

CAP ALERT™

**MOBILE-PINPOINT INFLOW
LIGHT WEIGHT
SELF-CONTAINED
PRE-ASSEMBLED**

✓ **SMART
COMMUNICATION**

✓ **NO ANTENNA
SHIELDS**

✓ **NO DRILLED
ANTENNA HOLES**

Patent Pending



✓ **POWERED BY
REIGN RMC**

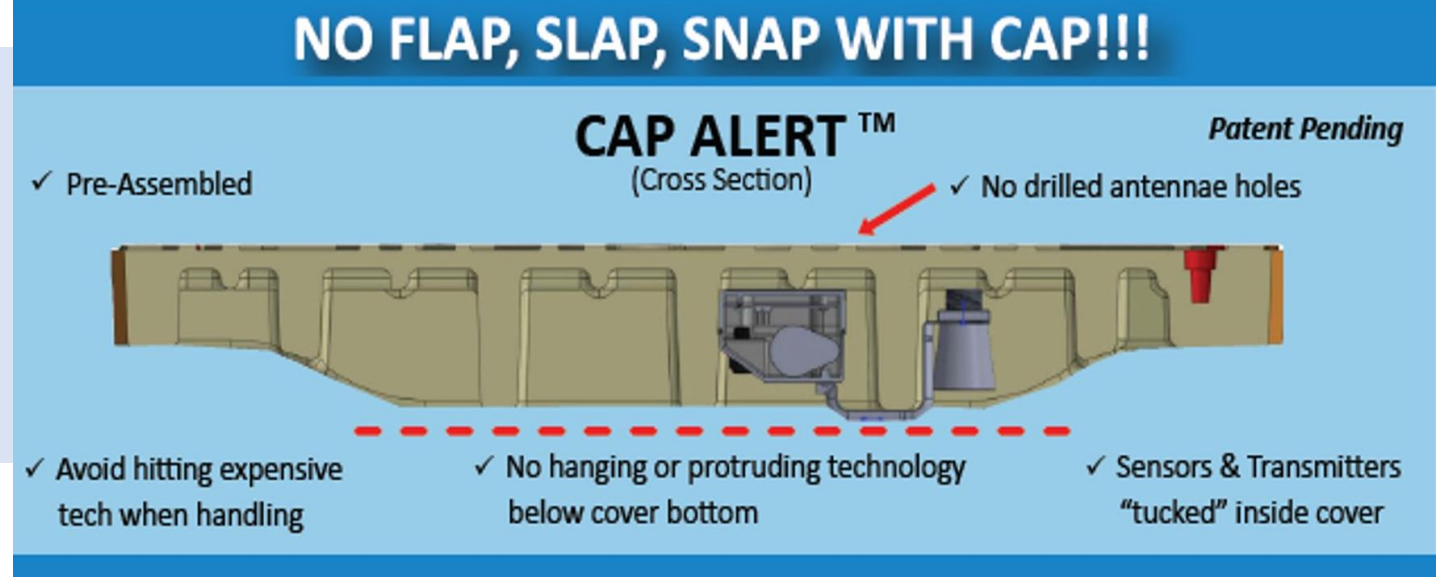
✓ **CORROSION
RESISTANT**

✓ **TRAFFIC
RATED**

✓ **SENSORS
& TRANSMITTERS
PROTECTED**



CAP ALERT® !!!!



- Senses, records, and transmits water levels
- Alarms to help prevent spillovers before they happen - PREVENT SURCHARGES!
- Historic Data and Analytics

CAP ALERT® TRAINING

- **Differentiation/Value Proposition**
- **Dashboard & Capabilities**
- **Q&A**
 - **Install, User Interface, Battery Life, Service & Support, Technical Detail, Reign Expertise**
- **Purchasing CAP ALERT**



CAP ALERT® – The Next Generation of Smart Manhole Technology

No Equipment Hangs Below Cover Surface!!!

View Looking Up At Cover Bottom

Sensor, Transmitter, Antenna, Battery



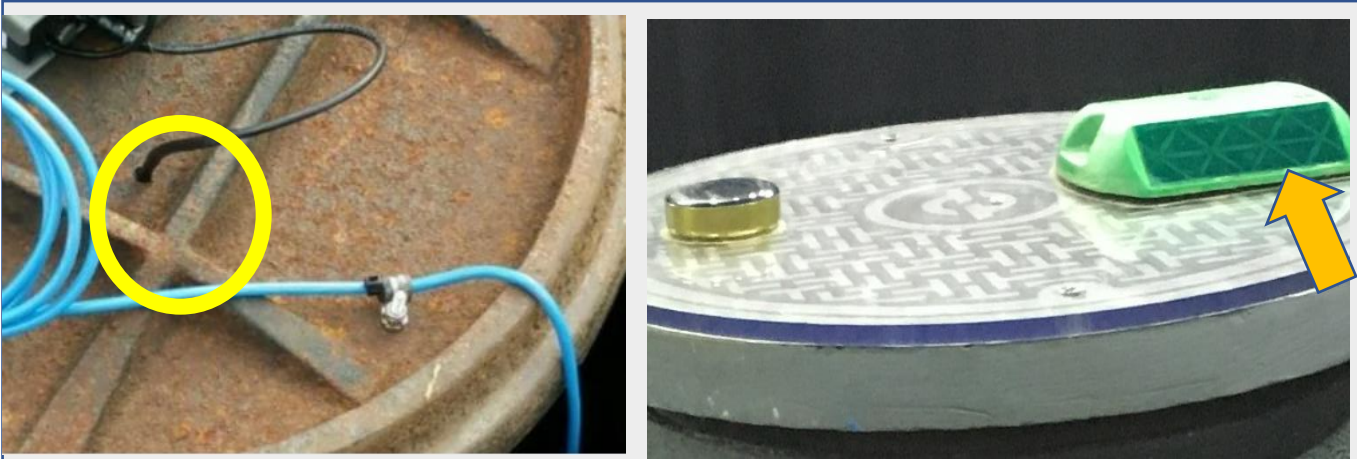
Side View of Cover





No Antenna Holes Or Top Shields

CAP ALERT®



Now you can put this technology in the street without machining special recessed cavities for antennae shield to avoid snowplow damage!!

True Story

One citizen of Los Angeles County, CA thought the antenna shields were cameras spying on him. He smashed all he could find with a sledgehammer!



