AUTOMATED FLUSHING TECHNOLOGY

DEPARTMENT OF ENVIRONMENT & CONSERVATION

NEWFOUNDLAND & LABRADOR

MARCH 23RD, 2016

PRESENTED BY JEFF B. JENSEN

Mueller Canada

QUESTIONS WELCOMED –

CONCERNS ARE OK TO VOICE AS WELL

WE WONT KICK YOU OUT!

Purpose Behind Automated Flushing

IMPROVING WATER QUALITY WITHIN WATER DISTRIBUTION SYSTEMS

CONSERVATION OF WATER AND FINANCIAL RESOURCES

BENEFITS OF FLUSHING WITH AUTOMATED DEVICES

EFFICIENCY

REDUCE OPERATIONAL EXPENSES
AND
IMPROVE WATER QUALITY OF POTABLE WATER DELIVERED TO CUSTOMERS

EFFECTIVENESS

ENHANCED UTILIZATION OF STAFF TIME

RELIABILITY

THROUGH AUTOMATION ACHIEVE RELIABLE PERFORMANCE

LONGEVITY

A SUPERIOR DESIGN AND WORKMANSHIP EQUALS A PRODUCT THAT DELIVERS YEARS OF SERVICE

WATER QUALITY STANDARDS

COMPLIANCE WITHIN PROVINCAL STANDARDS

CHLORINE

MOST COMMON FORM OF DISINFECTANT USED BY WATER UTILITIES TO ENSURE THE SAFETY OF DELIVERED WATER

0.2 PPM

MINIMUM PARTS PER MILLION ALLOWED BY USEPA FOR WATER DISINFECTANTS

4.0 PPM

MAXIMUM PARTS PER MILLION ALLOWED BY USEPA FOR WATER DISINFECTANTS

52%

OF UTILITIES MAINTAIN A REGULAR DEAD-END FLUSHING PROGRAM

ONLY

15%

OF UTILITIES OPERATE WITH NO OFFICIAL FLUSHING PROGRAM

Why Implement And Maintain A Flushing Program?

Taste, color and odor account for an estimated 92% of customer complaints filed with water utilities.

Why Implement And Maintain A Flushing Program?

Recent studies indicate that the cost to field, manage and solve a customer service complaint ranges between $300 and $500 per complaint.

