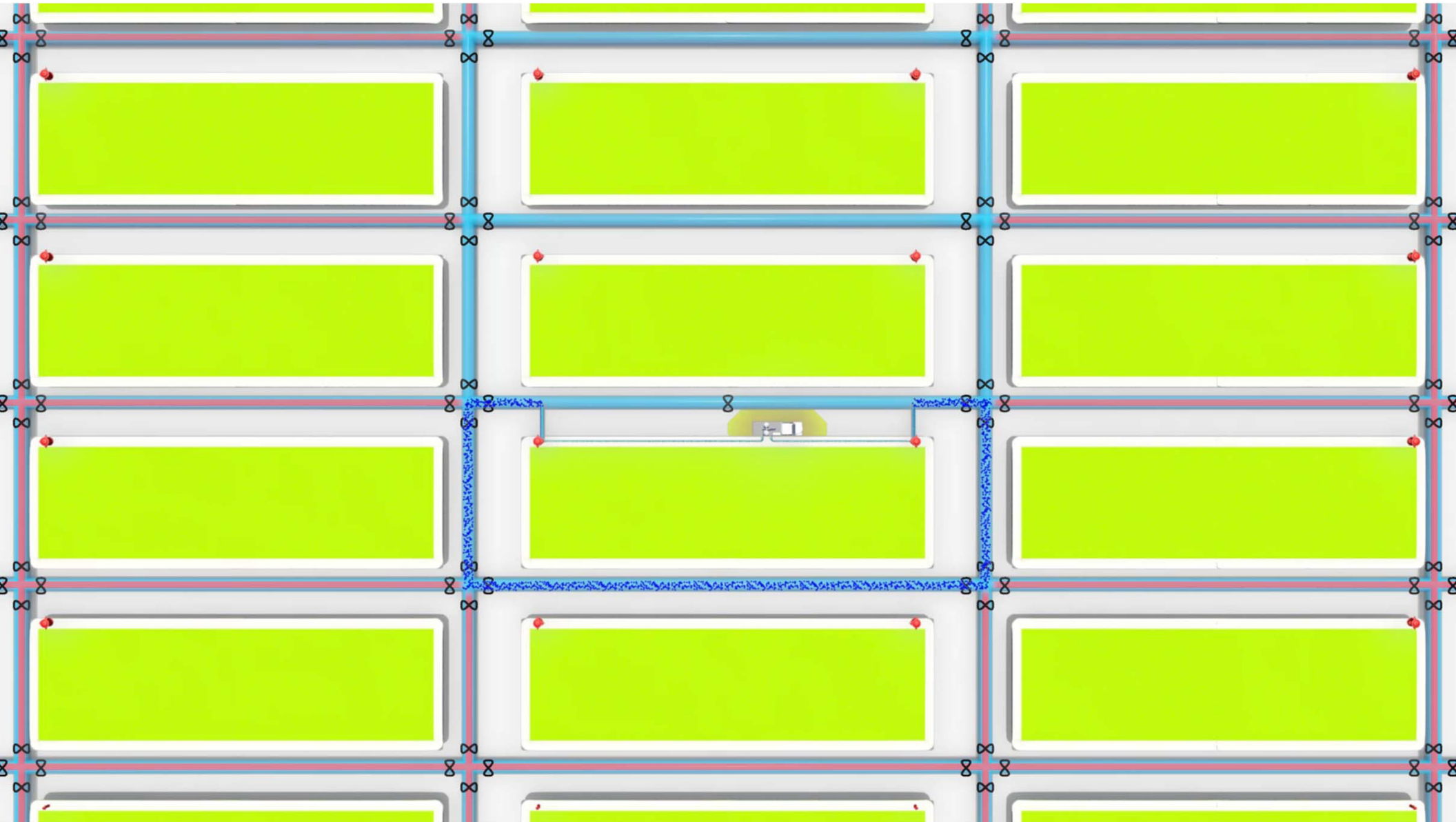
NO-DES Water Main Flushing



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There's A Better Solution

NO-DES Water Main Flushing



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NO-DES Flushing

Method and Process

- Saves between 1% to 6% of all water supplies!
- Saves the “energy” required to produce, treat, pressurize and deliver the water.
- Improves the water quality to a higher standard than it was before delivered.
- Cleans and scours the insides of the mains more effectively than conventional flushing techniques!
- Increases the safety of the water by increasing the disinfection “in the distribution system”.
- Solves issues with chloramines, removes bio-films and eliminates nitrification.
- Refreshes the water – eliminating water age at dead ends!