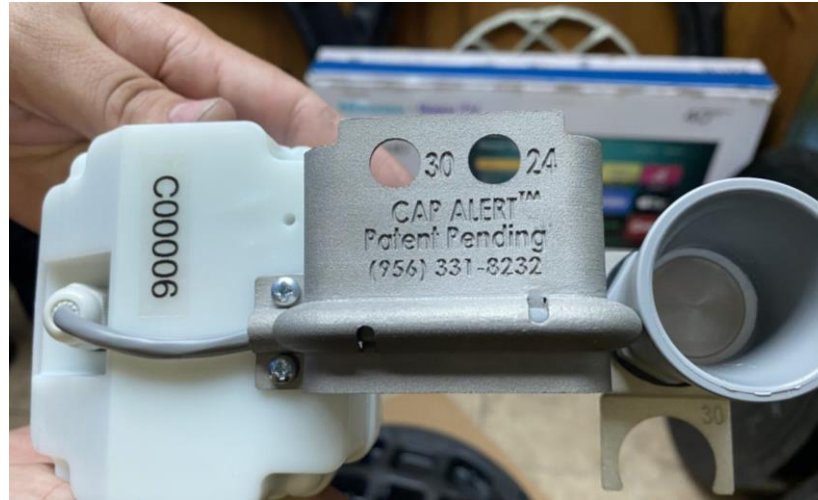


CAPs Are Preassembled And Activated Before Shipment

Current Technologies

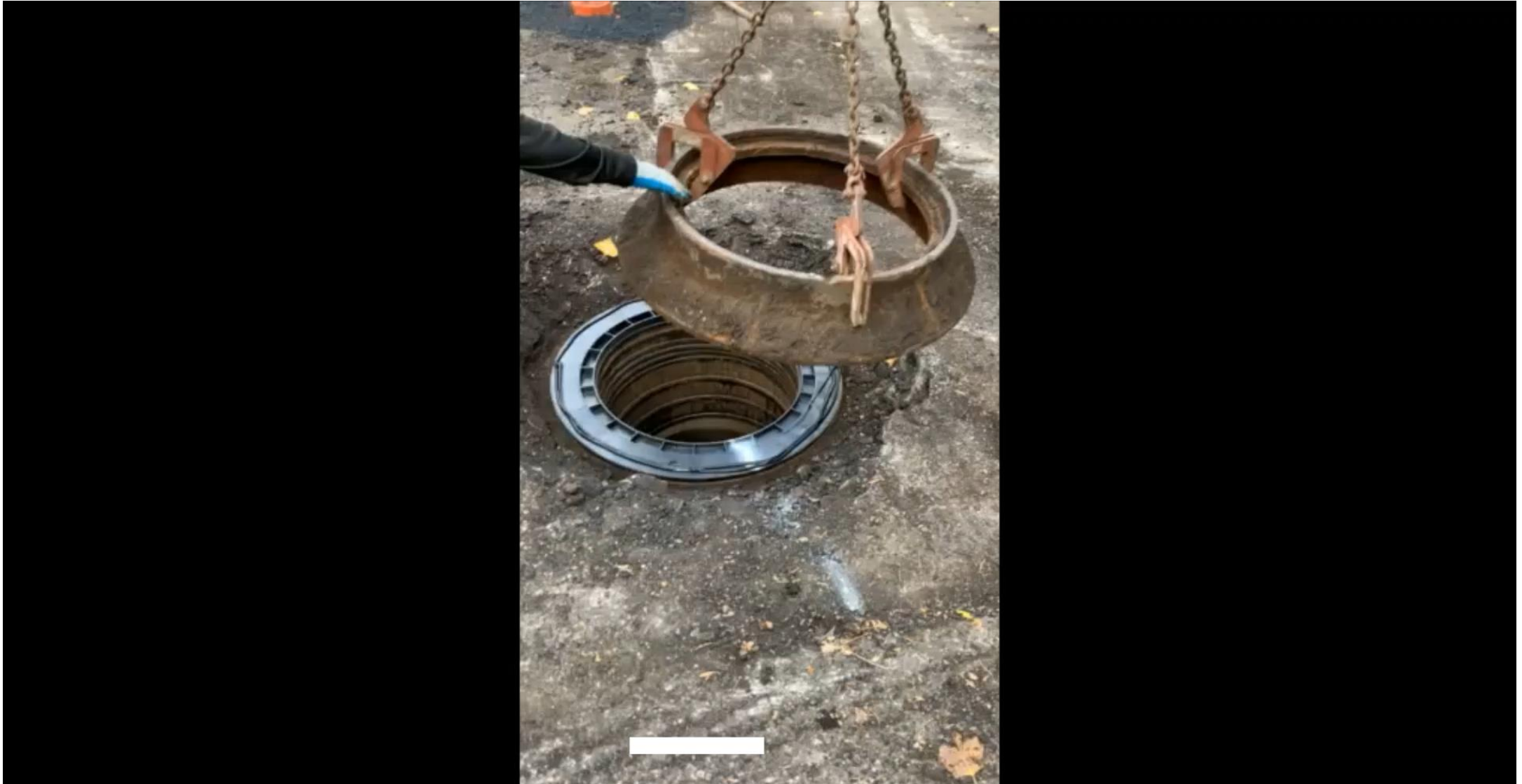


CAP ALERT®



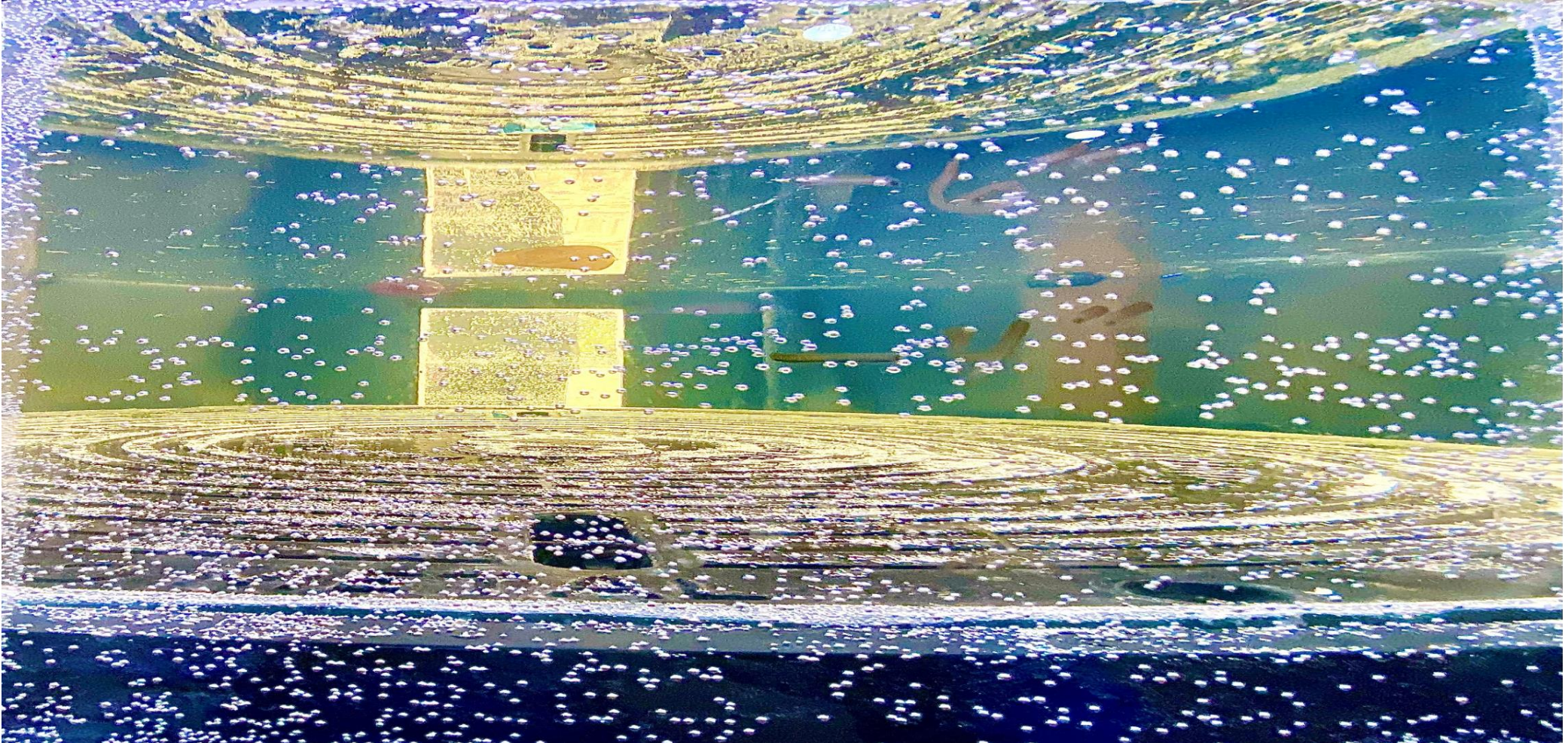


CAP ALERT INSTALLATION – EASY AND SAFE





Watertight Assembly Eliminates Sensor Interference From Leaking Water



DATA INTERFERENCE???

Inflow Through A Typical Cover



Inflow Through A CAP





The CAP ALERT[®] Device



- Self-contained, battery-operated device including antenna, cellular device, ultrasonic sensor
- Ultrasonic sensor has narrow beam (2.6 degrees at 30 ft) to focus on water directly below the sensor
- Sensor is intelligent and prioritizes farthest sensor reading and ignores steps and other closer readings.
- Multicarrier SIM to roam and provides redundancy if a particular carrier's cell tower is damaged or inoperative.
- Device reports on fixed time intervals, and also on exceptions:
 - Water level is above fixed level point
 - Water level is below fixed level point
 - Water level has changed by a certain amount since the last reading (defaults to 2% or 7.2 inches)
- Reading resolution to 1 inch.
- Cellular takes advantage of ever-increasing blanket of cellular signals and towers.
- Highly configurable over the air to allow for customization to various city needs.
- Device software can be updated over the air as new features are released.



Mobile to Pinpoint I&I Troubleshooting

(without having device at each location!)