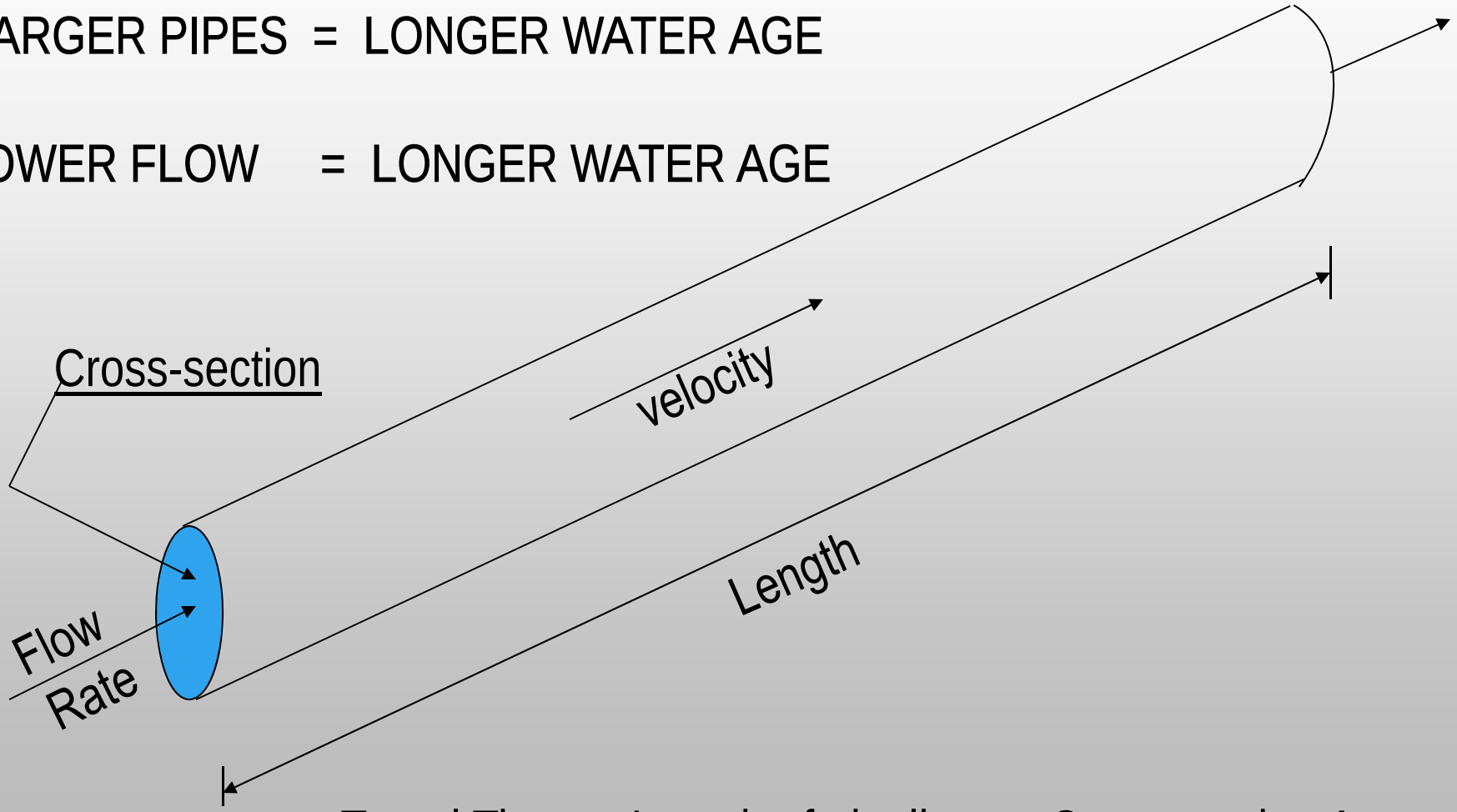
WATER AGE MANAGEMENT

CONSISTENT FLOW = IMPROVED QUALITY

LONGER PIPES = LONGER WATER AGE

LARGER PIPES = LONGER WATER AGE

LOWER FLOW = LONGER WATER AGE

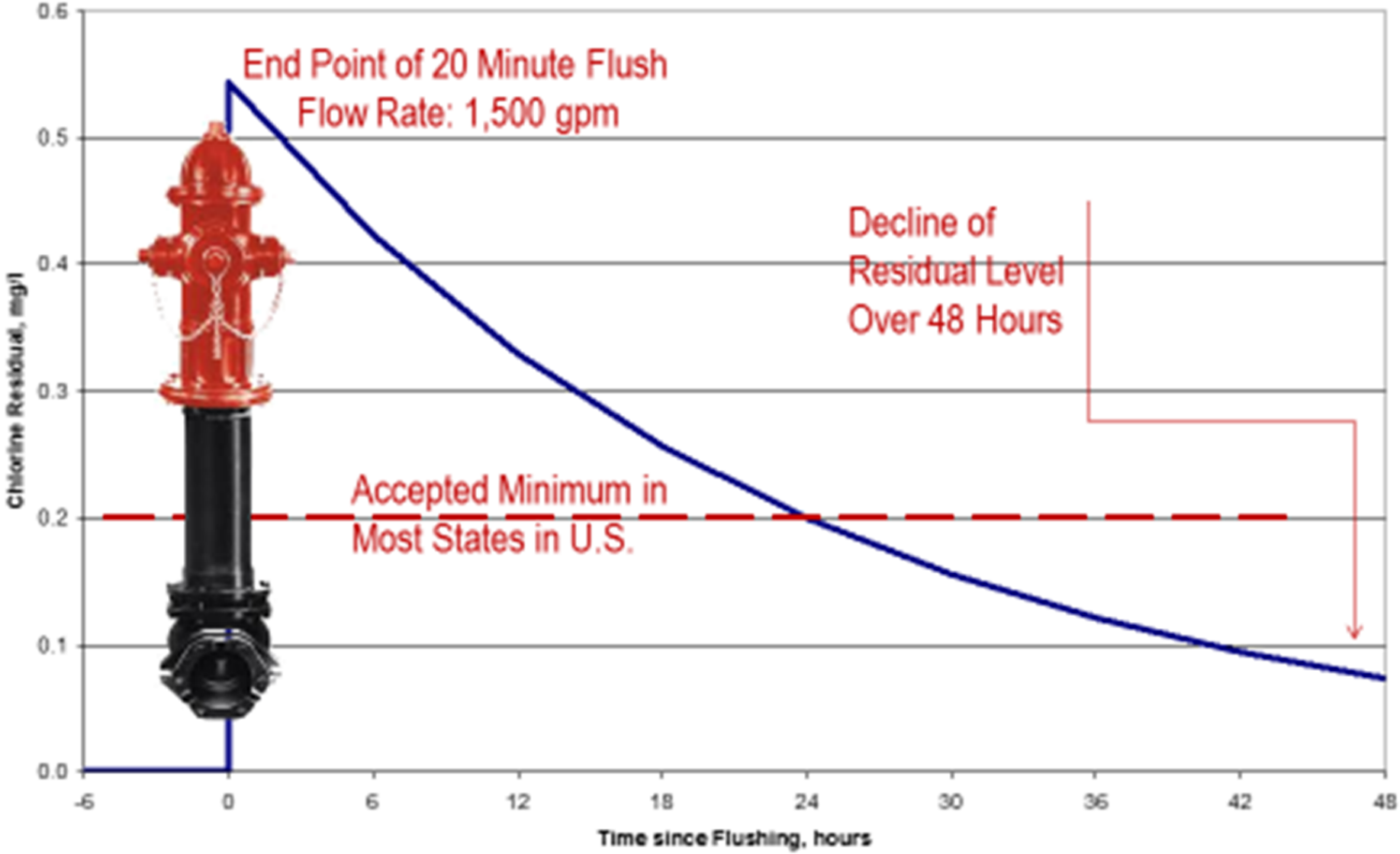


Travel Time = $\frac{\text{Length of pipeline} \times \text{Cross-section Area}}{\text{Flow Rate in pipe}}$

CONDITIONS CAUSING AN INCREASE IN AVERAGE DETENTION TIME

- SERVICE TO CUSTOMERS LOCATED A DISTANCE FROM TREATMENT FACILITY (TRAVEL TIME)
- WATER LINES SIZED FOR FIRE DEMAND (HIGH VOLUME)
- DEAD-END LINES (LOW DEMAND)
- LOW WATER DEMAND IN LINES SIZED FOR FUTURE GROWTH
- SEASONAL DEMANDS
- WATER CONSERVATION INITIATIVES