NO-DES Flushing

Method and Process

- **Allows year round flushing.**
- **Eliminates NPDES issues and fines!**
- **Reduces water quality complaints from the CUSTOMER!**
- **Eliminates pressure loss and surging (water hammer), reducing main breaks and main damages.**
- **Eliminates property damage.**
- **Improves PR with your customers! You can lead by example in water conservation!**
- **NO-DES flushing technology saves money – *It pays for itself!***

NO-DES Flushing Benefits

Only **NO-DES** technology offers four important factors to ensure that **bio-film** has been removed:

1. Turbidity
2. Flow
3. Disinfectant Residual
4. *TIME!*

Other Applications

Reservoir cleaning – Tank Draining

Cleaning new mains

Cleaning mains after burst repairs

Fire Main cleaning

GAC Filter Back-Washing

Large Meter Testing/Calibrating

Well Rehabbing

Water Treatment Plant Augmentations

****Distribution Water Main Jetting****

NO-DES Truck Unit



Direct Sales and Support

Contract Operations

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NO-DES Trailer Unit



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Australian, NO-DES International Truck



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Typical Loaded 1 Micron Absolute Filter Bag

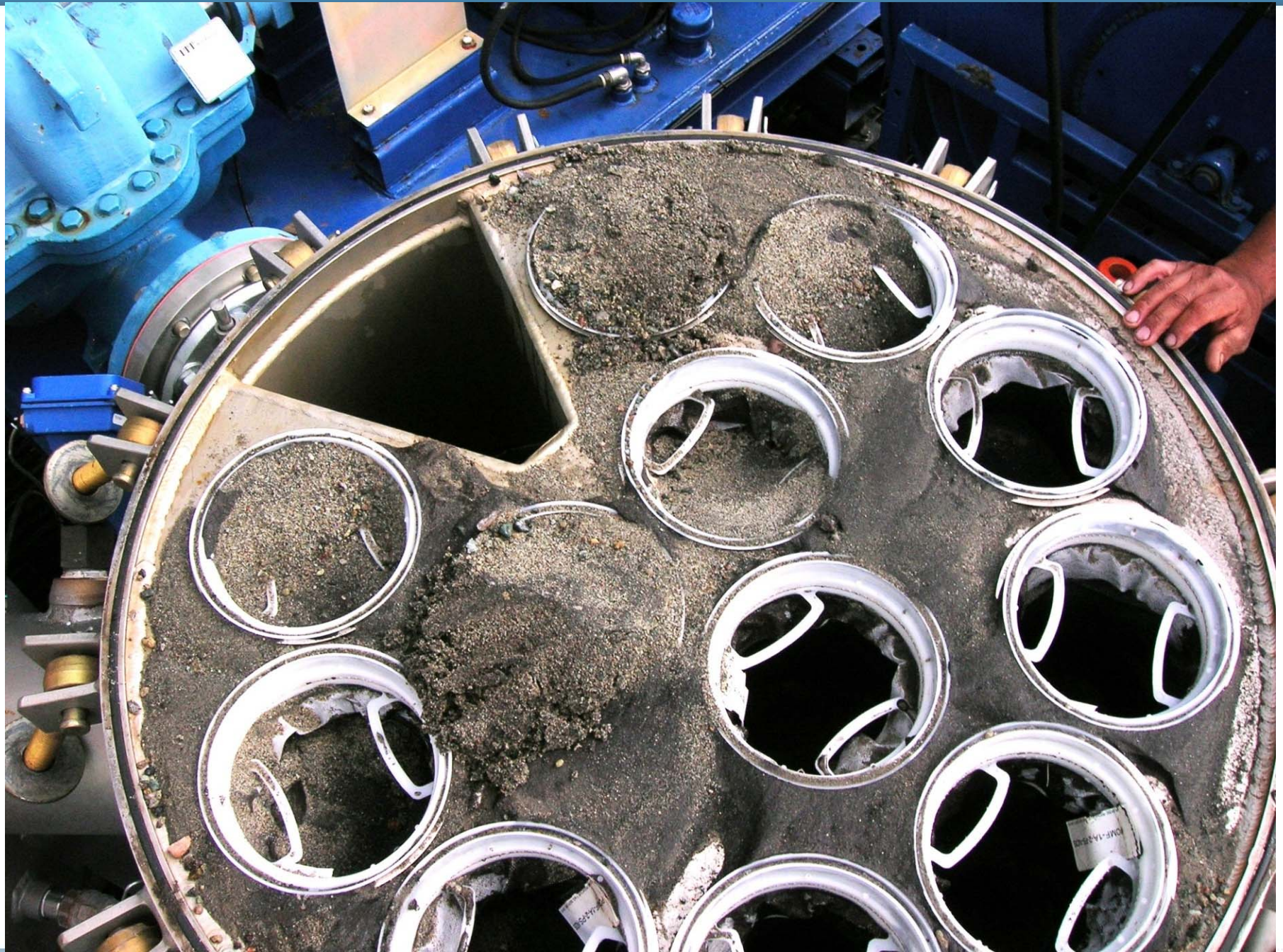


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Typical Loaded 1 Micron Absolute Filter Bag