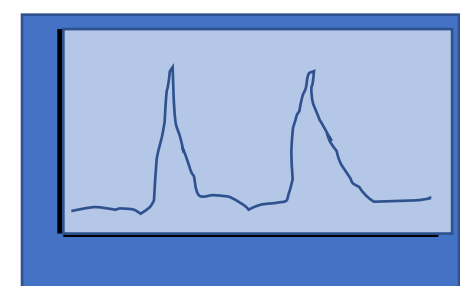
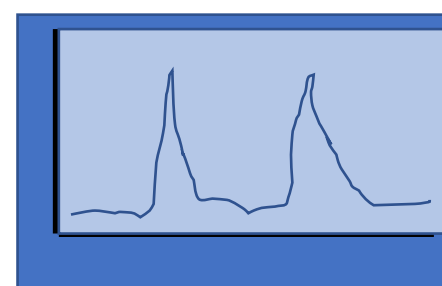
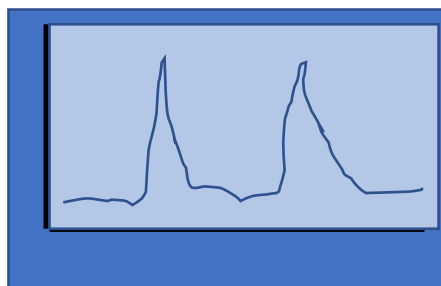
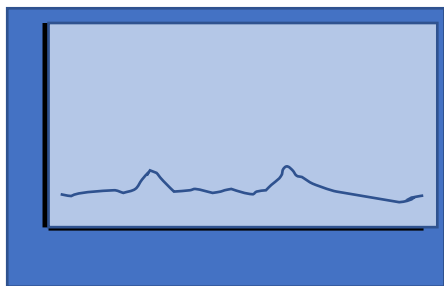
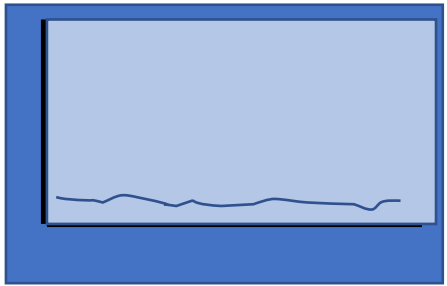
Manhole #1

Manhole #2

Manhole #3

Manhole #4

Manhole #5



Example shows CAP ALERT moving along system and showing dramatic fluid level increase between #2 and #3 and not much added increase in subsequent holes...Focus investigation and corrective action/rehabilitation on section between #2 and #3

What Makes CAP ALERT® More Mobile?

Light weight cover

Not attached to frame (like hinged covers)

No antenna hole needed

Removing cover will not risk breaking the device.

Removing Device from other covers will leave a hole from the device bracket, and the antennae.

Antennae shields not needed to be replaced and reattached.

Cover fits in all standard CAP frames – just switch them out

80:20 Rule for Sewer Improvements

- 80% of the problems are Likely in 20% of the system...so why spend valuable municipal funds blanketed across large areas?
- Use **CAP ALERT**[®] as a scalpel rather than a club to focus your efforts and resources
- Reduce Cost with focused effort and by reducing number of high-priced devices

COST SAVINGS!!!!

Summary

1

1) Buy fewer devices!!!

2

2) Prioritize Rehab Investments

3

3) Cover + Frame + Device + 3-Year Subscription ...

4

PRICE \approx 60% LESS THAN THE POPULAR CHOICE

CAP ALERT®

Custom designed for CAP cover and integrated into CAP honeycomb protective structure. Cover can be dragged across street without damaging CAP ALERT®

Battery integrated into single, field replaceable unit.

Single bolt holding CAP ALERT® to cover. Easy to change.

Focused horn gives a 2.6 degree beam width at 30 ft

Depth sensors detects from 12 inches below the cover to 30 ft. No limitation until water reaches 12 inches to the cover.

Ultrasonic sensor mounted into CAP ALERT® device. Nothing protruding below cover.

Cellular LTE CatM1 technology (new LTE standard for increasing range). Works with multiple cellular providers, through their many cell towers.

Cellular doesn't require line of sight between device and tower.

CAP ALERT® transmits through CAP cover without needing a special antenna.

CAP ALERT® will sell for between \$3000 - \$4000: includes 1) device 2) cover 3) frame 4) preassembly. A 3-year cellular and service subscription for added \$1000 brings total cost to \$4000-\$5000



Home Screen of Dashboard (one unit)

Home Realtime - last minute user@mcallen.com Customer

CAP Alert Covers

Site ↑	Device	AWOL	Water Level	Increase	Decrease	Report	Battery	ReportTime
SSMH-11035	C00003	●	0 Ft 8 in	0.0 Ft	0.0 Ft	Manhole Water Level 0 Ft 8.2 In From Bottom Bat=100% 3.63V RSSI=7	●	5:00:02 PM 9/20/2022

Items per page: 30 1 - 1 of 1

Level (ft)

Realtime - last 5 days 12 hours

Water Level

min max avg latest
0.03 1.44 0.85 0.69

Alarms

Realtime - last 30 days

Created time ↓	Originator	Type	Severity	Status	
2022-09-12 10:00:29	SSMH-11035	Critical High Level	Critical	Active Unacknowledged	... ✓ ✕
2022-09-12 09:00:39	SSMH-11035	High Water Level Alarm	Major	Cleared Unacknowledged	... ✓ ✕

Items per page: 25 1 - 2 of 2

Location

Home Screen of Dashboard (multiple)

Home CAP Dashboard ▾ Realtime - last minute

CAPAAlert Devices

Site Device ↑	UUID	AWDL	Batt Status	Water Level	Device Uptime	Report	ReportTime
Harlingen C00001	C00001	●	●	2.57 Ft	146d 03h 12m	Manhole Water Level 2 Ft 6.8 In From Bottom Chg=7% Bat=94% 3.46V RSSI=8	3/24/2022, 9:00:05 PM
Harlingen R00095	R00095	●	●	3.97 Ft	12h 56m 08s	Manhole Water Level 3 Ft 11.5 In From Bottom LOW BATTERY=21% 2.84V	9/11/2021, 1:00:02 PM
LWWTP - C00007	C00007	●	●	30.32 Ft	56s	MagSwipe Manhole Water Level 30 Ft 3.8 In From Top Cover Bat=100% 3.63V Radio=4	10/19/2022, 12:26:16 PM
Manteca C00005	C00005	●	●	1.95 Ft	19d 20h 32m	Manhole Water Level 1 Ft 11.4 In From Top Cover Bat=100% 3.63V Radio=8	10/19/2022, 3:00:04 PM
Manteca C00006	C00006	●	●	1.98 Ft	19d 20h 23m	Manhole Water Level 1 Ft 11.7 In From Top Cover Bat=100% 3.63V Radio=6	10/19/2022, 3:00:04 PM
MCAL-SSMH-11035	C00003	●	●	0.93 Ft	56d 17h 37m	Manhole Water Level 0 Ft 11.1 In From Bottom Bat=100% 3.63V Radio=7	10/11/2022, 9:00:02 AM
NTW C00002	C00002	●	●	2.03 Ft	7d 13h 44m	Manhole Water Level 2 Ft 0.3 In From Top Cover Bat=100% 3.63V Radio=0	10/19/2022, 12:00:05 AM

Alarms

Realtime - last day

<input type="checkbox"/>	Created time ↓	Originator	Type	Severity	Status	Acknowledged time
<input type="checkbox"/>	2022-10-19 12:26:43	LWWTP - C00007	Critical High Level	Critical	Active Unacknowledged	
<input type="checkbox"/>	2022-10-19 12:26:43	LWWTP - C00007	High Water Level Alarm	Minor	Active Unacknowledged	
<input type="checkbox"/>	2022-10-19 12:26:13	LWWTP - C00007	Low Water Level Alarm	Minor	Cleared Unacknowledged	

Items per page: 20 1 - 7 of 7

Items per page: 10 1 - 3 of 3

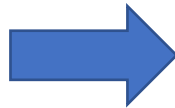
17



Specific CAP ALERT Device Reading Top Left Quadrant

Search
Expand
Export
Full Screen

Click on
Device
Row



The screenshot shows the 'Home' screen of the CAP Alert Covers application. The main section is titled 'CAP Alert Covers' and contains a table with the following data:

Site ↑	Device	AWOL	Water Level	Increase	Decrease	Report	Battery	ReportTime
SSMH-11035	C00003	●	0 Ft 8 In	0.0 Ft	0.0 Ft	Manhole Water Level 0 Ft 8.2 In From Bottom Bat=100% 3.63V RSSI=7	●	5:00:02 PM 9/20/2022

Below the table is an 'Alarms' section with a 'Realtime - last 30 days' filter. It shows a table of alarm events:

Created time ↓	Originator	Type	Severity	Status
2022-09-12 10:00:29	SSMH-11035	Critical High Level High Water	Critical	Active Unacknowledged
				Cleared

On the right side of the screen, there are two charts: 'Level (ft)' showing a realtime graph for the last 5 days 12 hours, and 'Location' showing a map with a red pin at 'Baldwin Mobile Home Manor' near Datepalm Ave and Tint On Wheels 18 St.