20 Minute Manual Flush Of Dead-End Water Line

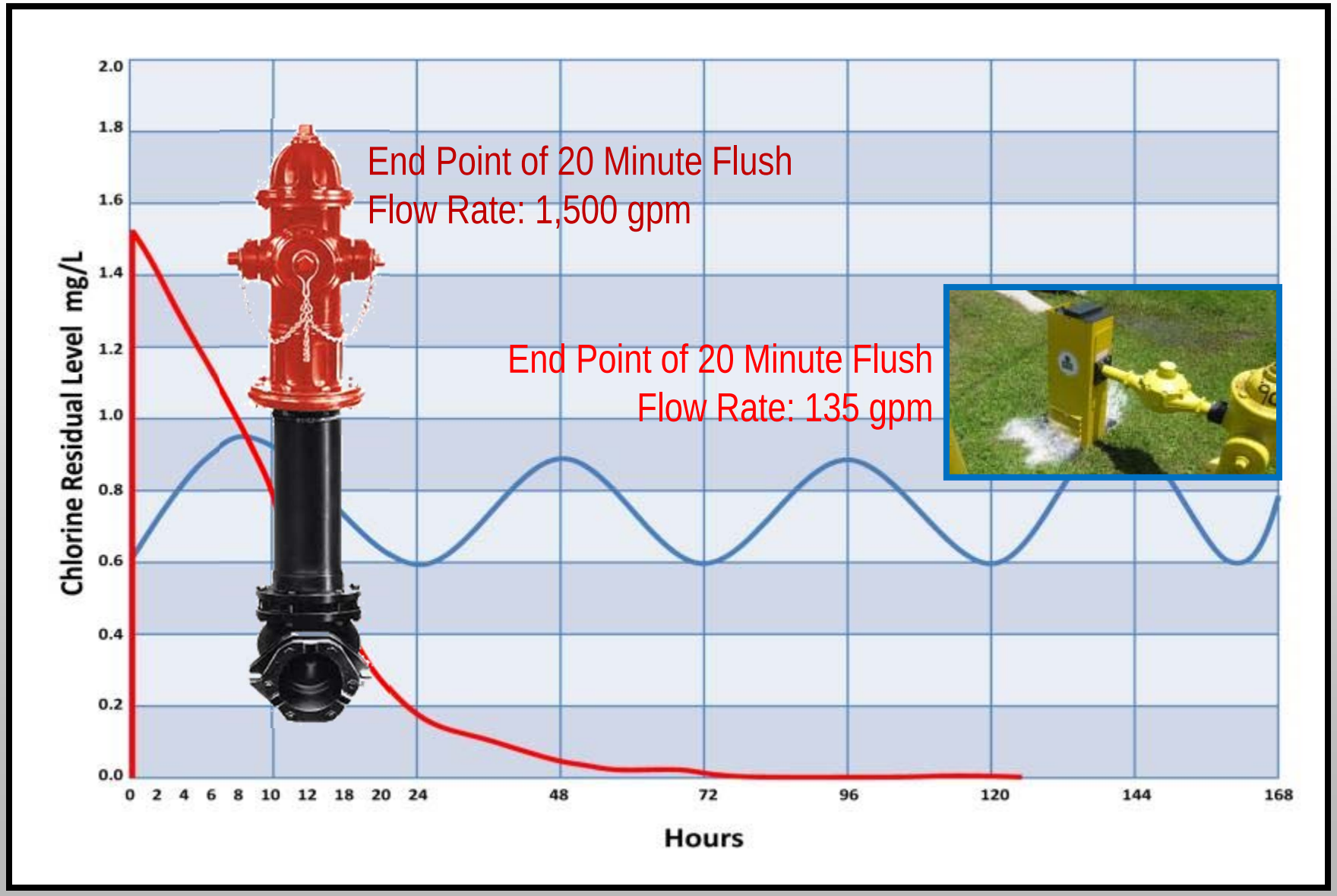


MANAGING WATER AGE & RESIDUALS

► **MANUAL–** Infrequent Flushing up to 1,500 gpm for 45 minutes or longer until chlorine residual returns to an acceptable level

◄ **AUTOMATED** - ADVANCED MAINTENANCE FLUSHING 135 GPM FOR 4 MINUTES PER DAY TO MAINTAIN CHLORINE RESIDUAL

Manual vs Automated Flush Of Dead-End Water Line



ADVANCED MAINTENANCE FLUSHING TOOLS AND TECHNIQUES

HG-6 HYDRANT AUTOMATED FLUSHER

- TEMPORARY AND EMERGENCY USAGE
- USED WITH A WORKING HYDRANT
- DESIGNED TO SUPPORT ITS WEIGHT AND NOT HANG, EROSION BASE
- OEM DE-CHLOR AND SAMPLING UPGRADE STANDARD EQUIPMENT
- 8-INCH TRAVEL RANGE FOR CONNECTION TO MOST HYDRANT HEIGHTS
- 24-EVENT PROGRAMMING

