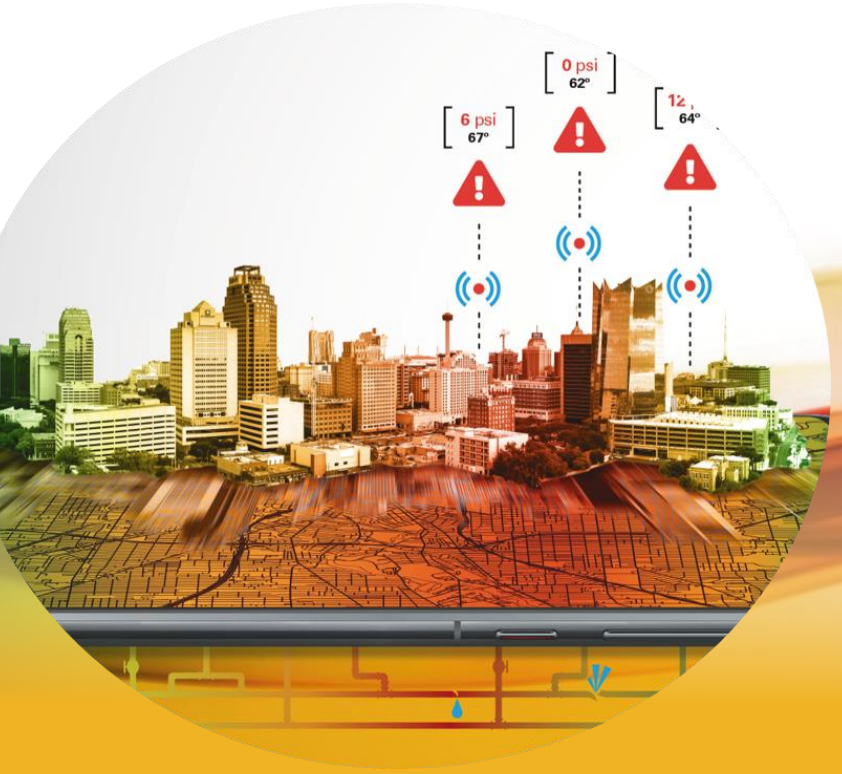
iHydrant

by CLOW

CLOW CANADA

McWANE CANADA

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.



POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

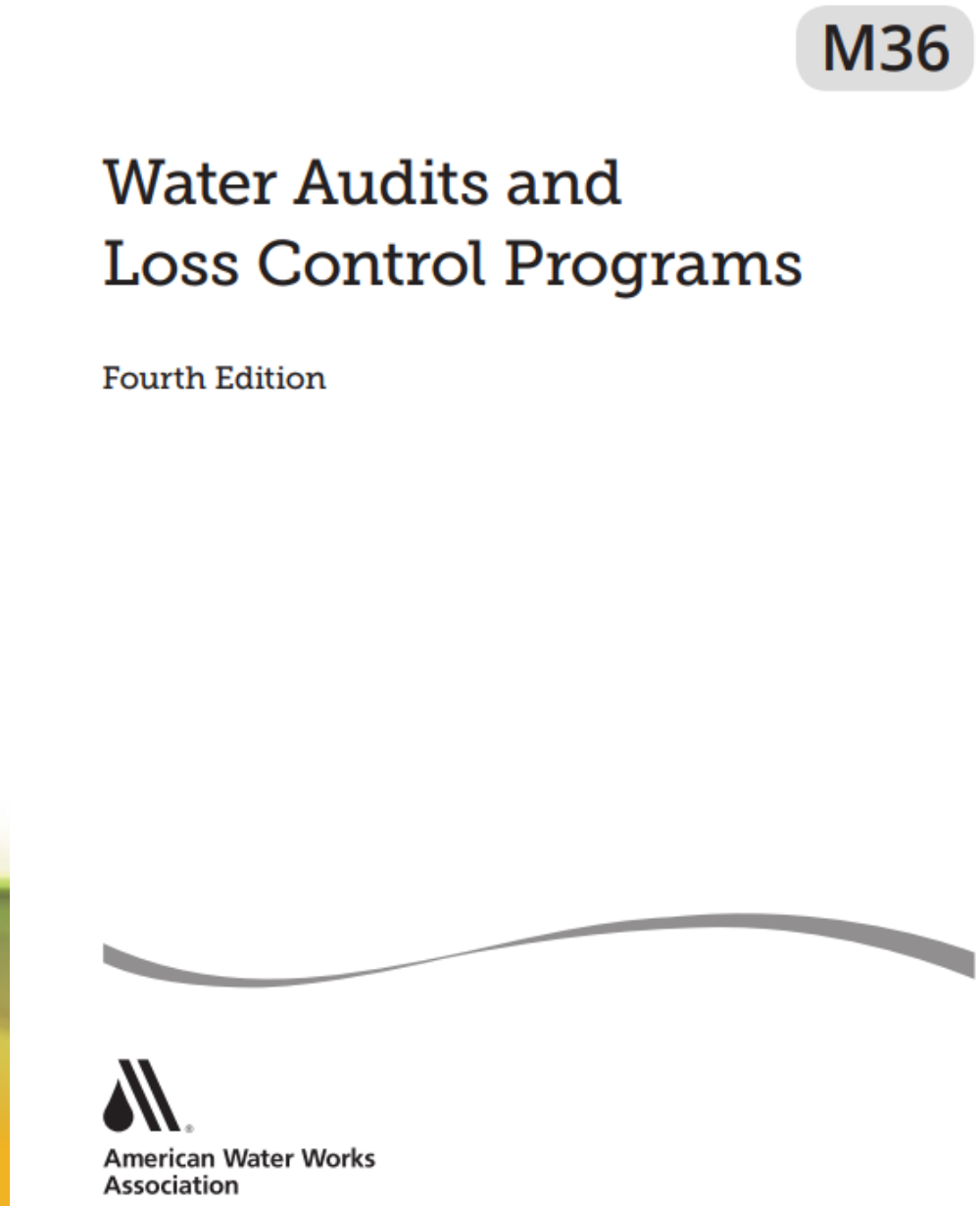
iHydrant® - Mission

‘’Revolutionize water systems by leveraging powerful real time analytics and actionable insights to detects and prevent water loss and evolve the way your utility looks at water. ‘’

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Why Manage Pressure?

Real-time Intelligence. Insightful Analytics.



By effectively managing and optimizing pressure in the water distribution system, water main and service connection leakage can be reduced, and pipeline asset life can be extended.

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Pressure Monitoring

⬇

Pressure Optimization

⬇

Extended Asset Life

https://www.awwa.org/Portals/0/files/publications/documents/M36LookInside.pdf

American Water Works Association

WATER LOSS CONTROL COMMITTEE

Pressure Management: Options and Opportunities

Drinking water utilities pressurize infrastructure to provide high-quality service, prevent backflow, and accommodate elevation gradients across service territories. Pressure is typically supplied using a combination of pumping infrastructure, storage tanks and gravity. However, excess pressure, particularly caused by elevation change, can contribute to infrastructure failure and compromise service. As a result, pressure must often be supplied and then reduced to maintain a range of acceptable pressure across a service territory. To reduce pressure, many utilities install pressure-regulating infrastructure like pressure reducing valves.

Many utilities are considering transitioning from a historical posture of reactive pressure management to a more engaged, proactive stance. However, the specific pressure management tools and implementation plans will vary from utility to utility, depending on the utility's intent and the infrastructure already in place. Nonetheless, all pressure management strategies share a unified goal: supply pressure that fully meets service needs while eliminating excess pressure and pressure transients that cause leakage and infrastructure damage.