Home Screen
Shows All
Devices – This
example only
has one device

Specific CAP ALERT® Device Reading (after clicking device row)

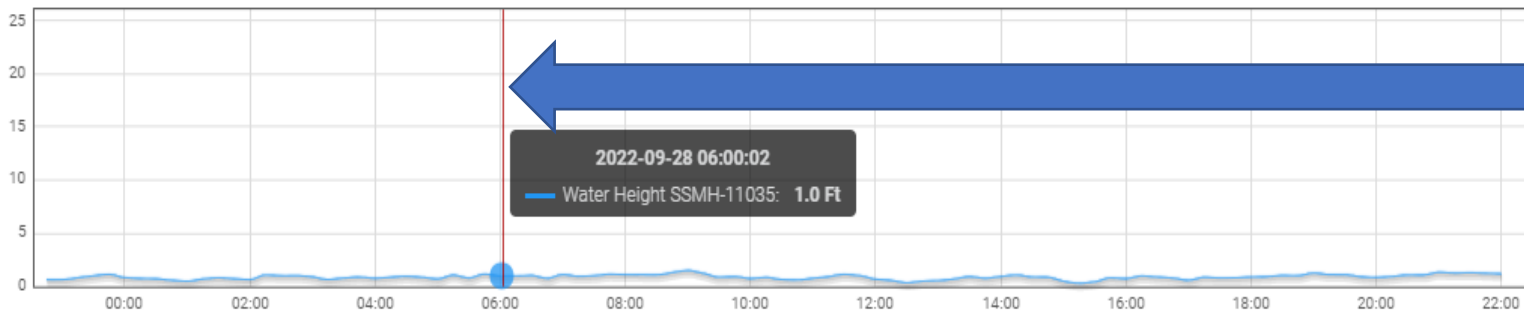
Home > SSMH-11035

🕒 Realtime - last minute



Water Height (Ft)

🕒 Realtime - last day



min max avg latest
0.32 1.51 0.9 1.2

Alarms

🕒 Realtime - last 7 days

☐ Created time ↓

Originator

Type

Severity

Status

Pressure

Battery Status

**Hold Mouse
Over Specific
Time for
Detailed
Minute-To-
Minute Data at
One Location**



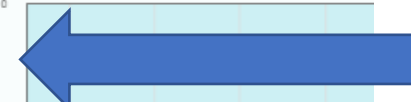
Settings

Top Left Quadrant – Gear Symbol

The screenshot shows the 'Home' page of the CAP Alert Covers interface. The top left quadrant displays a table of alert covers. The top right quadrant shows a 'Level (ft)' chart. The bottom left quadrant shows an 'Alarms' table. The bottom right quadrant shows a 'Location' map. A gear icon is circled in the top right corner of the alert covers table.

Site	Device	AWOL	Water Level	Increase	Decrease	Report	Battery	ReportTime
SSMH-11035	CD0003	●	0 Ft 11 In	0 Ft 4 In	0.0 Ft	Manhole Water Level 0 Ft 11.2 In From Bottom Bat=100% 3.63V RSSI=7	●	6:00:02 PM 9/19/2022

Created time	Originator	Type	Severity	Status
2022-09-12 10:00:29	SSMH-11035	Critical High Level	Critical	Active Unacknowledged
2022-09-12 09:00:39	SSMH-11035	High Water Level Alarm	Major	Cleared Unacknowledged



Click on Gear Icon



Settings Screen (after clicking gear icon)

- Low Water Alarm
- High Water Alarm
- Critical Alarm
- Hrs. no signal > AWOL
- Recipient Emails
- Text Recipient #
- Notifications or Not?
- Send Alarms to Reign?

Home > SSMH-11035

Device Settings

SSMH-11035 Device Settings

Set TimeZone (EST5EDT, CST6CDT, MST7MDT, PST8PDT, AST, HST)
CST6CDT

Low Water Level Alarm Value (Ft)

High Water Level Alarm Value (Ft)
2

Critical High Water Level Alarm (Ft)
12

Amount of Time in Hours Before Considered AWOL (Hours)
4

Alarm Email - All Alarms Sent Here
cagonzalez@mcallen.net; mramirez@mcallen.net; jolviedo@mcallen.net; dgarza@mcallen.i

Text Alarm All Alarms Sent Here

Show Alarm Acknowledgements - Do you want to receive Alarm Acknowledgements?

CC Alarms to Reign

Latest Readings

SSMH-11035

Name	SSMH-11035
UUID	C00003
Water Level	0 Ft 8 In
Water Increase	0.0 Ft
Water Decrease	0.0 Ft
Report	Manhole Water Level 0 Ft 8.2 In Fr
Battery Level	100 %
Battery	3.63 V
RSSI	7
Status	
Status Event	Scheduled(3)
Last Comm Time	5:00:02 PM 9/20/2022
Seq#	869
Low Level Alarm	
High Level Alarm	2.0 Ft
Critical High Level Alarm	12.0 Ft



Home Screen -Top Right Quadrant Level Reading

The screenshot displays the CAP Home Screen interface. The top left section shows 'CAP Alert Covers' with a table of device information. The top right section shows the 'Level (ft)' graph for device SSMH-11035, with a dropdown menu open for 'Realtime - last 5 days 12 hours'. The dropdown menu has two options: 'Last' (selected) and 'Interval'. The 'Last' option is further configured with 'Days: 5', 'Hours: 12', 'Minutes: 0', 'Seconds: 0', and an 'Advanced' toggle. The 'Interval' option is currently unselected. Below the graph, there are statistics for 'min', 'max', 'avg', and 'latest' values. The bottom left section shows 'Alarms' with a table of recent alerts. The bottom right section shows a 'Location' map.

Site	Device	AWOL	Water Level	Increase	Decrease	Report	Battery	ReportTime
SSMH-11035	C00003	●	0 Ft 8 In	0.0 Ft	0.0 Ft	Manhole Water Level 0 Ft 8.2 In From Bottom Bat=100% 3.63V RSSI=7	●	5:00:02 PM 9/20/2022

Level (ft)
Realtime - last 5 days 12 hours

Realtime History

Last
Last
Days Hours Minutes Seconds Advanced
5 12 0 0

Interval
Data aggregation function
None

Max values 6465

Timezone
Browser Time (UTC-05:00)

Cancel Update

Water Level

min max avg latest
0.03 1.44 0.85 0.69

Created time	Originator	Type	Severity	Status
2022-09-12 10:00:29	SSMH-11035	Critical High Level	Critical	Active Unacknowledged
2022-09-12 00:00:20	SSMH-11035	High Water	Major	Closed Unacknowledged

Click above graph for dropdown

Two Options

1. "Realtime"
2. "History"