- LOCKING DEVICE AVAILABLE
- METER AVAILABLE

TYPICAL HG-6 HYDRANT CONNECTION

- **A411 FLUSH POST HYDRANT**

(FOUND ON UNDERSIZE MAINS OR WHERE FP IS NOT REQUIRED)

- **3-WAY DRY BARREL FIRE HYDRANT**

(MOST COMMON FIRE HYDRANT IN CANADA)

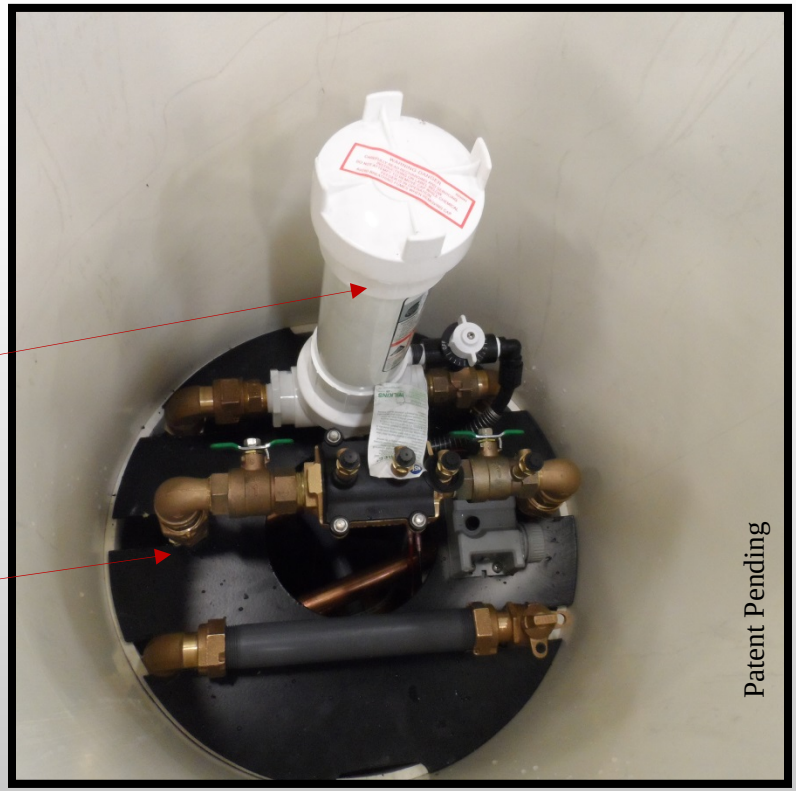
PERMANENT AUTOMATED FLUSHING SOLUTIONS FOR COLD TO SEVERE CLIMATES

HG-8 IN-GROUND AUTOMATED FLUSHER

- Designed for cold climate = auto flushing year-round
- Fully buried unit = public sees nothing