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Potable Distribution Water Main Jetting



Tuberculation

2022

*Can Only Be Used In
Conjunction With Your
NO-DES Flushing Truck*

Camera / Videoing

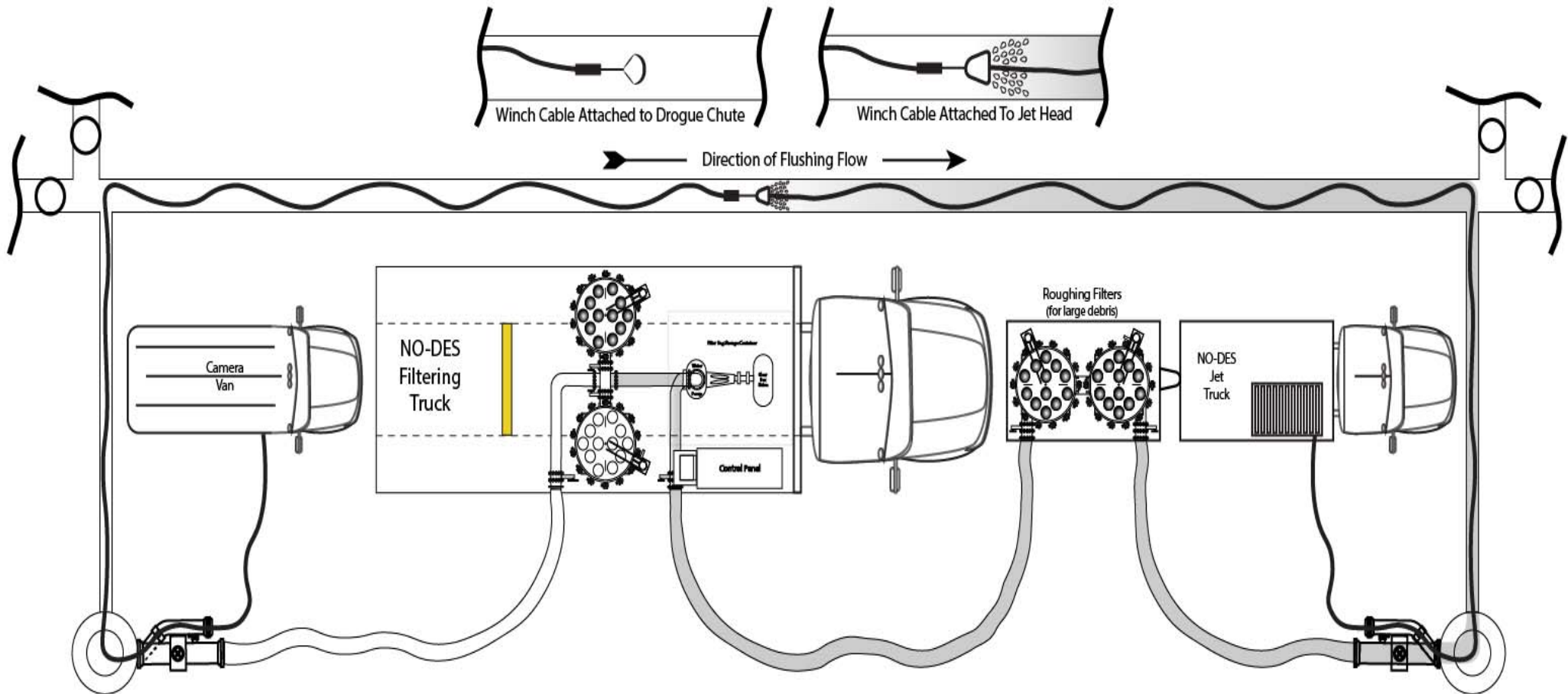
Acoustical Leak Detection

Locating

**Municipal Potable Water
Main Distribution System
“One Stop Shop”**

Potable Distribution Water Main Jetting

NO-DES Pressurized Potable Water Main Flushing Flow and High Pressure Jetting Method and Process



**Our customers are conserving
water, we need to be seen
doing the same.**

Now Put Yourself In The Customer's Shoes

**Your customers are conserving water
like you asked, but they're also watching
what you do**

What you don't want the customer to see!