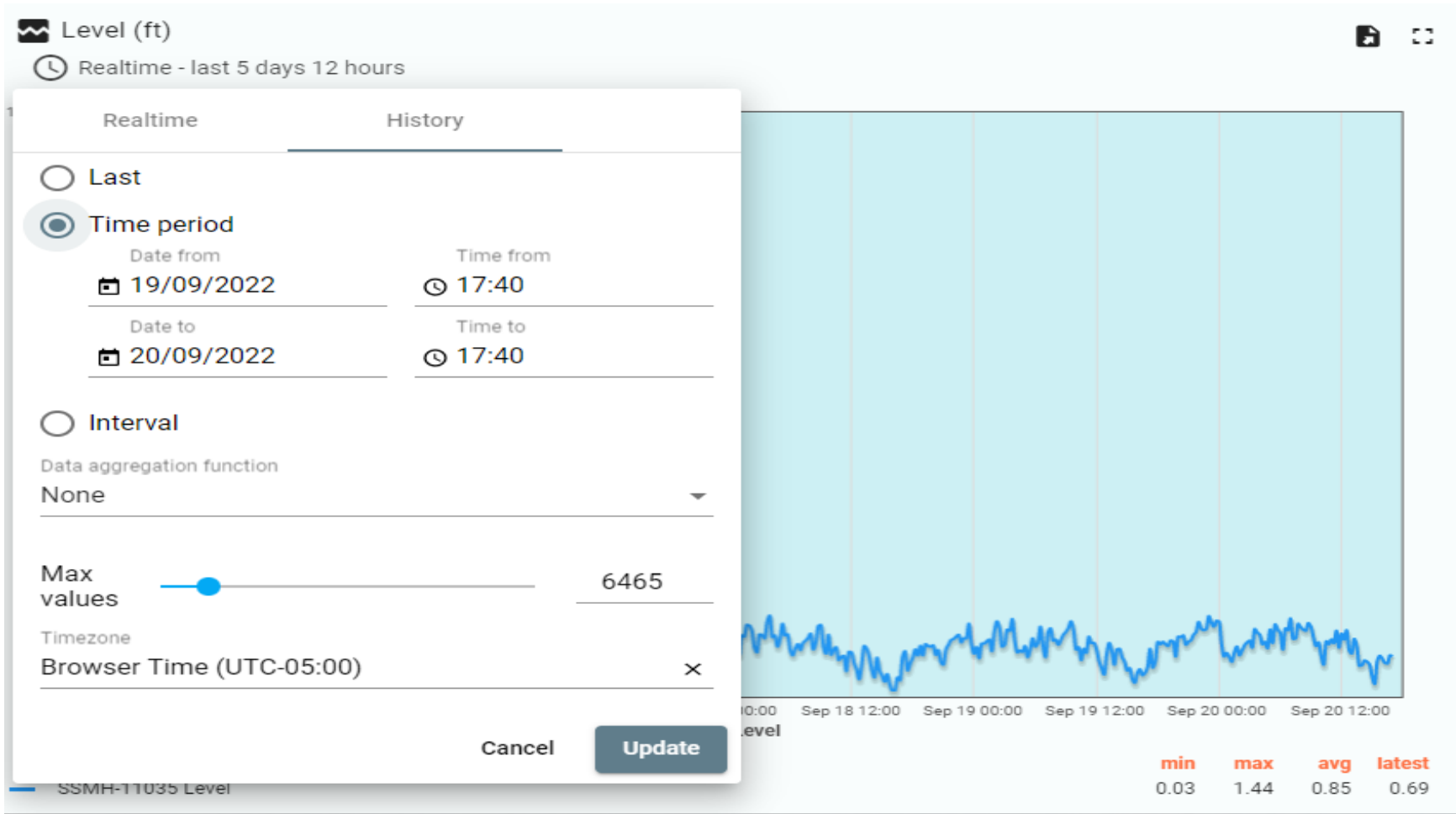
Level Reading- Top Right Quadrant “History” Drop Down Selection – “Last”



“Last”
Select 1 minute to
30 days of
readings to
Display on Graph



Level Reading- Top Right Quadrant “History” Selection – “Time Period”



“Time Period”
Select several months & years of readings to display on graph



Alarms

Home Screen - Bottom Left Quadrant

The screenshot displays the Home Screen interface with four main sections:

- CAP Alert Covers:** A table listing alert covers with columns for Site, Device, AWOL, Water Level, Increase, Decrease, Report, Battery, and ReportTime. A single row is visible for SSMH-11035.
- Level (ft):** A line graph showing water level over time. The y-axis ranges from 0 to 10 feet. The x-axis shows dates from Sep 15 12:00 to Sep 20 12:00. The graph shows a fluctuating water level around 0.5 feet.
- Alarms:** A table listing alarms with columns for Created time, Originator, Type, Severity, and Status. Two rows are visible.
- Location:** A map showing the current location with various landmarks and streets.

Site	Device	AWOL	Water Level	Increase	Decrease	Report	Battery	ReportTime
SSMH-11035	C00003	●	0 Ft 8 In	0.0 Ft	0.0 Ft	Manhole Water Level 0 Ft 8.2 In From Bottom Bat=100% 3.63V RSSI=7	●	5:00:02 PM 9/20/2022

Created time	Originator	Type	Severity	Status
2022-09-12 10:00:29	SSMH-11035	Critical High Level	Critical	Active Unacknowledged
2022-09-12 09:00:39	SSMH-11035	High Water Level Alarm	Major	Cleared Unacknowledged

Click row of specific alarm



Alarm Details

Alarm details ✕

Created time	Originator
2022-09-12 10:00:29	SSMH-11035

Start time	End time
2022-09-12 09:45:02	2022-09-12 16:00:26

Type	Severity	Status
Critical High Level	Critical	Active Unacknowledged

Details 🗖

```
1 {  
2   "data": "Water Level is 12.95 Ft."  
3 }
```

Close Acknowledge Clear

Displays

1. "Created Time" –
2. "Originator" - CAP ALERT Identification
3. "Start Time"
4. "End Time"
5. "Type"
6. "Severity"
7. "Status"
8. Level of Alarm (Low, High, Critical), and if Alarm has been acknowledged



Home Screen - Bottom Right Quadrant Location on Map

The screenshot displays the Home screen interface with the following sections:

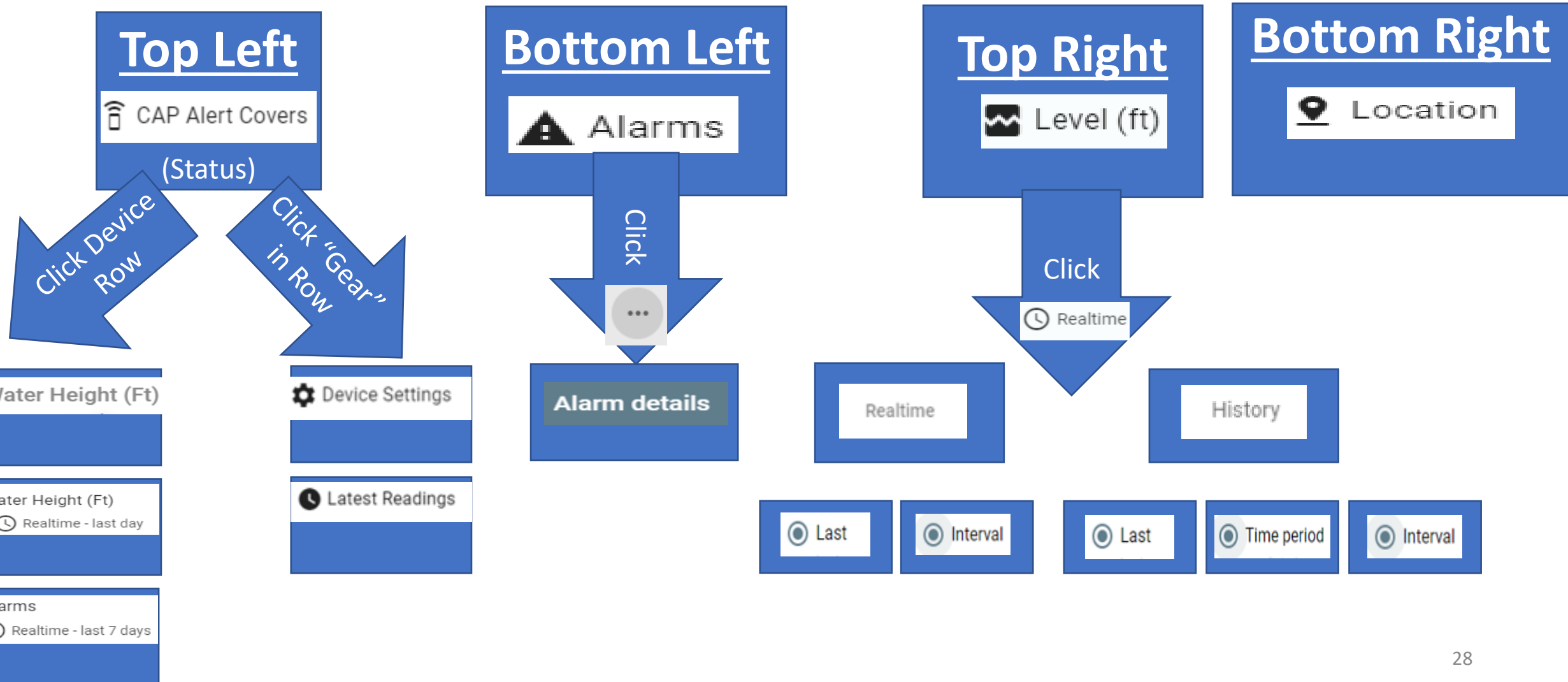
- CAP Alert Covers:** A table listing alert covers for site SSMH-11035. The table includes columns for Site, Device, AWOL, Water Level, Increase, Decrease, Report, Battery, and ReportTime. The current alert is for Manhole Water Level 0 Ft 8.2 In From Bottom Bat=100% 3.63V RSISL=7, reported at 5:00:02 PM on 9/20/2022.
- Level (ft):** A line graph showing the water level in feet over the last 5 days and 12 hours. The y-axis ranges from 0 to 10 feet. The x-axis shows time from Sep 15 12:00 to Sep 20 12:00. The graph shows a fluctuating water level around 1-2 feet.
- Alarms:** A table listing recent alarms for the last 30 days. The table includes columns for Created time, Originator, Type, Severity, and Status. Two alarms are listed: a Critical High Level alarm at 2022-09-12 10:00:29 and a Major High Water Level Alarm at 2022-09-12 09:00:39.
- Location:** A map showing the location of the device(s) in McAllen, Texas. The map includes street names like Cedar Ave W, N 4th St, and N 3rd St, and various landmarks like Baldwin Mobile Home Manor, University Draft House, and Aloha Inn.