Sampling port and dechlorination systems

Coated steel platform supports 1" brass piping and valve assembly



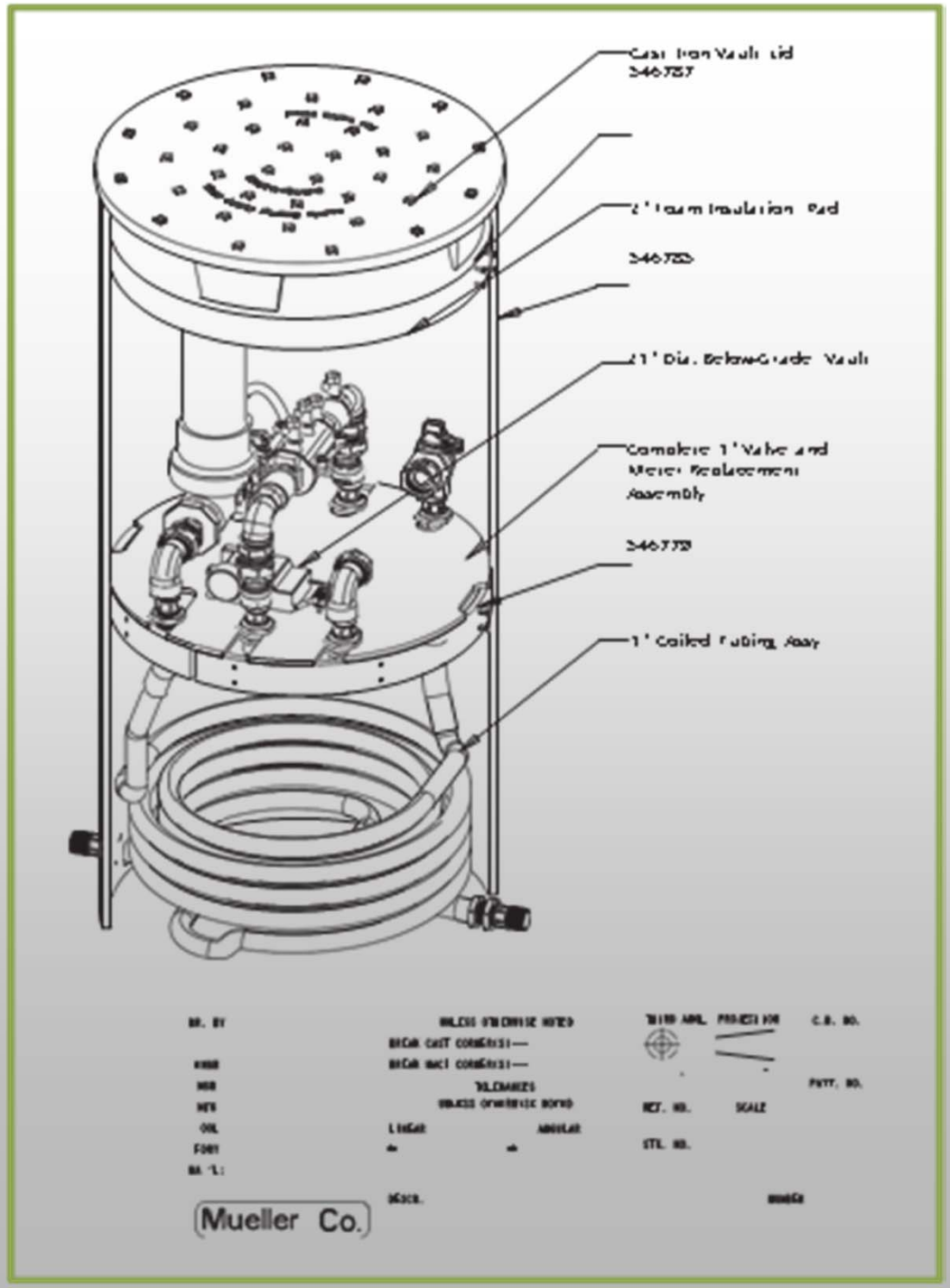
The 21-inch diameter below-grade protective base

Adjustable platform and Thermal-Coil® meter box technology allow the internals below the frost depth for year-round operation

- Inlet 1” MIP connection Design consideration: corp./curb & typical service tubing from main to inlet connection

- Outlet 1” MIP allowing Flush to low flow sewer, pond, ditch or retention/drainage field

- H15451 FIP * CC110 allows inlet/outlet to tubing connection



THANK YOU FOR PARTICIPATING

WHERE DO YOU WANT TO BE FRIDAY AFTERNOON?