...Leading by Example in Water Conservation

**Can Distribution System Flushing
Be Performed In A Way That
Meets Water Quality Goals and
Enables Water Utilities To Lead By
Example In Water Conservation?**

**Yes,
and at a significantly
reduced cost!
and all while conserving
precious WATER**



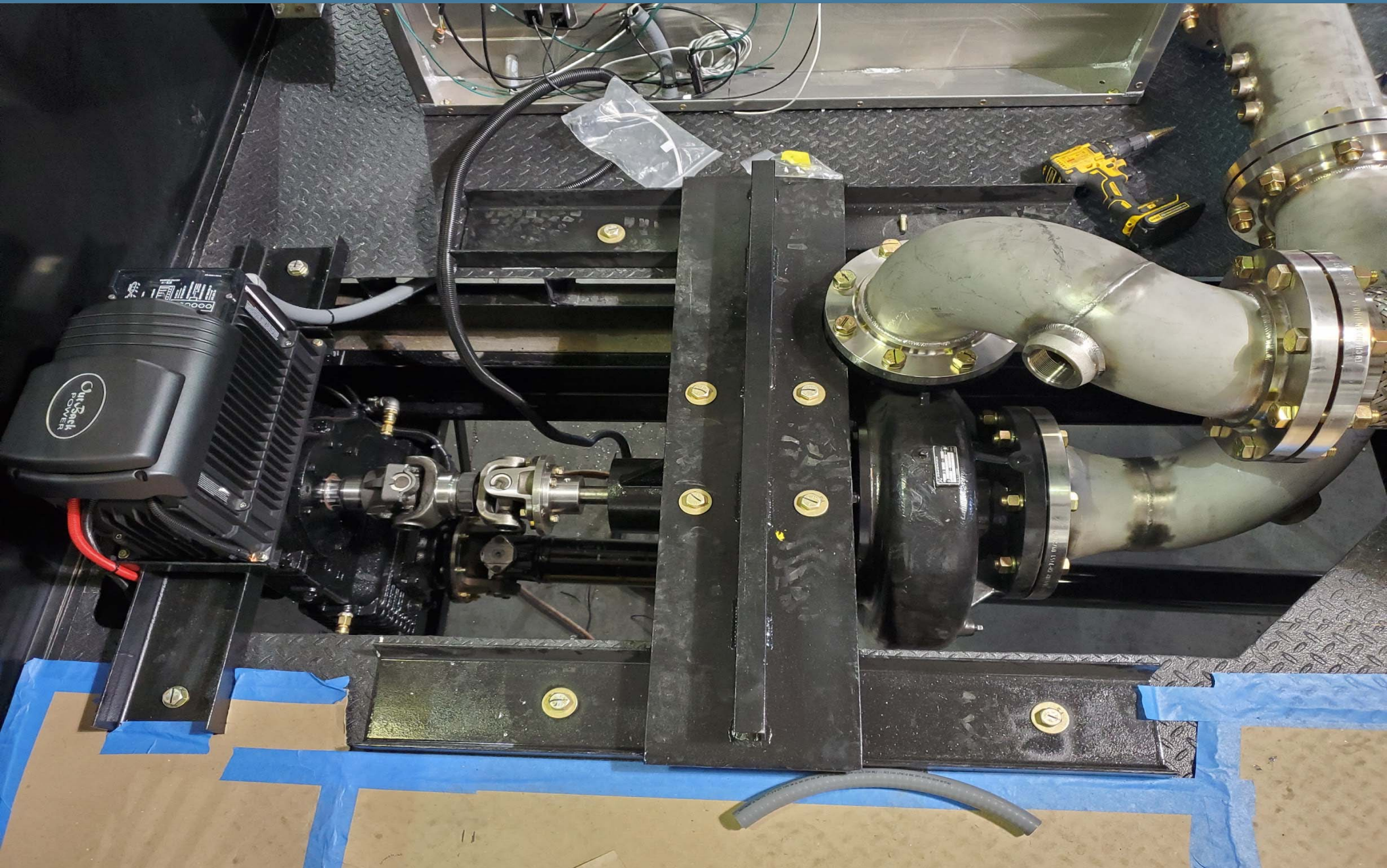
NO-DES
WATER CONSERVATION

This Concludes this Presentation

Questions?



Truck Pump Powered by Truck HALE Gearbox



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