Benefits of Pressure Management

Pressure management offers a host of benefits for both a utility and its customers. For example, effective pressure management:

- Improves customer service through appropriate service pressures and reduced service interruptions
- Reduces leakage volumes by decreasing both the frequency of leaks and the flow rate of any given leak
- Extends asset life by reducing stress on infrastructure (particularly in the form of pressure transients)
- Decreases energy expenditures in systems with pumping infrastructure by targeting pressure reductions and therefore the energy costs associated with supplying pressure
- Reduces the potential for contamination through pressure transients in which water pressure can be negative for short periods of time
- Can empower more effective demand management through variable pressure supply connected to demand

Considerations and Costs

Pressure management often requires initial investment before benefits can be realized. Most systems in the United States operate as open grids, meaning that targeted pressure reduction requires the installation of additional infrastructure and/or a coordinated pressure optimization plan involving all infrastructure in a service zone. Typically, utility managers and engineers should consider the following questions in planning a pressure management strategy:

- What pressure infrastructure already exists? Where is the infrastructure located? What are its settings, and when was it last maintained or checked for acceptable performance? Answering these questions usually requires an inventory of tanks, pressure-reducing valves, pumps, surge tanks, and other similar assets.
- What pressures are currently supplied throughout the distribution system? Are pressures too low in some places, too high in some places, or generally appropriate for service needs, including fire protection, if provided? Answering these questions typically requires pressure logging at locations (e.g., hydrants) throughout the system.

AWWA advocates for Proactive Pressure Monitoring

POWERFUL ANALYTICS. ACTIONABLE INSIGHTS.

The more data a utility has displaying system pressure, the more effectively system pressure can be managed.

https://www.awwa.org/Resources-Tools/Resource-Topics/Water-Loss-Control

Pressure Monitoring Blindspot Problem

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Pressure monitoring data has historically been limited to pump locations and water reservoirs exclusively, leaving a massive pressure measurement blindspot.

"You can't manage what you can't measure"

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

iHydrant® Solution

Real-time Intelligence. Insightful Analytics.

iHydrant® Solution to Blindspot Problem

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

iHydrantTM sensors located in the hydrant boot are in constant contact with the water and Always On.

Data gathering in real time and continuously for Pressure and Temperature

Real Time Alerts (breakage, theft, abnormal use, etc.)

Measurement data is presented as visual graphics, alerts and reports

.

iHydrant® Solution to Blindspot Problem

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Converting existing hydrant assets provide an economical remote monitoring solution.

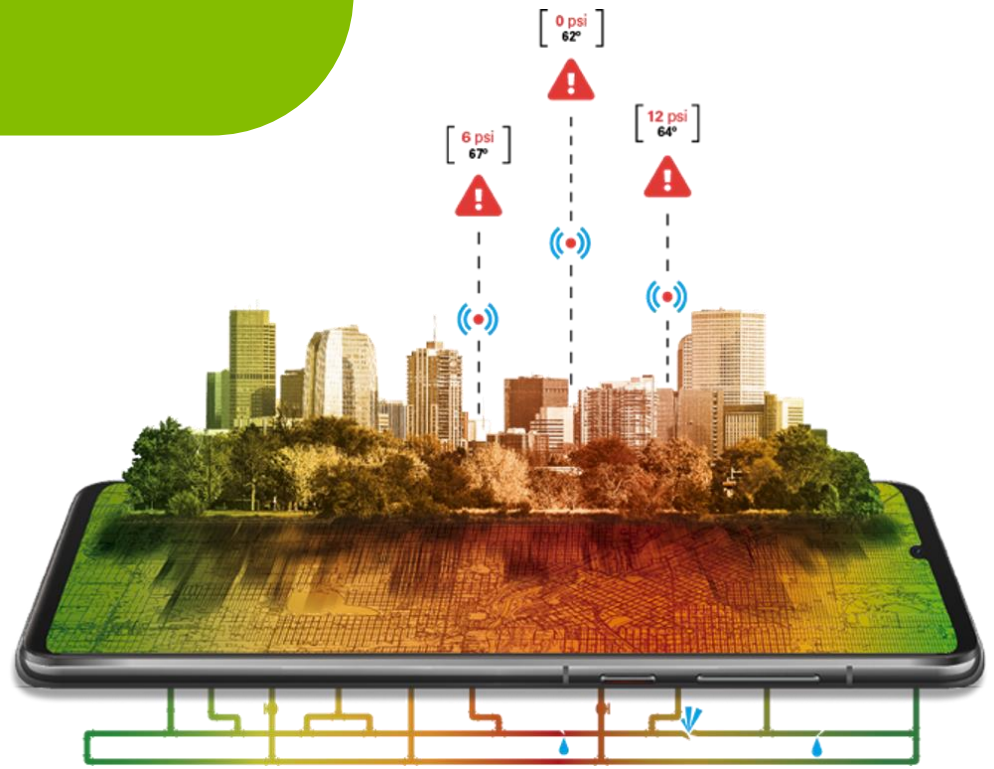
Excavation not necessary with conversion kits.

No electricity required.

A dual-purpose hydrant, fight fires AND acquires data providing vision throughout the network.

Improves overall system performance.

Deployment Strategies



- 1 iHydrant for 15 to 20 hydrants
- Areas with known issues
- Low traffic areas
- Near pumping stations, valve chambers, etc.
- Have municipality specs in new construction / development projects

iHydrant

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

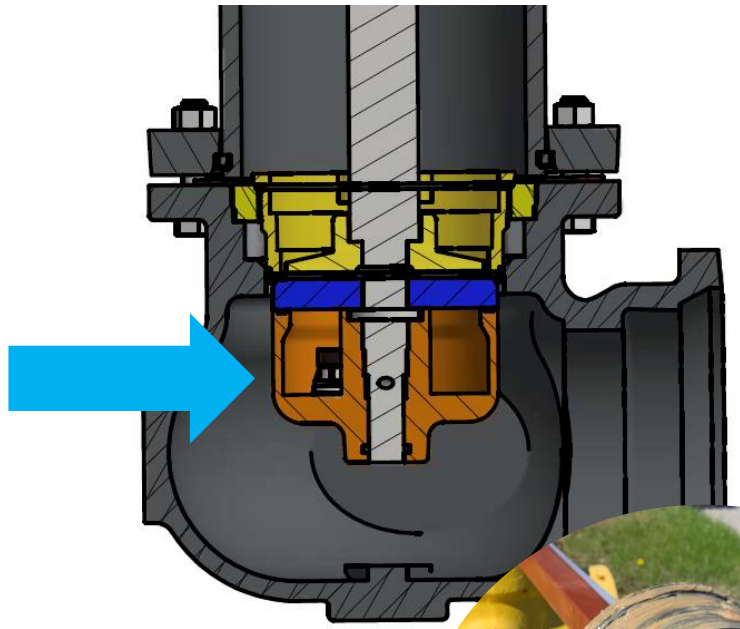
POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Mechanical Design

Real-time Intelligence. Insightful Analytics.

Patented OEM Sensors

- Located at the base
- Reading Network Data
- In real time – 24hr / 7days
- No Handling



POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Cast Iron Spool

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Shroud with Electronics

- Data transmission via cellular network
  - LTE CAT 1 (Rogers)
- Long-lasting battery
  - Lithium

iHydrant

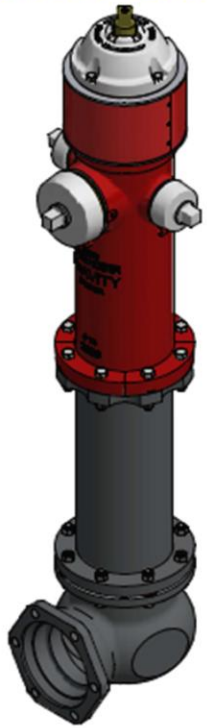
POWERFUL ANALYTICS. ACTIONABLE INSIGHTS.