Basic Map Showing
Location of Device(s)





Dashboard Flow Chart from the "HOME" Screen

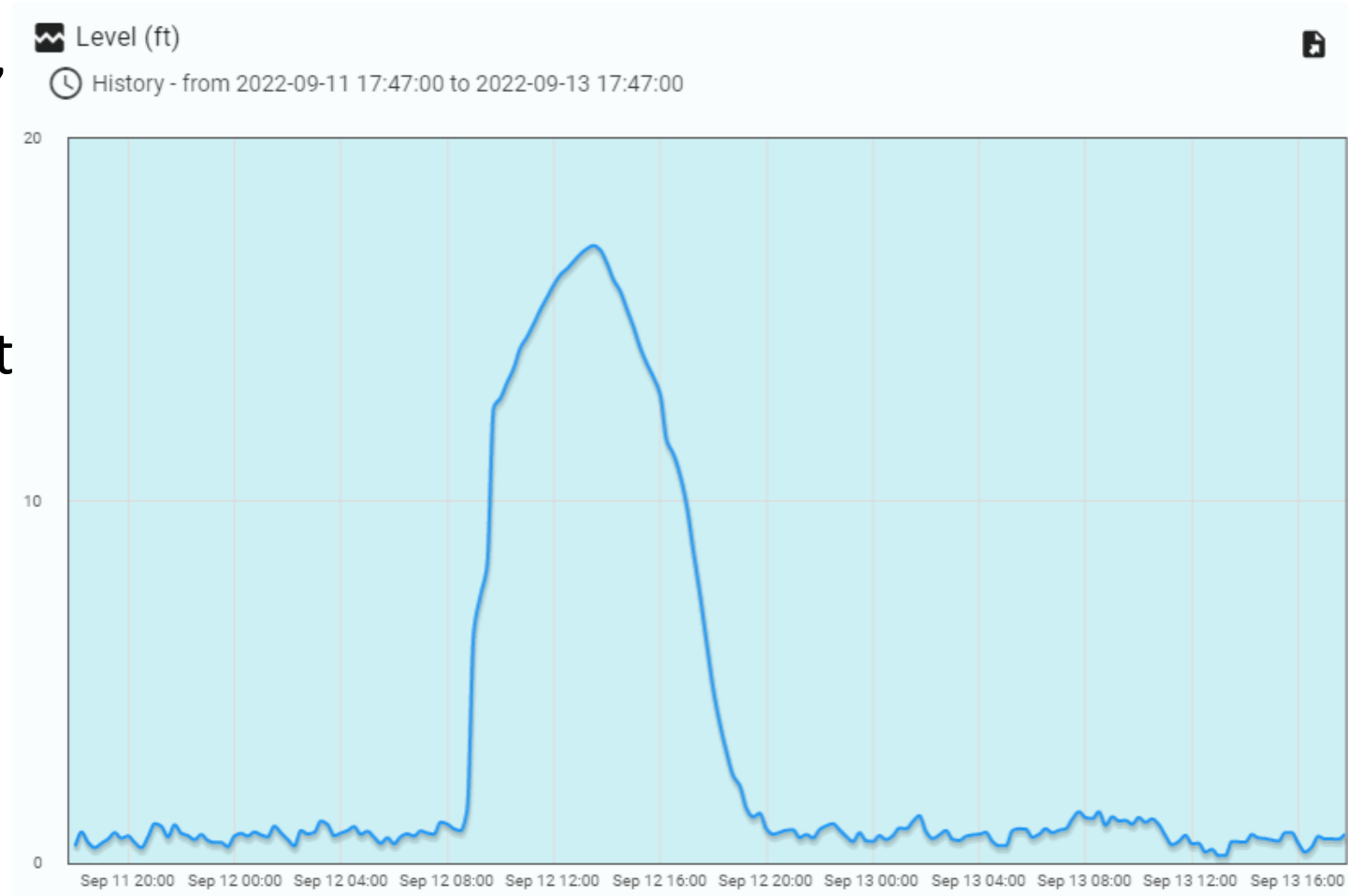




Example of Fluid Level Spike

6 inches to 17 feet

- Inflow from Rain, Tides, Snow Melt, River Overflows
- Downstream Lift Station Power Outage
- Upstream Lift Station more efficient than downstream
- Cleanout of Downstream Lift Station
- Hydrant Flushing near Sanitary manhole
- Blockage