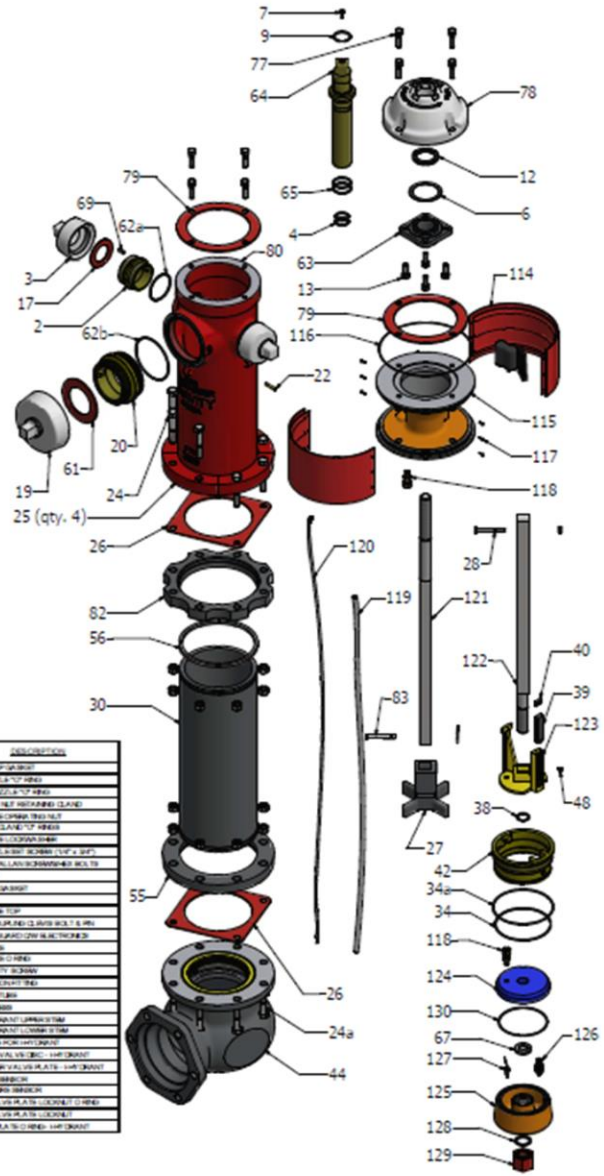
CLOW

CLOW CANADA

M67B BRIGADIER

I-HYDRANT





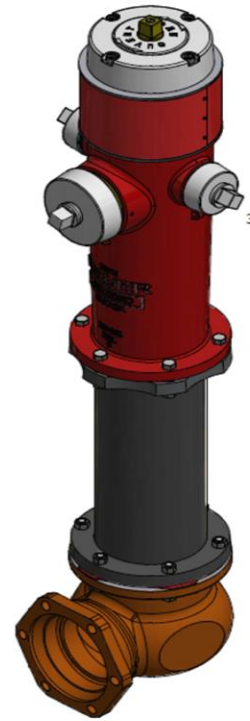
Ref No	DESCRIPTION	Ref No	DESCRIPTION
2	HOSE NOZZLE	61	PUMPER CAP GASKET
3	HOSE NOZZLE CAP	62a	HOSE NOZZLE "O" RING
4	HOLDING STRAP "O" RING	62b	PUMPER NOZZLE "O" RING
5	HOSE CAP CHAIN & "S" HOOK	63	OPERATING NUT RETAINING CLAMP
6	HOLDING JOINT GASKET	64	HYDRAULIC OPERATING NUT
7	OIL HOLE SCREW	65	RETAINING CLAMP "O" RING
9	OPERATING NUT "O" RING	67	MAIN VALVE LOCKWASHER
12	OPERATING NUT WASHER	69	HOSE NOZZLE NUT SCREW (1/4" x 3/4")
13	CAP SCREW (1/2" X 1 1/4")	77	BODY CAP ALLAN SCREW HEX BOLTS
17	HOSE CAP GASKET	78	BODY CAP
19	PUMPER NOZZLE CAP	79	BODY CAP GASKET
20	PUMPER NOZZLE	80	BODY
21	PUMPER CAP CHAIN & "S" HOOK (optional)	82	RISER FLANGE TOP
22	PUMPER NOZZLE O-RN	83	SAFETY COUPLING SWIVEL BOLT & PIN
24	INTERSECTION BOLTS & NUTS 5/8"x3 1/2"	114	MAIN VALVE GUARD (ON ELECTRONICS)
24a	INTERSECTION BOLTS & NUTS 5/8"x3"	115	BARREL RISER
25	SAFETY FLANGE ASSEMBLY	116	BARREL RISER O RING
26	INTERSECTION GASKET	117	TORX SAFETY SCREW
27	SAFETY COUPLING	118	COMPRESSION FITTING
28	SAFETY COUPLING BOLT & NUT (3/8" X 3")	119	HOSE MAIN TUBE
30	INTERMEDIATE SECTION	120	WIRE HARNESS
34a	SWIVEL "O" RING (TOP)	121	METR-HYDRANT UPPER STEM
34	SWIVEL "O" RING (BOTTOM)	122	METR-HYDRANT LOWER STEM
38	MAIN VALVE "O" RING	123	DRIP VALVE FOR HYDRANT
39	DRIP VALVE HOUSING	124	METR MAIN VALVE BODY - HYDRANT
40	HOLDING CLAMP	125	METR - LOWER VALVE PLATE - HYDRANT
42	MAIN VALVE SEAT	126	PRESSURE SENSOR
44*	ELBOW (STATIN PILOT REQUIRED)	127	TEMPERATURE SENSOR
48	HOLDING CLAMP SCREW	128	LOWER VALVE PLATE LOCKBOLT O RING
55	RISER FLANGE (BOTTOM)	129	LOWER VALVE PLATE LOCKBOLT
56	RETAINING RING (SQUARE)	130	METR L.V. PLATE O RING - HYDRANT

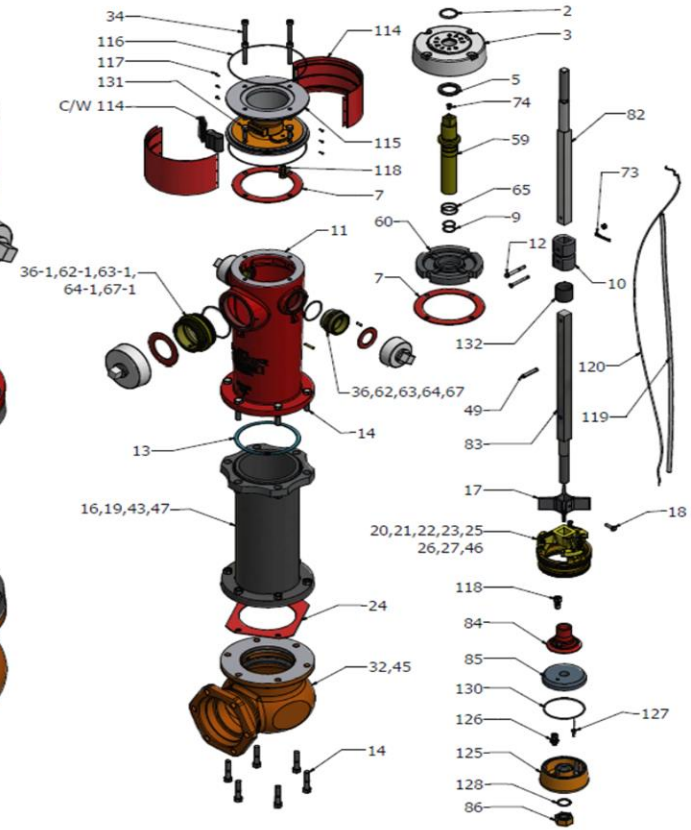
CLOW

CLOW CANADA

D67M-P PREMIER

*i*HYDRANT



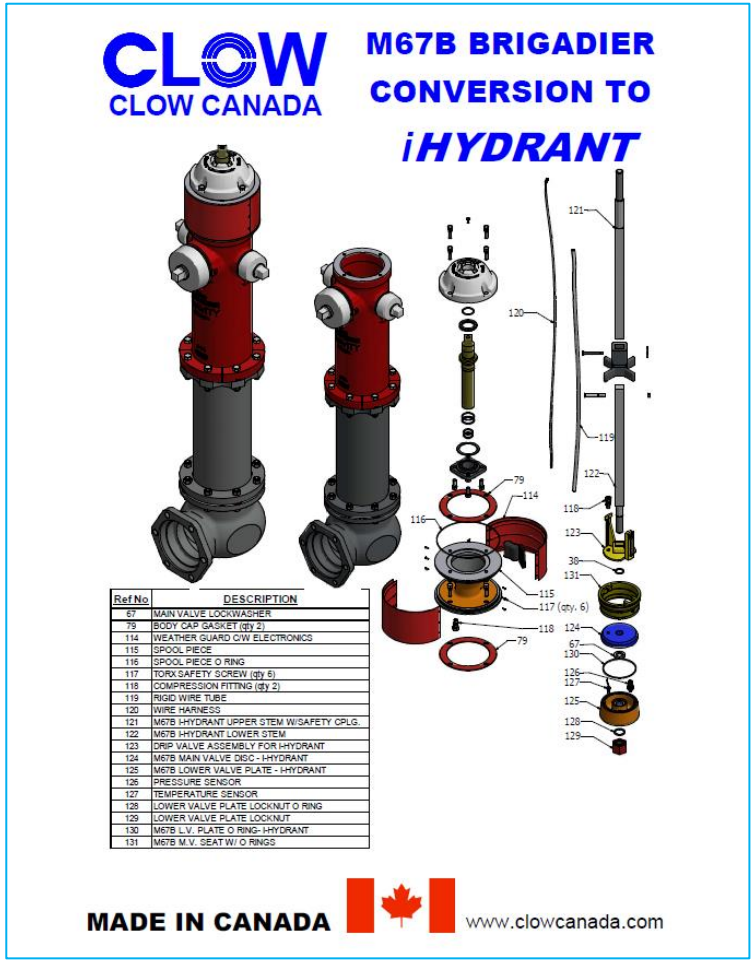


RÉF.	DESCRIPTION	RÉF.	DESCRIPTION	RÉF.	DESCRIPTION	RÉF.	DESCRIPTION
2	JOINT TORIQUE DU CHAPEAU	22	RIVET DU PURGEUR	59	ÉCROU DE MANOEUVRE HYDRALUBE	85	OPERCULE D67M-P I-HYDRANT
3	CHAPEAU	23	CAOUTCHOUC DU PURGEUR	60	COLLET DE RETENUE ÉCROU MANOEUVRE	86	ÉCROU BLOCAGE SUPPORT INF. D67M-P I-HYDRANT
5	TOURILLON EN DELRIN	24	GARNITURE DE LA BASE	62	BOUCHE 65MM	114	PROTECTEUR ÉTANCHE INCL. ÉLECTRONIQUE
7	GARNITURE DU CHAPEAU	25	JOINT TORIQUE SUP. DU SIÈGE	62-1	PRISE DE POMPAGE	115	EXTENSION
9	JOINT TORIQUE INT. NOIX D'OP.	26	SIÈGE DE LA VANNE (DRAINANT)	63	BOUCHON DE LA BOUCHE 65MM	116	JOINT TORIQUE DE L'EXTENSION
10	ACCOUPLEMENT DE SÛRETÉ	26A	SIÈGE DE LA VANNE (NON DRAINANT)	63-1	BOUCHON DE LA PRISE DE POMPE	117	VIS DE SECURITE DE TYPE TORX
11	CORPS	27	JOINT TORIQUE INFÉRIEUR DU SIÈGE	64	JOINT TORIQUE DE LA BOUCHE	118	RACCORD À COMPRESSION
12	BOULON & ÉCROU ACCOUPL. 3/8" x 3"	32 *	BASE	64-1	JOINT TORIQUE DE LA PRISE DE POMPE	119	TUBE RIGIDE
13	GARNITURE DU CORPS	34	VIS ALLEN DU CHAPEAU 1/2" x 3"	65	JOINT TORIQUE INF. ÉCROU MANOEU.	120	FAISCEAU DE FILS
14	BOULON & ÉCROU DU CORPS 5/8" x 3"	36	GARNITURE DU BOUCHON 65MM	67	VIS DE BLOCAGE DE LA BOUCHE 1/4"x 3/4"	125	PLAQUE DE SUPPORT OPERCULE D67M-P/M67BI-HYD
16	BRIDE DE RUPTURE	36-1	GARNI. DU BOUCHON DE POMPAGE	67-1	CHEVILLE BLOCAGE PRISE POMPAGE	126	CAPTEUR POUR LA PRESSION
17	GUIDE DE TIGE	43	ANNEAU DE RETENUE DE LA BRIDE	73	BOULON ET GOUPILLE ACCOUPL. SÛRETÉ	127	CAPTEUR POUR LA TEMPÉRATURE
18	BOULON DU GUIDE DE TIGE	45*	DOUILLURE DE L'ORIFICE DE DRAINAGE	74	VIS DE GRAISSAGE	128	JOINT TOR. ÉCROU BLOCAGE PLAQUE DU SUPP. OPERC.
19	TUYAU DE RACCORDEMENT	46	RESSORT DU PURGEUR	82	TIGE SUPÉRIEURE D67M-P I-HYDRANT	130	JOINT TOR. PLAQUE SUPPORT OPERC. D67M-P I-HYD
20	TRÉPIED DU PURGEUR	47	BRIDE FLOTTANTE	83	TIGE INFÉRIEURE D67M-P I-HYDRANT	131	BOULONS DE L'EXTENSION
21	VIS DE PURGEUR	49	GOUJON TYPE SPIRAL	84	SUPPORT INFÉRIEUR D67M-P I-HYDRANT	132	TUBE THERMO-RÉTRACTABLE DE LA TIGE INF.