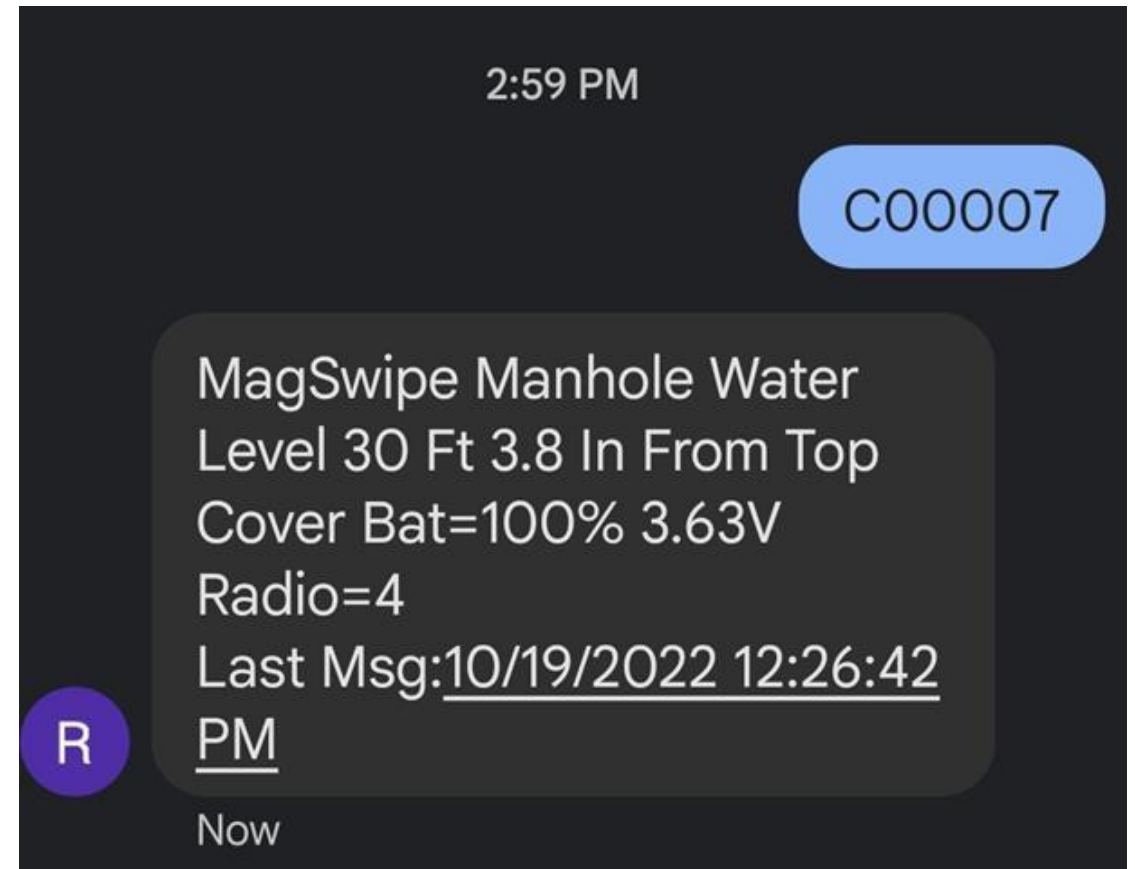




Text Message Device for Real Time Status

- Authorized Individuals Text the Device ID# to
844-6473446
- Send authorized individuals to support@reignrmc.com.
- Device ID# is given in Welcome Letter

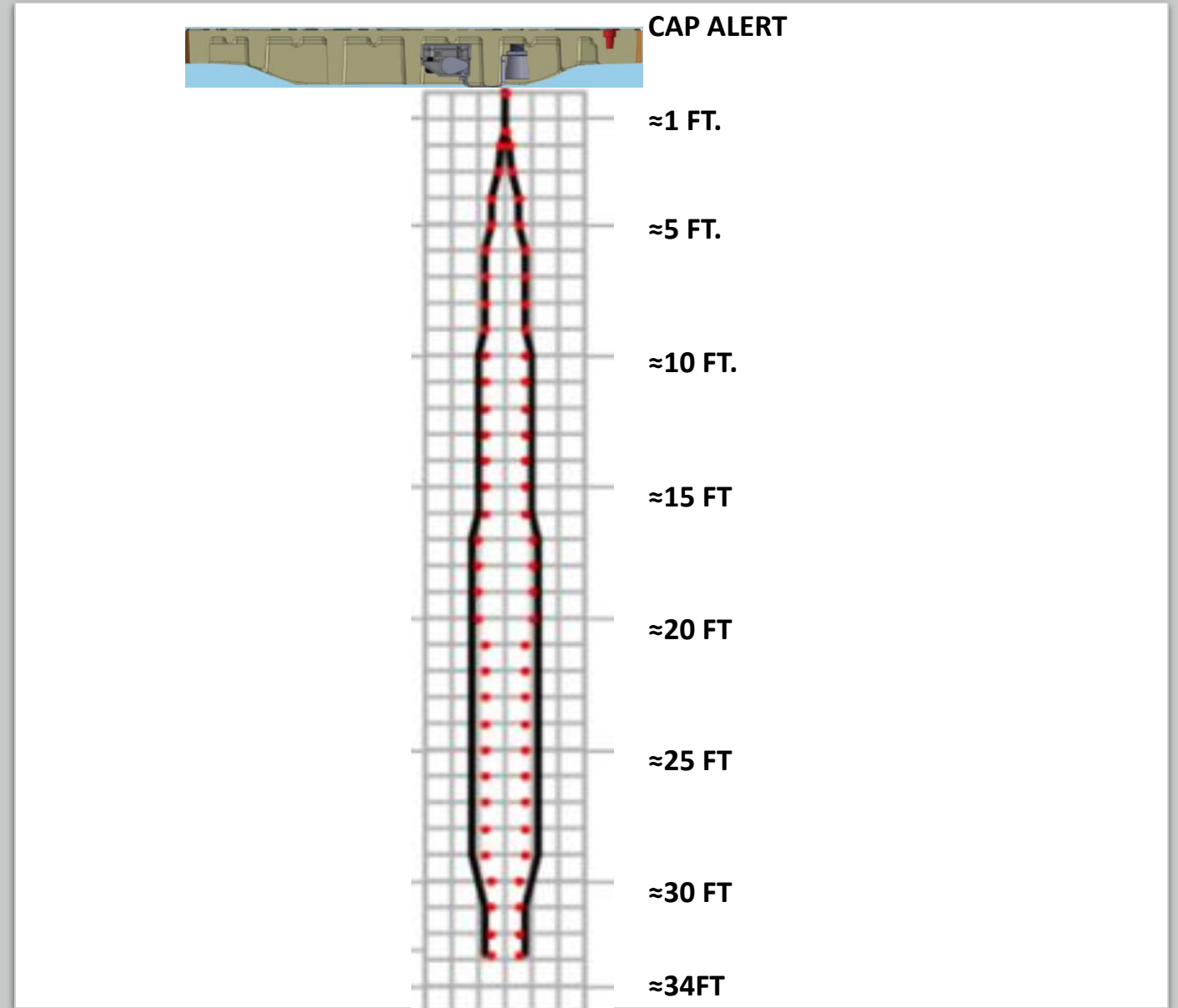
Sample Status Response from Text





Ultrasonic Beam – Width & Distance

**Align the ultrasonic horn in a position farthest from obstructions to avoid false alarm “echoes”– e.g. stairs, platforms, inlets*





Q&A – Install Location Details

Are their trench width limitations?

- **2 ft.** The sensor focuses on echoes farthest away, but can make false alarms if a protruding object, angled manhole wall, or other obstruction is below the sensor. If narrower than 2 ft wide, we could have issues with echoes off the side. Try to align the cover so the sensor horn is farthest from the position of any obstructions.

Does the trench need to be straight or are curves ok?

- **The sensor needs to have a direct view straight above the invert.** If the sensor cannot see the invert, we cannot get a reading.

What is the minimum and maximum depth they can read accurately?

- **12 inches to 30 ft**

Will it work in any diameter of MH 48” 60” or larger etc?

- **The width of the manhole should not affect reading if the diameter is larger than 24 “.** Depth maximum is 33.

Will hanging a H2S gas sensor in the same manhole be a distraction for the water level sensor.

- **As long as the sensor isn't directly interfering with the beam close to the sensor, this shouldn't be an issue.**



Q&A – Install Location Details

Will it work in any shape MH or vault round or square or rectangular?

- The shape of the manhole vault should not affect reading.

Will structures distract the sensors? E.g. cables, floats, a shelf, a step, or equipment hanging down

- The software learns structures that are stationary and ignores them. The sensor focuses on reflecting surfaces farther away.

Will water condensation impede readings from the Ultrasonic Sensor? Ice?

- When the sensor powers up to take a reading, the ultrasonic vibration usually breaks up any surface condensation, but if there's a layer of ice on the sensor, it may not be able to break that up, and an operator would need to address the blockage locally.

Are there flow limitations?

- The ultrasonic sensor can detect levels with choppy water or foam in the liquid.

If they move the CAP ALERT®, and they still want the map to be accurate, send you all the new GPS coordinate or address?

- When the device is moved, the users will need to send two pieces of information to the Customer Service email: 1) New invert depth, 2) New GPS coordinates or address. #1 is critical for proper functioning while #2 helps location.

Q&A – User Interface

Q How do we see the data? Website? If there's a website, are there any additional fees for that?

A. A welcome letter is sent once the T&C's, Drawing, and Limited Warranty are signed. This letter contains the link, login name and password. The Dashboard allows them to see their devices, graphs, alarms (active and historical) and mapped device locations. This is included with the 3-year monitoring,

Q Texting Device – How do they text it?

A. Users can communicate with a device to get the current status, including water level, battery level, radio signal strength and when the last message was sent. A customer sends a list of authorized numbers they want to allow text access to their devices to support@reignrmc.com. Then, authorized users can text the Device ID# to 844-6473446.