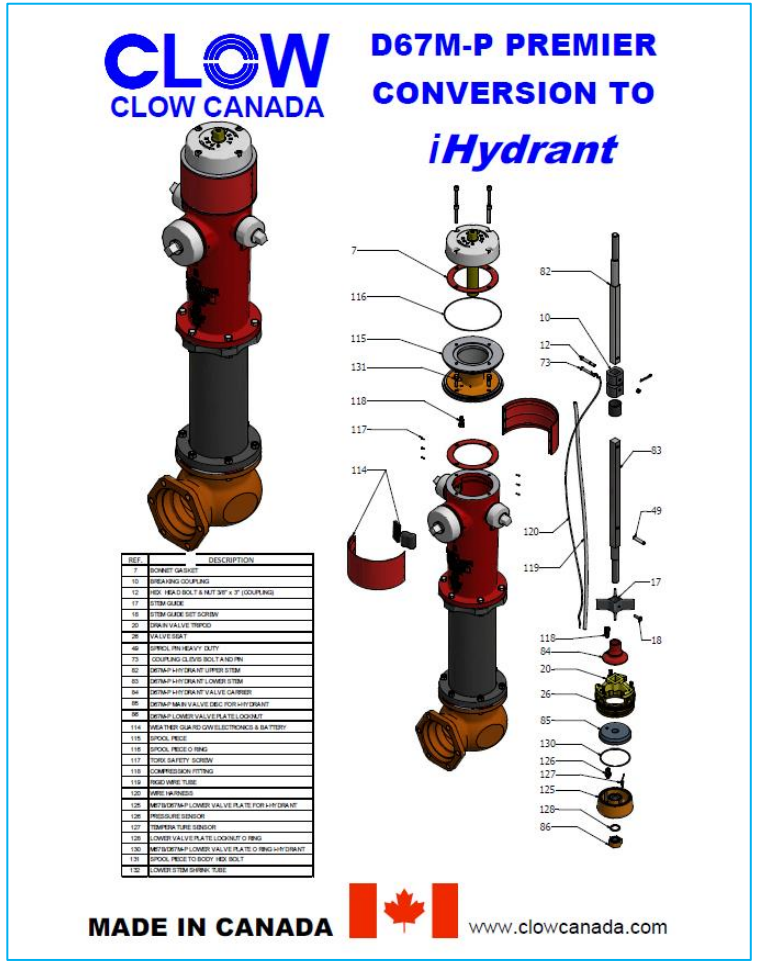
Conversion to an existing Clow Hydrant

Conversion

45-60 minutes



Ref No	DESCRIPTION
67	MAIN VALVE LOCKWASHER
79	BODY CAP GASKET (qty 2)
114	WEATHER GUARD C/W ELECTRONICS
115	SPOOL PIECE
116	SPOOL PIECE O RING
117	TORX SAFETY SCREW (qty 6)
118	COMPRESSION FITTING (qty 2)
119	RIGID WIRE TUBE
120	WIRE HARNESS
121	M67B IHYDRANT UPPER STEM W/SAFETY CPLG.
122	M67B IHYDRANT LOWER STEM
123	DRIP VALVE ASSEMBLY FOR IHYDRANT
124	M67B MAIN VALVE DISC - IHYDRANT
125	M67B LOWER VALVE PLATE - IHYDRANT
126	PRESSURE SENSOR
127	TEMPERATURE SENSOR
128	LOWER VALVE PLATE LOCKNUT O RING
129	LOWER VALVE PLATE LOCKNUT
130	M67B L.V. PLATE O RING- IHYDRANT
131	M67B M.V. SEAT W/ O RINGS



REF.	DESCRIPTION
7	BONNET GASKET
10	BREAKING COUPLING
12	HEX. HEAD BOLT & NUT 3/8" x 3" (COUPLING)
17	STEM GUIDE
18	STEM GUIDE SET SCREW
20	DRAIN VALVE TRIPOD
26	VALVE SEAT
49	SPROL PIN HEAVY DUTY
73	COUPLING CLEVIS BOLT AND PIN
82	D67M-P HYDRANT UPPER STEM
83	D67M-P HYDRANT LOWER STEM
84	D67M-P HYDRANT VALVE CARRIER
85	D67M-P MAIN VALVE DISC FOR HYDRANT
86	D67M-P LOWER VALVE PLATE LOCKNUT
114	WEATHER GUARD C/W ELECTRONICS & BATTERY
115	SPOOL PIECE
116	SPOOL PIECE O RING
117	TORX SAFETY SCREW
118	COMPRESSION FITTING
119	RIGID WIRE TUBE
120	WIRE HARNESS
125	M67B/D67M-P LOWER VALVE PLATE FOR HYDRANT
126	PRESSURE SENSOR
127	TEMPERATURE SENSOR
128	LOWER VALVE PLATE LOCKNUT O RING
130	M67B/D67M-P LOWER VALVE PLATE O RING HYDRANT
131	SPOOL PIECE TO BODY HEX BOLT
132	LOWER STEM SHRINK TUBE

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

iHydrant

Model	• 1100-XXX03, 1100-XXX04, 1100-XXX05
Description	• Wireless Pressure and Temperature Monitor for Dry Barrel Hydrants
Pressure Sensor	• **Pressure Range:** -15-500 psi • **Over Pressure:** 1000 psi • **Burst Pressure:** 2500 psi • **Accuracy:** +/-0.75% Full Scale
Temperature Sensor	• **Accuracy:** +/-1.0° C
Data Logging	• **Sample Rate:** Configurable up to 256 samples/sec • **Data Captured:** Minimum, maximum, and average pressure and temperature • **Interval Read:** Five minute anchor reads • **Memory:** Greater than 100,000 data values
Event/Alert Monitoring	• Configurable minimum/maximum pressure, temperature and transient thresholds • Thirty second pre and post event detail capture • Pressure, temperature and transient alerts sent via email or text
Battery	• 38 Ah Lithium
Communication	• **Cellular:** LTE modem (selected carrier based on coverage)
Software	• iHydrant® Cloud based software platform
Enclosure	• IP 65 rated advanced polycarbonate shield • OEM ductile iron spool • Retrofittable kit or factory installed with new hydrant
Dimensions	• **Spool and Enclosure Height:** 6" • **Clow Canada Brigadier:** 10" Diameter Spool • **Clow Canada Premier:** 10" Diameter Spool

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Warranties

- 2 years on electronic components
- 12 years for the hydrant

iHydrant

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

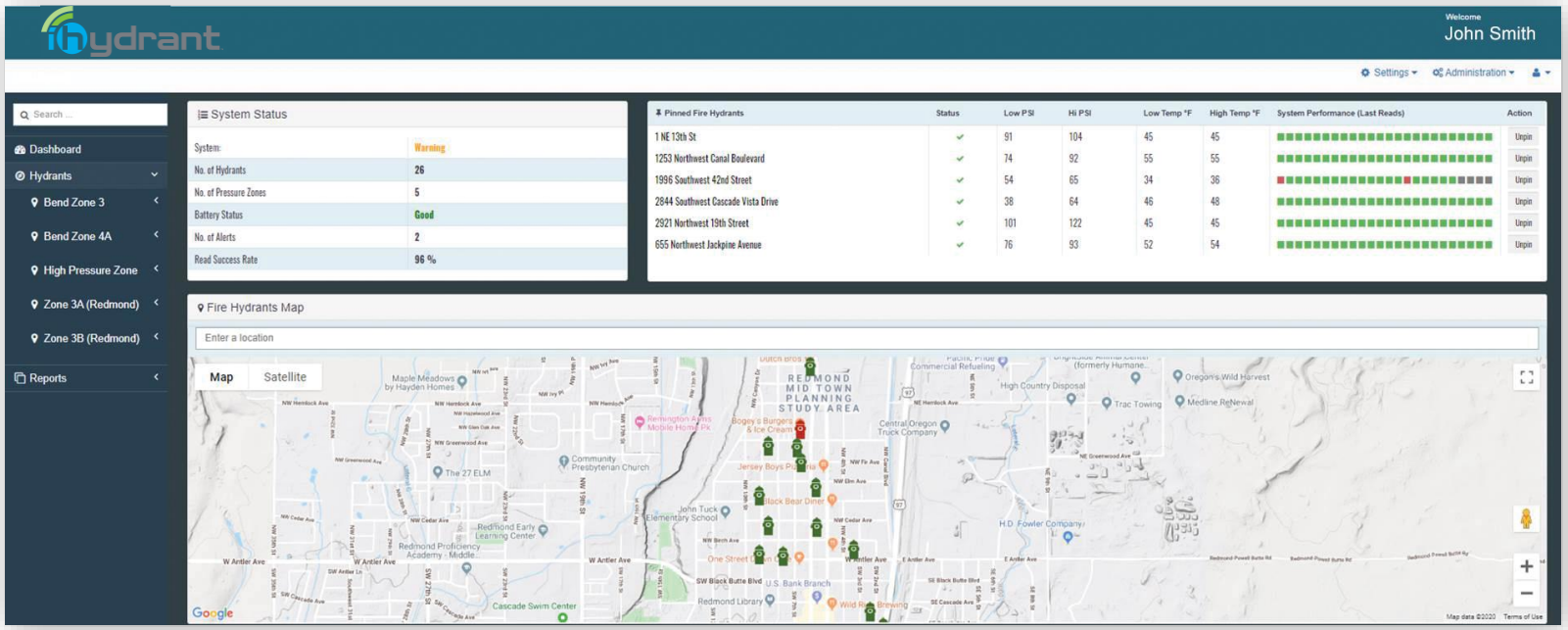
POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

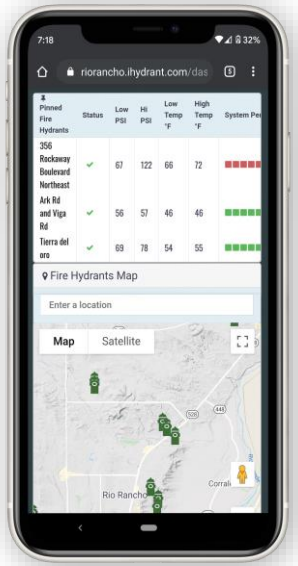
Software / Data

Real-time Intelligence. Insightful Analytics.

Software Package

- Hosted, cloud-based platform
- Accessible via internet
- No downloads

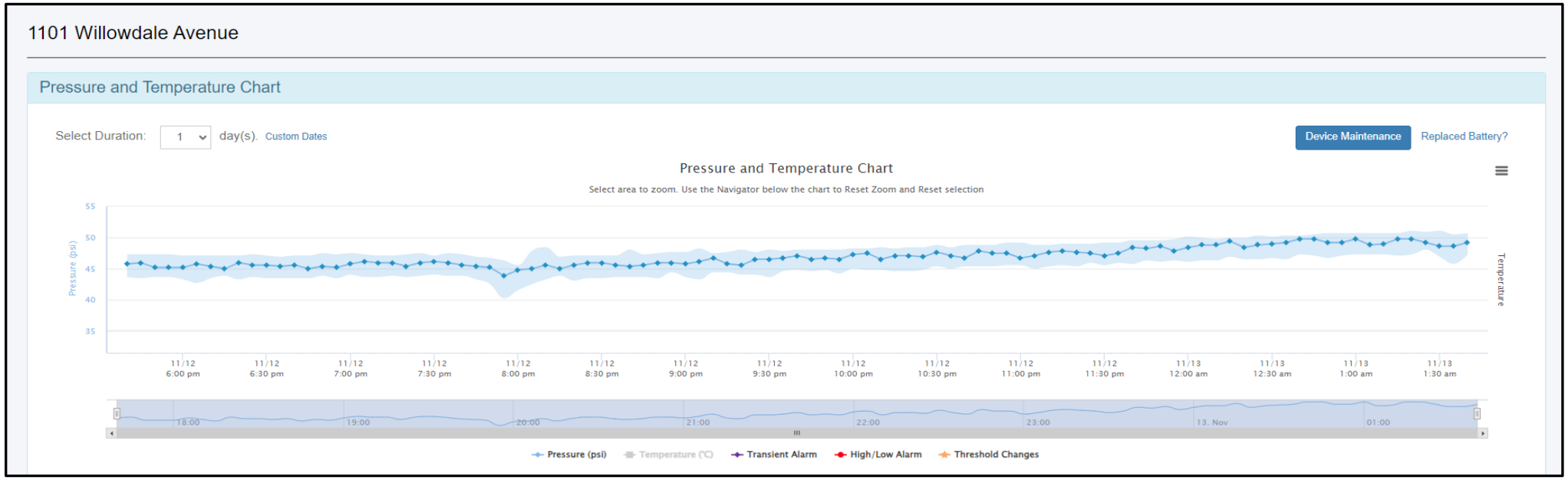




ihydrant

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Pressure Readings



Settings

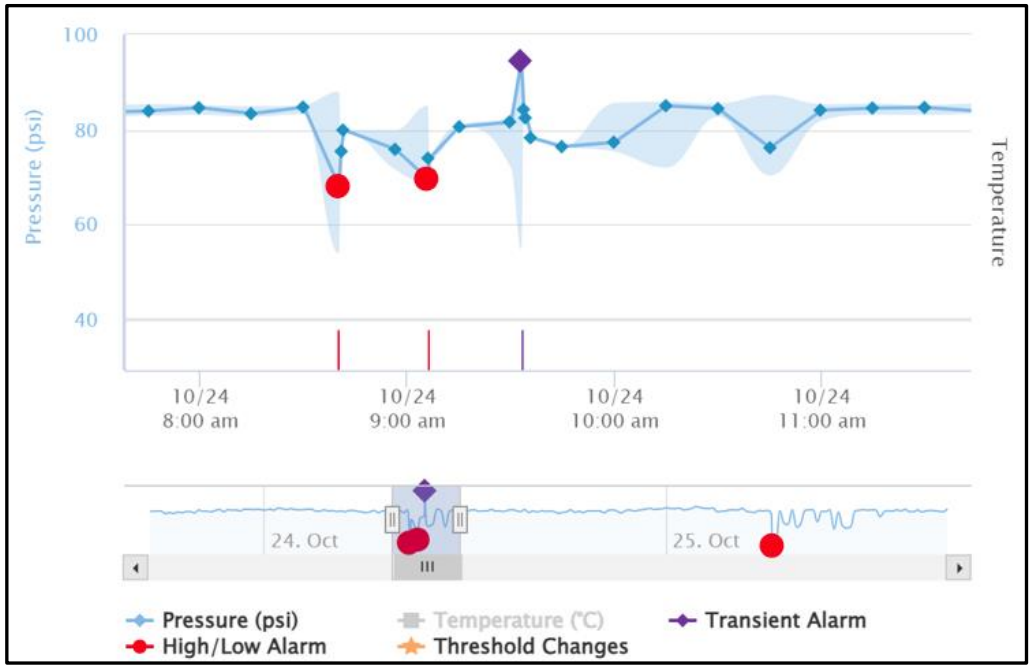
- 1 to 256 readings per second
- 1 average reading every 5 minutes
- Download every 12 hours

iHydrant

POWERFUL ANALYTICS. ACTIONABLE INSIGHTS.

Alerts

- **Set according to your system needs**
  - High and low pressure
  - High and low temperature
  - Pressure transient
  - Low battery



iHydrant

POWERFUL ANALYTICS. ACTIONABLE INSIGHTS.

Alerts

From: admin <administrator@nighthawkcontrol.com>
Sent: Wednesday, January 13, 2021 6:36 AM
To:
Subject: iHydrant Alert: Max. Pressure 74.06 PSI at 3220 Lincoln St

Alert High Pressure Pressure Range 58.88 PSI - 74.06 PSI
Location : 3220 Lincoln St
IMEI : 89148000004280657829
Time : Jan 13 2021 12:35PM (UTC) / Jan 13 2021 4:35AM (PST)

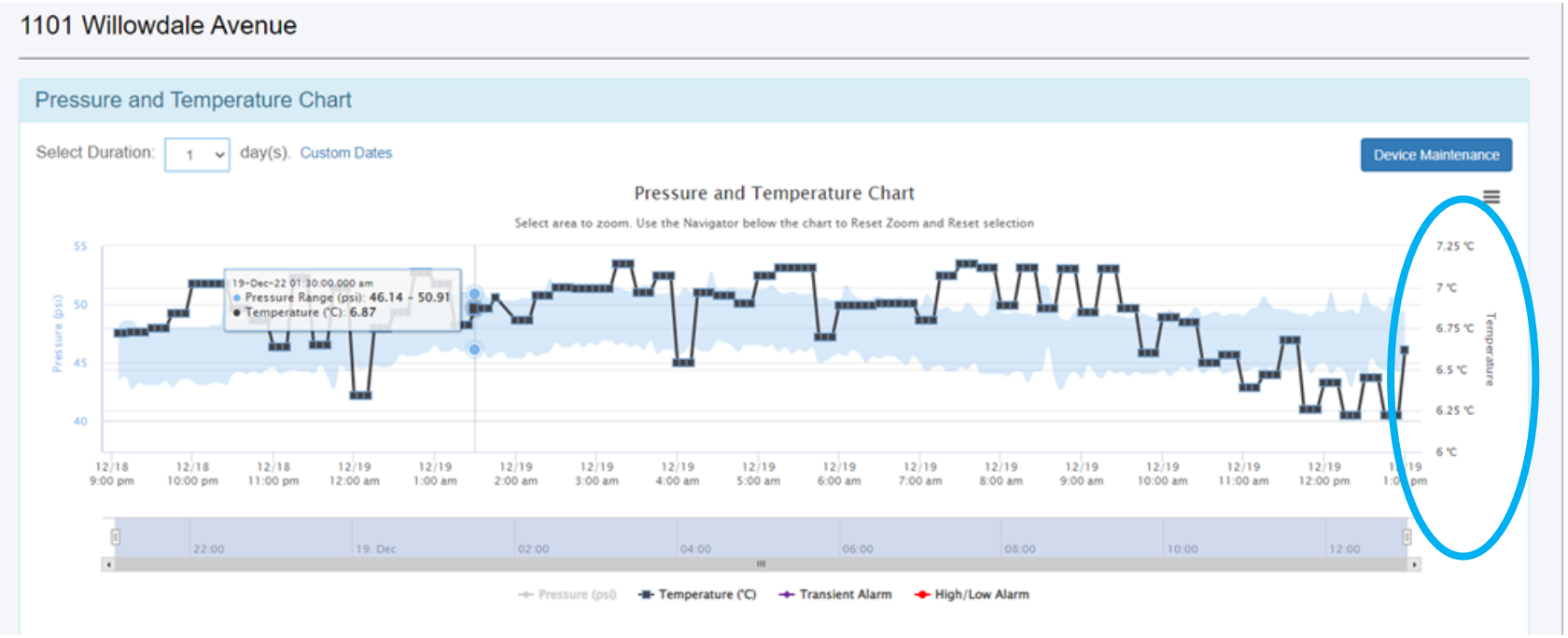
Action Required.