Q Alerts – How do they get communicated? How do they acknowledge it? Can they do this from a device? Can they change or remove notifications from device (email, text, levels)

A. Alerts are received via text message, email, and/or phone call. Alerts are acknowledged on the Dashboard, accessed from a desktop or mobile device. The Low level, High level and Critical high levels are set in the same dashboard, along with the Text, E-Mail or Voice number to send the Alert. This is editable from the Dashboard Settings screen.

Q&A – User Interface Continued

Q Can they set the zero point at the lowest possible read point for purely alarm use?

A. Alarms can be set at any level; default -three levels (Low, High and Critical High) set to report from the bottom of the invert or top of the sensor. Caution: too many low reading for alarms could be a “bother” with constant texts and emails. Also, an alarm is a transmission, decreasing battery life.

Q Can they look at the data 24/7? Or does it need to be retrieved?

A. The Dashboard is available 24/7. “Home” lists all the devices, their latest reported readings and history. Reports display any time period, or a historic time range (between dates). Devices automatically report latest readings on the hour, and immediate readings if >2% changes between readings.

Q Will the Dashboard be accessible for both IOS and Android? Apple vs. Microsoft Windows? Updates?

A. It is a browser interface and works with all desktop and mobile devices.

Q How many dashboards are used if they have multiple devices?

A. Only one dashboard per customer is used and can monitor all devices at once or individually within the same dashboard.

Q&A – User Interface Continued

Does text device give real time data and is that a transmission?

- **The Text interface will display the last reported reading, which is normally on the hour, or the last immediate transmission based on rate of change.**

If reading is every 5 minutes can you avoid the invalid reading if you open and close in less than 5 minutes?

- **The 5-minute lag could allow for a breach without a transmission. But a planned for release will have a “tilt” sensor to act as a potential threat indicator**

Can the customer add their info to the software? Date installed, city name, location, images etc.

- **The dashboard is customizable. Send Reign requests - content will take some of the desktop screen.**

Can CAP, Reign, Reps add other information to the screen (e.g. CAP logo, phone numbers, emails, etc.)

- **Yes. Please give suggestions of what you would like to see on the Dashboard.**



Q&A – Battery Details

Q Battery Life?

A. In one year, there are 8,760 transmissions at a frequency of 1 per hour. The CAP ALERT® technology with the Reign solution has an estimated transmission quantity of 8000 to 12000 transmissions.

Q How to best extend battery life?

A. Reduce transmissions / readings:

- i. Data Transmission Frequency- This can be set from once an hour to every number of days or months. The default is once per hour. Cellular usage is 85% of the battery usage.
- ii. Water Level Readings - Default is every 5 minutes and record every 15 minutes. Reading the water level uses about 15% of the battery life. Frequency can be reduced.

Q How do they reduce transmission / reading frequency?

A. Send an email to support@reignrmc.com or call the contact information for Reign Customer Service that is given on the Welcome Letter.



Q&A – Battery Details Continued

What type of battery? Can the agency change or recharge the batteries?

- **Lithium Thionyl Chloride (Li-SoCl₂) for the Reign device for high power without Lithium-Ion transportation issues; Also, wider temperature operation range. New battery must be purchased.**

Why do AMI meters have 20-year battery life and yours only 2-3 years?

- **Many AMI use local radio networks or low power transmitters mounted on your city towers and the city needs to build and support the radio towers and infrastructure. These transmissions averages about 0.136% of the energy draw vs. the CAP ALERT[®] . AMIs use a low power technology to read a meter movement, while the CAP ALERT[®]'s ultrasonic sensor with enough energy to generate a sonic pulse to reflect off the water.**

Does the software give an indication of battery life remaining?

- **Yes. Battery life is displayed on the dashboard and can be reported by texting the device.**

Cost of new battery?

Today's price is \$40.

Q&A – Service & Support

What kind of support is there on the equipment and software ?

- Reign and/or CAP will give a 1-hour training session upon purchase. Questions or setting modifications can be emailed to Reign; CAP Reps will be able to support (eventually) many basic questions. Learn this training package and Q&A.

If something goes wrong with the sensors who will service them?

- The device should be detached and mailed to CAP or Reign for repair or replacement. There is only one bolt (perhaps two) to undo to detach the device from the CAP bottom.

Is loner or rental equipment available when the sensors are broken down?

- This idea is under consideration. Perhaps we have a standby unit that they could use and purchase for a reduced price.

If the battery dies, who will change the battery?

- Customer will be responsible for battery changes. This is a very simple process, and the training video will be posted on our website.

Can we buy just the electronics, battery, sensor, cables, and special attachment hardware to fasten the technology on existing covers?

- CAP ALERTs are sold as one complete preassembled unit. Pieces of the product are not sold separately (except replacement batteries).



Service & Support Continued

Q What is the warranty?

A. The Reign T&C give a 60-day warranty on the device. CAP has a 3 year Limited Warranty on the cover assuming proper installation, handling, storage and no post-sale product manipulation. In practice, CAP and Reign will make every effort to correct issues related to the product (within reason) beyond these cut-off dates.

Q Do you have toll free phone support with knowledgeable staff? –(cities can't always call outside of area code)

A. Yes.

- i. CAP can be contacted at (844) 344-CAP1 (2271) during normal business hours.**
- ii. Reign technical support can be reached at 833-467-3446 (833-GO-REIGN) Extension 0**
- iii. For service function of Factory Reps, it is expected that Reps will also be able to field calls after a reasonable learning curve.**

Q&A – Technical/Dimensional Details

Does it use cellular, satellite, radio or some other service to transmit?

- **It uses a multicarrier cellular SIM card to allow it to work in any area with cellular coverage.**

What is the depth of the manhole lid edge? (For CAP)

- **The CAP is 2.5 inches from the cover top to the frame ledge. The sensor horn opening sits about 0.5 inch higher than the bottom of the cover structural ribs (about 4- 4.5 inches from the cover top).**

How heavy are they?

- **The device weighs approximately 1.25 lbs.**

What is the precision of the readings?

- **Readings are within 0.1 inches.**

Beam angle?

- **The CAP ALERT® ultrasonic sensor's horn focuses the beam, to provide about a 2.6 degree beam width at 30 feet. The Smart Cover System uses a flat, unfocused 9 degree beam from sensor at 20 ft**



Q&A – Technical/Dimensional Details

What is the shortest reading?

- About 1.25 seconds

What wave frequency does the Reign sensor use for detection?

- CAP ALERT sensors use 42 kHz because it is a good compromise between range and accuracy. Higher frequencies can have longer range, but they are also less accurate. Lower frequencies are more accurate, but they have shorter range. 42 kHz is a good balance between these two factors.

Does the sensor work with a narrow beam that needs to be aligned with the flow in the MH cover or wide beam ?

- The beam pattern starts at about 2 inches, widens to 1 ft after 5 feet deep, 18 inches after 10 feet deep, and widens to about 24 inches wide after 15 ft. Then no beam width increases occur (in fact a bit of narrowing happens at about 29 ft).

Deeper than 30 ft, will the device transmit? Can device just “turn on” if a deeper than 30 ft manhole has rising fluids within the 30ft.

- If you have a manhole deeper than 30 feet and the water rises to less than 30 ft distance from the CAP, then it will trigger a transmission.

Expertise and Product History of Reign

Q How experienced? –

A. Reign team has been producing intelligent devices since 2002 and has many decades of wireless experience. The water level sensor vendor has been working with Reign team since 2005 and their sensors came out of work done for Navy sonar systems. 100,000s of the ultrasonic sensor used for detecting snow levels, tank levels, river levels, people counting.

Q. What kind of problems have you had in the past equipment? software?

A. The underlying device used in the CAP ALERT® has been on the market for several years, manufactured in the US and has few issues. Historically, the main causes of device failure have been:

- a. Environmental. Lightning, being submerged for extended time intervals, H₂S gas that gets into devices which are not properly sealed.**
- b. Poor cellular coverage can lead to increased battery usage, that will result in shorter than expected battery life.**
- c. Physical damage. We don't expect to see this in the CAP Alert device due to the honeycomb construction providing protection for the device.**



Purchasing a CAP ALERT- Necessary Documents / Information



T&C from all Reps once before they start selling for both Reign and CAP.



Need T&C's once from each municipality



T&C's will be sent with quotations and drawings and Limited Warranty



With signed docs and PO order is initiated



Customer receives Welcome Letter from Reign RMC and login information.



Customer sends authorized users for texting to support@reignrmc.com.