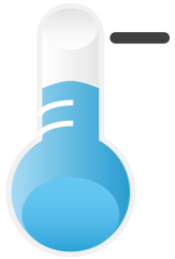
- Instant
- Text message or email
- Data downloads
- Allows you to intervene before complaints from citizens
- Reduces the amount of water loss

iHydrant

POWERFUL ANALYTICS. ACTIONABLE INSIGHTS.

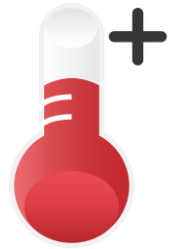
And why the temperature?





Risk of frost

Bacteriological proliferation to be monitored



POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

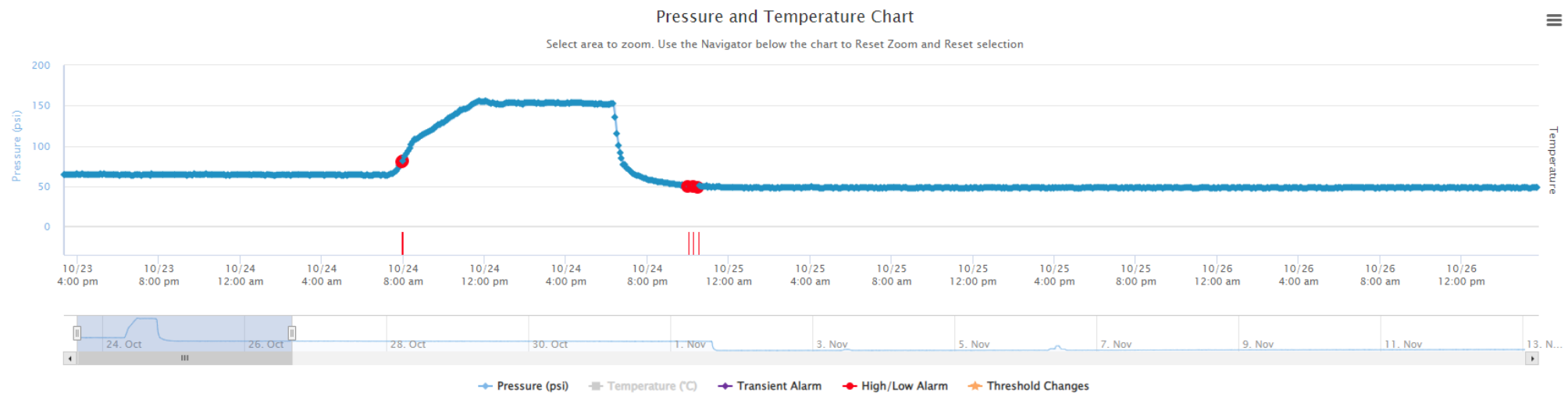
Examples…

Abnormal High-Pressure Alarm – Rosser

Summit Road

Pressure and Temperature Chart

Start Date: 10/23/2023 09:20 AM End Date: 11/13/2023 12:20 PM Update chart with revised date Hide Custom Dates Device Maintenance Replaced Battery?



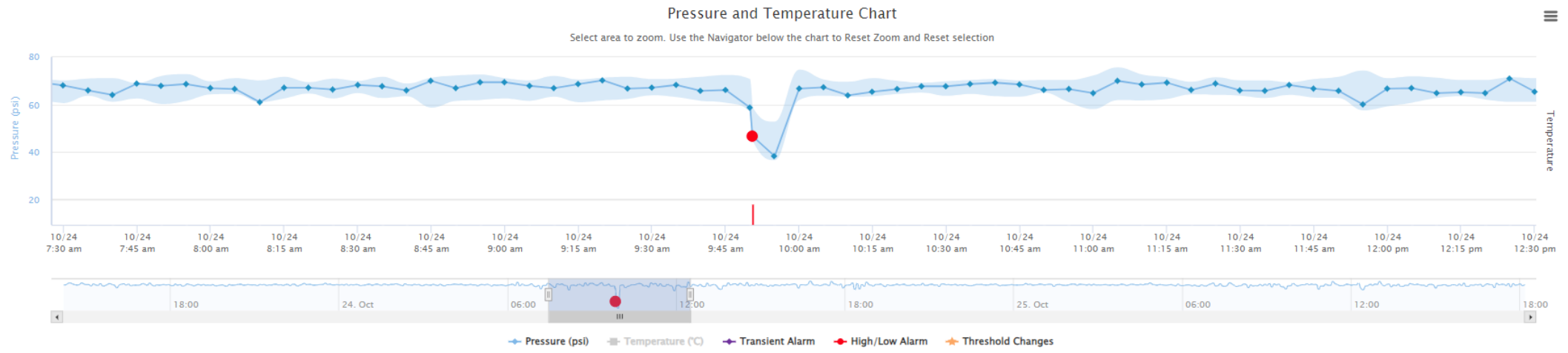
POWERFUL ANALYTICS. ACTIONABLE INSIGHTS.

Water Theft – Headingley Manitoba

4250 Portage Avenue

Pressure and Temperature Chart

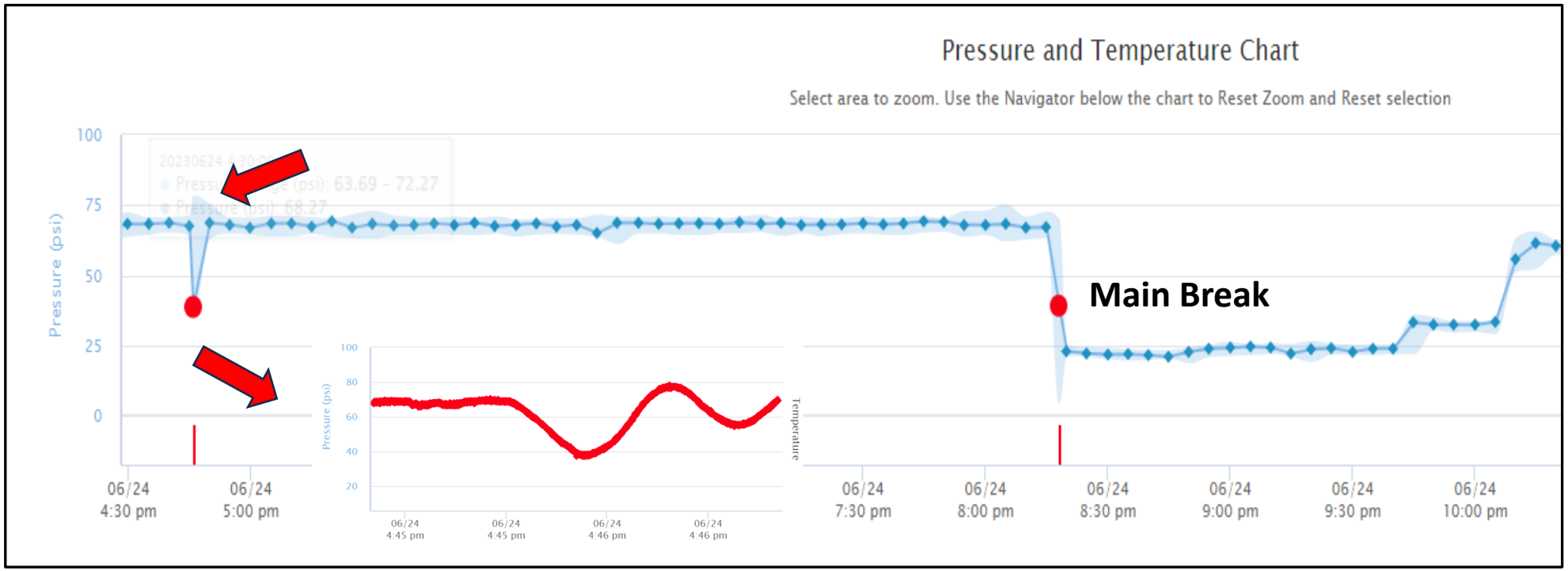
Start Date: 10/23/2023 08:10 AM End Date: 10/25/2023 12:10 PM Update chart with revised date Hide Custom Dates Device Maintenance Replaced Battery?



POWERFUL ANALYTICS. ACTIONABLE INSIGHTS.

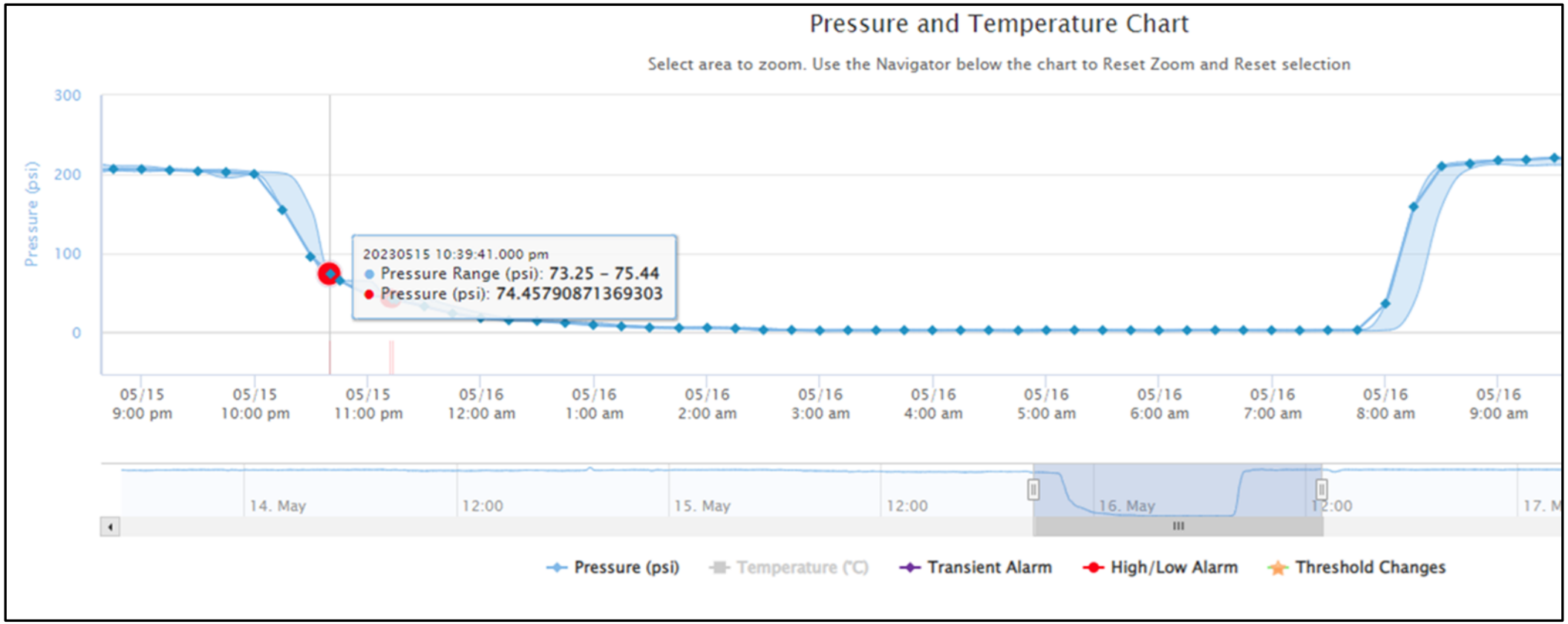
Transient caused Main Break – Ontario

Transient detected a few hours before the 16” PVC main break



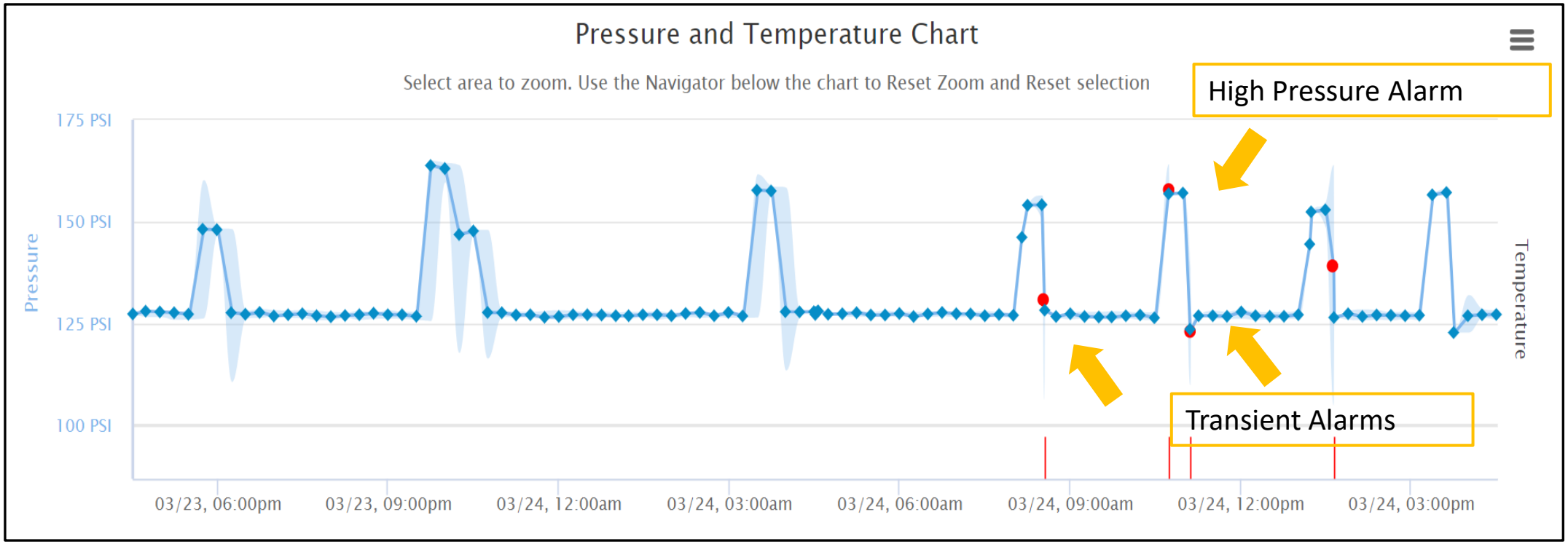
POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Penticton BC – Plugged Screening Syste



POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

Identify Unknown Issued - British Colum



POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.

You have questions?

Adrian Sloan – Product Manager
416 891-4536
Adrian.sloan@clowcanada.com

Martin Phinney – Atlantic sales eng.
506-961-9229
Martin.Phinney@canadapipe.com

Austin Turner – iHydrant Technician
905 807-9536
Austin.turner@clowcanada.com

iHydrant

POWERFUL ANALYTICS.
ACTIONABLE INSIGHTS.